C1 – Public

# STRATEGIC FLOOD RISK ASSESSMENT OF THE KILDARE COUNTY DEVELOPMENT PLAN 2023-2029

## (Variation 2)

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## SFRA – KILDARE COUNTY DEVELOPMENT PLAN 2023-2029 (as varied)

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# 1 INTRODUCTION

## 1.1 Background

Kildare County Council (KCC) has prepared a County Development Plan (CDP) 2023 - 2029 in accordance with the requirements and provisions of the Planning and Development Act 2000, (as amended) (the "Act"). The preparation of the Plan has regard to key recent development trends and national, regional and local policy documents, in particular, the National Planning Framework (NPF) and the Regional Spatial and Economic Strategy for the Eastern Midland Region (RSES). It is also informed by Ministerial Guidelines issued pursuant to Section 28 of the Act together with EU requirements regarding Strategic Environmental Assessment (SEA), Appropriate Assessment (AA) and Strategic Flood Risk Assessment (SFRA). The adopted KCC CDP 2023 -2029 will replace the KCC CDP 2017 - 2023.

In compliance with the Directive and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 - 2011, KCC has carried out a SEA of the CDP 2023 - 2029 and has prepared an Environmental Report of the likely significant effects on the environment of implementing the new Plan.

The Environmental Protection Agency (EPA) document, SEA of Local Authority Land Use Plans outlines that the SEA should adopt policies to avoid and restrict the zoning of lands in flood prone areas. It should also adopt a policy that requires flood risk assessments to be undertaken for developments and zoning being proposed in flood prone areas. These policies should be prepared in accordance with the requirements of The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014) referred to hereafter as 'The Guidelines'.

The Guidelines recommend that a SFRA Report be undertaken to support the SEA of proposed development plans. KCC commissioned RPS to carry out a SFRA to support and inform the preparation of the CDP. The SFRA informs policy regarding inappropriate development in areas at risk of flooding and identifies areas where Site Specific Flood Risk Assessments (SSFRAs) should be undertaken for development.

**Note**: **This version of the report is the 2nd Variation of the Strategic Flood Risk Assessment of The Kildare County Development Plan 2023-2029. This update now includes the Self-Sustaining Growth Town of Newbridge within the report and assesses flood risk accordingly (Variation No. 2 to the CDP). This follows the 1st Variation which included the Town of Kilcullen into the SFRA (Variation No. 1 to the CDP).**

## 1.2 Report Purpose

The SFRA provides an assessment of all types of flood risk for the population centres identified in the CDP, as shown in **Table 2-1.** A review of available flood risk information and flood extent mapping was undertaken to identify any flooding or surface water management issues that may warrant further investigation. This information allowed KCC:

- To apply the Guidelines' sequential approach and make informed strategic land-use planning decisions; and
- formulate flood risk policies and identify how flood risk can be managed as part of the CDP for the population centres.

## 1.3 Disclaimer

The SFRA has been prepared in compliance with The Guidelines. It should be noted that the SFRA remains a live document and is based on the best available data at the time of preparation. It is subject to change based on more up to date and relevant flood risk information becoming available during the lifetime of the CDP.

All information in relation to flood risk is provided for general policy guidance only. All landowners and developers are instructed that KCC and their consultants can accept no responsibility for losses or damages arising due to assessments of the vulnerability to flooding of lands, uses and developments. Furthermore owners, users and developers are advised to take all reasonable measures to assess the vulnerability to flooding of lands in which they have an interest prior to making planning or development decisions.

It should be noted that the OPW flood extent mapping used to define the flood zones for this SFRA are bound by the disclaimer and other terms and conditions set out on the OPW website https://www.floodinfo.ie/map/floodmaps/. The website www.floodinfo.ie provides access to published flood mapping developed by the OPW as part of the Catchment Flood Risk Assessment Management (CFRAM) studies and the National Indicative Fluvial Mapping (NIFM) Study along with information about flood risk management in Ireland. The flood maps are 'predictive' flood maps, as they provide predicted flood extent and other information for a flood event that has an estimated probability of occurrence (the 1% Annual Exceedance Probability (AEP) and 0.1% AEP events – refer to **Section 3.2.3**), rather than information on floods that have occurred in the past.

Flood mapping developed by the OPW is not available for all zoned locations and land use maps within the CDP. For the areas where existing flood mapping was not available, indicative flood zones were generated using additional data including the mapped Drainage District Benefiting Area or from flows estimated from the OPW's Flood Studies Update (FSU) methodology, river geometry extracted from a LiDAR Digital Terrain Model (DTM) using GIS software, water levels produced using a 1-D hydraulic modelling software and the flood extents mapped on the LiDAR DTM using GIS software. This analysis provided indicative 'predictive' flood maps for the 1% AEP and 0.1% AEP events. All areas where a flood risk has been identified using this flood mapping analysis shall be subject to a site specific flood risk assessment to confirm the extent of flooding on the site.

KCC makes no representations, warranties or undertakings about any of the information provided on these maps including, without limitation, their accuracy, their completeness or their quality or fitness for any particular purpose. To the fullest extent permitted by applicable law, KCC nor any of its members, officers, associates, consultants, employees, affiliates, servants, agents or other representatives shall be liable for loss or damage arising out of, or in connection with, the use of, or the inability to use, the information provided on the flood maps including, but not limited to, indirect or consequential loss or damages, loss of data, income, profit, or opportunity, loss of, or damage to, property and claims of third parties, even if KCC has been advised of the possibility of such loss or damages, or such loss or damages were reasonably foreseeable.

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## 1.4 Report Structure

The Kildare County Study area and its primary watercourses are identified in **Section 2**.

A summary of the Planning System and Flood Risk Management Guidelines and the procedure for undertaking a SFRA is presented in **Section 3**.

**Section 4** outlines a broad overview of the requirements of Flood Risk Assessments (FRA) which should accompany planning applications.

The detailed information and data collated as part of the Stage 1 Flood Risk Identification carried out for the study area is discussed in **Section 5**.

**Section 6** documents the Stage 2 Initial Flood Assessment to confirm the sources of flooding that affect zoned areas and presents the information used to prepare the flood zone maps.

Potential zoning areas at risk from flooding are examined and recommendations for Flood Risk Assessments are made in **Section 7**.

**Section 8** details the flood risk management policies and objectives being brought forward to the CDP and lastly **Section 9** provides a summary.

# 2 STUDY AREA

## 2.1 Introduction

The County Kildare administrative area is shown **Figure 2-1** below. The County has an extent of approximately 169,550 hectares. It occupies a strategic position within the Eastern Region of the Eastern and Midland Regional Assembly and also forms part of the Greater Dublin Area. The 2016 Census shows the County has a population of 222,500. Preliminary census data was published in June 2022 which indicated that County Kildare has a population of 246,977 persons, representing an 11% increase from Census 2016. This SFRA examines flood risk in a Self-Sustaining Growth Town, Town Environs, Towns, Villages and Settlements as identified in **Table 2-1**. Some larger towns within the County are subject to their own Local Area Plans (LAPs) and SFRAs. The settlement hierarchy and definitions for environs, small towns etc. are outlined in the CDP Volume 1, Chapter 2 - Kildare Core Strategy and Settlement Strategy.

**Table 2-1: Self-Sustaining Growth Town, Town Environs, Towns, Villages and Settlements examined in the SFRA**

| Self-Sustaining Growth Towns | Environs Plans | Small Towns | Villages | Rural Settlements |
|---|---|---|---|---|
| • Newbridge | • Blessington<br>• Ladytown (Naas) | • Castledermot<br>• Derrinturn<br>• Kilcullen<br>• Kill<br>• Prosperous<br>• Rathangan | • Allenwood<br>• Athgarvan<br>• Ballitore<br>• Ballymore Eustace<br>• Caragh<br>• Coill Dubh / Coolearagh<br>• Crookstown<br>• Johnstown<br>• Johnstownbridge<br>• Kildangan<br>• Kilmeague<br>• Moone<br>• Narraghmore<br>• Robertstown<br>• Straffan<br>• Suncroft<br>• Timolin | • Allen<br>• Ardclough<br>• Ballyshannon<br>• Brannockstown<br>• Broadford<br>• Brownstown<br>• Calverstown<br>• Clogharinkoe<br>• Cutbush<br>• Kilberry<br>• Kilkea<br>• Kilmead<br>• Kilteel<br>• Lackagh / Mountrice<br>• Maganey / Levitstown<br>• Milltown<br>• Nurney<br>• Rathcoffey<br>• Staplestown<br>• Two Mile House |

## 2.2 Watercourses

The approximate total length of watercourses within the County is 1,250 km. The principal rivers include the Liffey, Barrow and Boyne. Other notable rivers include the Rye Water, Morrell, Lerr, Greese, Tully, Slate and Lyreen. **Figure 2-1** shows the watercourses and principal rivers in the County. All of the watercourses lie within Hydrometric Areas (HA) 07 (Boyne), HA 09 (Liffey-Dublin Bay) and HA 14 (Barrow). The catchments of the County are largely rural but there are large urban areas along each of the principal rivers e.g., Leixlip, Celbridge, Newbridge (Liffey), Athy, and Monasterevin (Barrow).

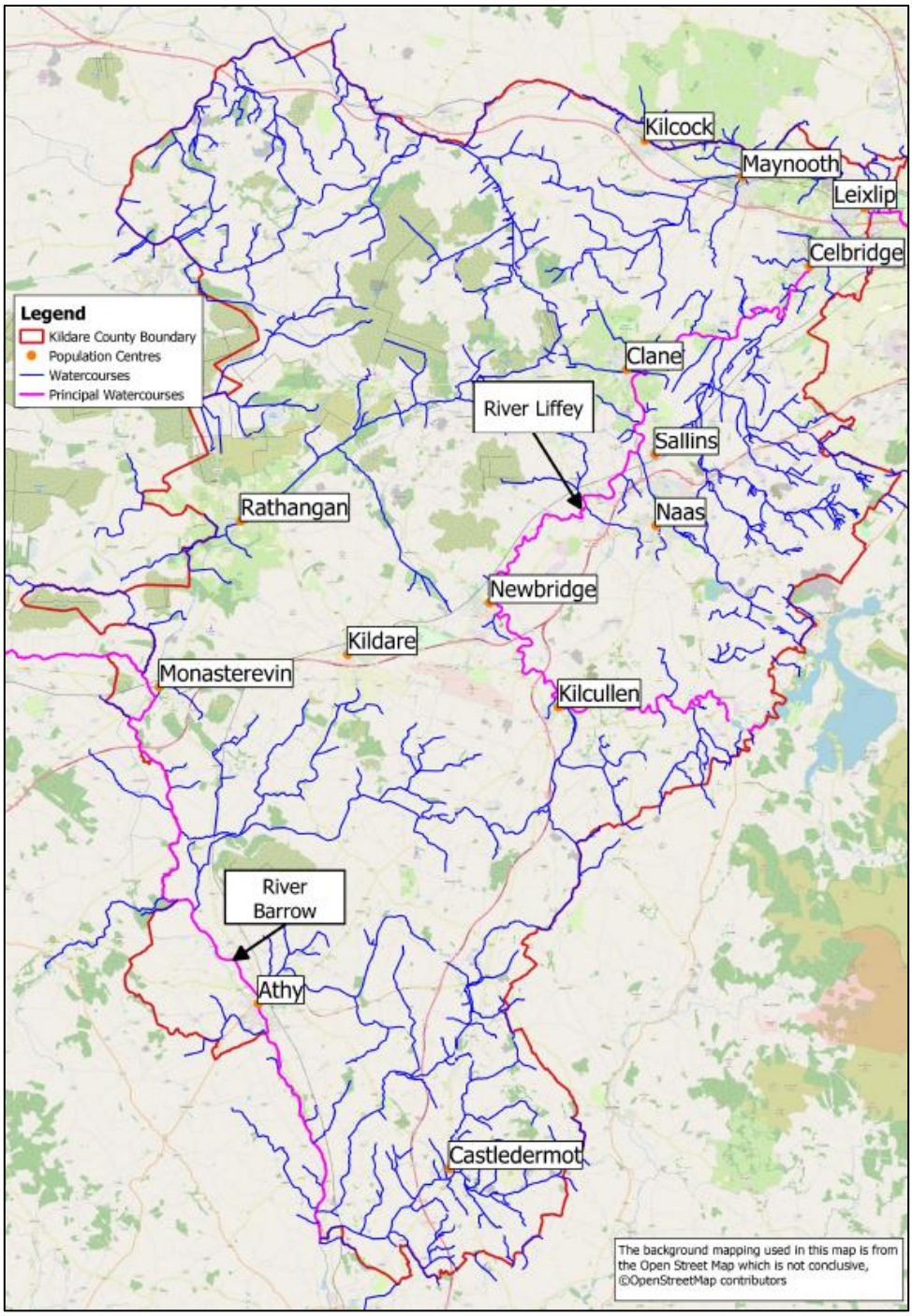


**Figure 2-1: County Kildare Extent and Watercourses**

## 2.3 Non-County Development Plan Areas

While the Kildare CDP identifies flood risk in the areas outlined in **Table 2-1** above, the larger towns and population centres in the County are subject to their own Local Area Plans. SFRAs for these areas will be carried out on an individual basis as the Local Area Plans are due for review and updating. The most up to date flood risk information available will be used to identify flood prone areas within these LAPs.

The following towns will be subject to an SFRA within the lifetime of the Kildare CDP: Athy, Celbridge, Clane, Kilcock, Kildare, Leixlip, Maynooth, Monasterevin, Naas and Sallins.

# 3 THE PLANNING SYSTEM AND FLOOD RISK MANAGEMENT GUIDELINES FOR PLANNING AUTHORITIES

## 3.1 Introduction

In 2009 the Department of Environment, Heritage and Local Government in conjunction with the Office of Public Works published The Planning System and Flood Risk Management: Guidelines for Planning Authorities ('The Guidelines'). The purpose of The Guidelines is to ensure that flood risk is considered by all levels of government when preparing development plans and planning guidelines. They should also be used by developers when addressing flood risk in development proposals. The Guidelines should be implemented in conjunction with the relevant flooding and water quality EU Directives including the Water Framework Directive (River Basin Management Plans (RBMPs)) and the Floods Directive Catchment Flood Risk Assessment Management Studies (CFRAMS).

The core objectives of The Guidelines are to:

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

The Guidelines recommend that FRAs be carried out to identify the risk of flooding to land, property and people. FRAs should be carried out at different scales by government organisations, local authorities and for proposed developments appropriate to the level of information required to implement the core objectives of The Guidelines. The FRA scales are Regional Flood Risk Appraisal (RFRA), SFRA and SSFRA.

This section presents a brief summary of The Guidelines, for more detail refer to The Guidelines and the accompanying Technical Appendices at https://www.gov.ie/en/publication/7db50-the-planning-system-and-flood-risk-management-guidelines-for-planning-authorities-nov-09/.

## 3.2 Flood Risk Assessment

### 3.2.1 Flood Risk Assessment Approach

The Guidelines recommend that FRAs be carried out to identify the risk of flooding to land, property and people. FRAs should use the Source-Pathway-Receptor (S-P-R) Model to identify the sources of flooding, the flow paths of the floodwaters and the people and assets impacted by the flooding.

A Flood Risk Assessment is required to identify and assess each of the three S-P-R components

- The probability and magnitude of the SOURCE; eg. River Levels, Rainfall (intensity & duration)
- The flow behaviour across PATHWAYS; eg. floodplains and surface water routes, including obstructions and barriers to flow paths.
- The vulnerability of RECEPTORS; eg. Potential impacts on people, property, infrastructure and the environment.

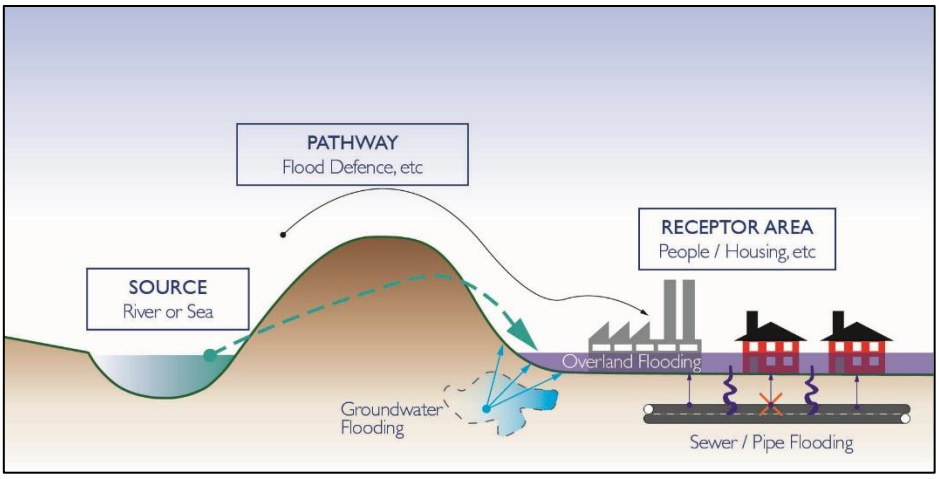


**Figure 3-1: Source, Pathways and Receptors of flooding**

FRAs should be carried out using the following staged approach:

- **Stage 1 Flood Risk Identification** – to identify whether there may be any flooding or surface water management issues related to either the area of regional planning guidelines, development plans and LAP's or a proposed development site that may warrant further investigation at the appropriate lower level plan or planning application levels;
- **Stage 2 Initial Flood Risk Assessment** – to confirm sources of flooding that may affect a plan area or proposed development site, to appraise the adequacy of existing information and to scope the extent of the risk of flooding which may involve preparing indicative flood zone maps. Where hydraulic models exist the potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures can be assessed. In addition, the requirements of the detailed assessment should be scoped; and
- **Stage 3 Detailed Flood Risk Assessment** – to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a proposed or existing development or land to be zoned, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures.

### 3.2.2 Types of Flooding

There are two main sources of flooding: inland and coastal. Inland flooding is caused by prolonged and/or intense rainfall. This results in fluvial, pluvial or ground water flooding acting independently or in combination.

- Fluvial flooding occurs when a river overtops its banks due to a blockage in the channel or the channel capacity is exceeded.
- Pluvial flooding occurs when overland flow cannot infiltrate into the ground, when drainage systems exceed their capacity or are blocked and when the water cannot discharge due to a high-water level in the receiving watercourse.
- 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.

### 3.2.3 Flood Risk

The Guidelines state flood risk is a combination of the likelihood of flooding and the potential consequences arising. Flood risk is expressed as:

Flood risk = Likelihood of flooding x Consequences of flooding

The Guidelines define the likelihood of flooding as the percentage probability of a flood of a given magnitude as occurring or being exceeded in any given year. A 1% probability indicates the severity of a flood that is expected to be exceeded on average once in 100 years, i.e. it has a 1 in 100 (1%) chance of occurring in any one year. **Table 3-1** shows flood event probabilities used in flood risk management.

**Table 3-1: Flood Event Probabilities**

| Annual Exceedance Probability (%) | Return Period (Years) |
|---|---|
| 50 | 2 |
| 10 | 10 |
| 1 | 100 |
| 0.1 | 1000 |

The 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.).

## 3.3 Flood Zones

The Guidelines recommend identifying flood zones which show the extent of flooding for a range of flood event probabilities. The Guidelines identify three levels of flood zones:

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

The flood zones are generated without the inclusion of climate change factors. The flood zones only account for inland and coastal flooding. They should not be used to suggest that any areas are free from flood risk as they do not account for potential flooding from pluvial and groundwater flooding. Similarly flood defences should be ignored in determining flood zones as defended areas still carry a residual risk of flooding from overtopping, failure of the defences and deterioration due to lack of maintenance. **Appendix B** shows the Flood Zone Maps for the various urban centres examined in the Kildare CDP.

## 3.4 Climate Change

Climate Change is expected to increase flood risk. It could lead to more frequent flooding and increase the depth and extent of flooding. Due to the uncertainty surrounding the potential effects of climate change a precautionary approach is recommended in The Guidelines:

- Recognise that significant changes in the flood extent may result from an increase in rainfall or tide events and accordingly adopt a cautious approach to zoning land in these potential transitional areas;
- Ensure that the levels of structures designed to protect against flooding, such as flood defences, land-raising or raised floor levels are sufficient to cope with the effects of climate change over the lifetime of the development they are designed to protect; and
- Ensure that structures to protect against flooding and the development protected are capable of adaptation to the effects of climate change when there is more certainty about the effects and still time for such adaptation to be effective.

## 3.5 Strategic Flood Risk Assessment

The purpose of this report is to carry out a SFRA at county scale for the Kildare CDP. The Guidelines recommend a series of outputs for a SFRA. These outputs in broad terms include:

- Identify principal rivers, sources of flooding and produce flood zone maps for across the local authority area and in key development areas;
- An appraisal of the availability and adequacy of the existing information;
- Assess potential impacts of climate change to demonstrate the sensitivity of an area to increased flows or sea levels. Where mathematical models are not available climate change flood extents can be assessed by using the Flood Zone B outline as a surrogate for Flood Zone A with allowance for the possible impacts of climate change;
- Identify the location of any flood risk management infrastructure and the areas protected by it and the coverage of flood-warning systems;
- Consider, where additional development in Flood Zone A and B is planned within or adjacent to an existing community at risk, the implications of flood risk on critical infrastructure and services across a wider community-based area and how the emergency planning needs of existing and new development will be managed;
- Identify areas of natural floodplain, which could merit protection to maintain their flood risk management function as well as for reasons of amenity and biodiversity;
- Assess the current condition of flood-defence infrastructure and of likely future policy with regard to its maintenance and upgrade;
- Assess the probability and consequences of overtopping or failure of flood risk management infrastructure, including an appropriate allowance for climate change;
- Assess, in broad terms, the potential impact of additional development on flood risk elsewhere and how any loss of floodplain could be compensated for;
- Assess the risks to the proposed development and its occupants using a range of extreme flood or tidal events;
- Identify areas where a SSFRA will be required for new development or redevelopment;
- Identify drainage catchments where surface water or pluvial flooding could be exacerbated by new development and develop strategies for its management in areas of significant change;
- Identify where integrated and area-based provision of SuDS and green infrastructure are appropriate in order to avoid reliance on individual site by site solutions; and
- Provide guidance on appropriate development management criteria for zones and sites.

## 3.6 Sequential Approach and Justification Test

The Guidelines recommend using a sequential approach to planning to ensure the core objectives (as described in **Section 3.1**) are implemented. Development should be avoided in areas at risk of flooding. Where this is not possible, a land use that is less vulnerable to flooding should be considered. **Figure 3-2** shows the sequential approach. If the proposed land use cannot be avoided or substituted, a Justification Test must be applied and appropriate sustainable flood risk management proposals should be incorporated into the development proposal. **Table 3-2** and **Table 3-3** outline recommendations from the Guidelines for the types of development that would be appropriate to each flood zone and those that would be required to meet the Justification Test.

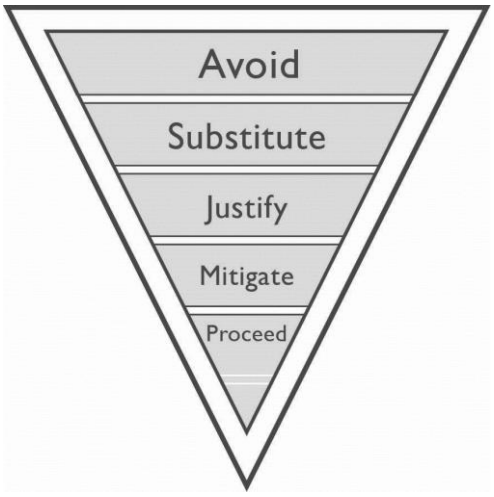


**Figure 3-2: Sequential approach principles in Flood Risk Management**

**Table 3-2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test**

| | Flood Zone A | Flood Zone B | Flood Zone C |
|---|---|---|---|
| Highly vulnerable development | Justification Test | Justification Test | Appropriate |
| Less vulnerable development | Justification Test | Appropriate | Appropriate |
| Water compatible development | Appropriate | Appropriate | Appropriate |

The Justification Test is used to assess the appropriateness of developments in flood risk areas. The test is comprised of two processes. The first is the Plan-making Justification Test and is 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. The second is the Development Management Justification Test and is 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.

**Table 3-3: Classification of vulnerability of different types of development**

| Vulnerability Class | Land uses and types of development which include*: |
|---|---|
| Highly vulnerable development (including essential infrastructure) | • Garda, ambulance and fire stations and command centres required to be operational during flooding,<br>• Hospitals,<br>• Emergency access and egress points,<br>• Schools,<br>• Dwelling houses, student halls of residence and hostels,<br>• Residential institutions such as residential care homes, children's homes and social services homes,<br>• Caravans and mobile home parks,<br>• Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility, and<br>• Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding. |
| Less vulnerable development | • Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions,<br>• Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans,<br>• Land and buildings used for agriculture and forestry<br>• Waste treatment (except landfill and hazardous waste),<br>• Mineral working and processing, and<br>• Local transport infrastructure. |
| Water-compatible development | • Flood control infrastructure,<br>• Docks, marinas and wharves,<br>• Navigation facilities,<br>• Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location,<br>• Water-based recreation and tourism (excluding sleeping accommodation),<br>• Lifeguard and coastguard stations,<br>• Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms, and<br>• Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan). |

*Uses not listed here should be considered on their own merit

## 3.7 Development Plan Justification Test

The Development Plan Justification Test (or Plan–making Justification Test) should be carried out as part of the SFRA using mapped flood zones. Justification Test are required for land uses that are vulnerable to flooding and would generally be inappropriate for areas in proximity to a flood risk zone. The land use must therefore be justified if avoidance or substitution of the land use is not appropriate or possible. Where land use zoning objectives are being retained, they must satisfy the criteria of the Development Plan Justification Test. The Development Plan Justification Test from the Guidelines is set out in **Table 3-4** (Box 4-1 in the Guidelines), Item 1 has been updated by KCC to reflect the most recent national planning policies and regulations.

**Table 3-4: Justification Test for Development Plans**

| 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. |
| 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:<br>i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,<br>ii. Comprises significant previously developed and/or under-utilised lands,<br>iii. Is within or adjoining the core[3] of an established or designated urban settlement,<br>iv. Will be essential in achieving compact and sustainable urban growth, and<br>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.<br><br>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 |

In cases where existing zoned lands are discovered to be within flood zones, the Development Plan Justification Test has been applied, and it is demonstrated that it cannot meet the specified requirements it is recommend that planning authorities reconsider the zoning by implementing one of the following:

- Remove the existing zoning for all types of development on the basis of the unacceptable high level of flood risk;
- Reduce the zoned area and change or add zoning categories to reflect the flood risk; or
- Replace the existing zoning with a zoning or a specific objective for less vulnerable uses.

If the criteria of the Justification Test have been met, the design of structural or non-structural flood risk management measures can be applied as prerequisites to development in specific areas. These measures must ensure that flood hazard and risk to other locations will not be increased or, if practicable, be reduced. The mitigation measures are required prior to development taking place.

# 4 DEVELOPMENT MANAGEMENT AND FLOOD RISK

## 4.1 Overview

An appropriately detailed FRA should support all development proposals taking place in areas that KCC have applied a Justification Test, where a residual flood risk remains. The level of detail within the FRA will depend on the risks identified and the proposed land use. Applications should apply the use of the sequential approach in terms of the site layout and design and, in satisfying the Justification Test (where required), the proposal will demonstrate that appropriate mitigation and management measures are put in place. The development should ensure that no encroachment onto, or loss of, the flood plain. Only water compatible development such as Open Space would be permitted for the lands which are identified as being at risk of flooding within that site. For any development in flood risk areas that meet the Development Plan Justification Test, a Development Management Justification Test must then be applied. Development must satisfy all the criteria of the Development Management Justification Test. The Development Management Justification Test from the Guidelines is shown in **Table 4-1** (Box 5.1 in the Guidelines) below. This chapter provides a broad overview of the requirements of Flood Risk Assessments which should accompany planning applications.

**Table 4-1: Justification Test for Development Management**

| Justification Test for Development Management |
|---|
| 1. The subject lands have been zoned or otherwise designated for the particular use or form of development in an operative development plan, which has been adopted or varied taking account of these Guidelines. |
| 2. The proposal has been subject to an appropriate flood risk assessment that demonstrates:<br>i. The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;<br>ii. The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible;<br>iii. The development proposed includes measures to ensure that residual risks to the area and/or development can be managed to an acceptable level as regards the adequacy of existing flood protection measures or the design, implementation and funding of any future flood risk management measures and provisions for emergency services access, and<br>iv. The development proposed addresses the above in a manner that is also compatible with the achievement of wider planning objectives in relation to development of good urban design and vibrant and active streetscapes.<br>The acceptability or otherwise of levels of residual risk should be made with consideration of the type and foreseen use of the development and the local development context. |

## 4.2 Development Proposals in Flood Zones

### 4.2.1 Requirements for a Flood Risk Assessment

The Guidelines recommend that any planning applications in flood risk areas are accompanied by a supporting appropriately detailed SSFRA in accordance with the policies outlined in Chapter 6 Infrastructure & Environmental Services of the CDP (listed in **Table 8-1**) as well as the requirements of The Planning System and Flood Risk Management – Guidelines for Planning Authorities, DEHLG (2009). This is to ensure a conservative approach and that consideration is given to new development within Flood Zones where mitigation measures may still be required to ensure an appropriate level of flood protection and/or resilience. The SSFRA should include at a minimum Stage 1 - Identification of Flood Risk. Where flood risk is identified a Stage 2 - Initial FRA will be required and depending on the scale and nature of the risk a Stage 3 - Detailed FRA may be required.

SSFRAs should present the potential flood risk to a proposed development, the potential increase in flood risk elsewhere (refer to **section 4.2.6**), any proposed mitigation measures and proposals for sustainable surface water management (refer to **section 4.3)**. The FRA should also consider the impacts of climate change, residual risk associated with culvert blockages and freeboard in setting the finished floor levels (FFLs) of new

development. The FRA must demonstrate that there are no adverse impacts to the development itself or the surrounding area.

### 4.2.2 Assessment of Proposals for Minor Development

The Justification Test does not apply to applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use. However, a flood risk assessment of appropriate detail should accompany such applications to demonstrate that they would not have adverse flood risk impacts. These proposals should follow best practice in the management of health and safety for users and residents of the proposal. FRAs should consider placing bedrooms upstairs, sockets above the 1% AEP water level and other individual property protection measures e.g., flood doors, non-return valves. They must also ensure that modifications do not block significant flow paths or cause flood risk impacts to the surrounding areas.

### 4.2.3 Assessment of Proposals for Highly Vulnerable Development

It is not appropriate for new, highly vulnerable, development to be located in Flood Zones A or B and a less vulnerable or water compatible land use should be considered.

Highly vulnerable development proposals should not be considered in flood risk areas unless they are located in the core of a settlement, meet the criteria of the Justification Tests and are supplemented by an appropriately detailed FRA. The following considerations should be addressed in applications for highly vulnerable development in flood risk areas:

- The minimum finished floor level for highly vulnerable development should be above the Flood Zone B (0.1% AEP) level plus suitable freeboard. The recommended level of freeboard is 500 mm for fluvial flood levels,

- Applications should outline the emergency procedures that will be applied in the event of a flood. Evacuation routes should be identified but if this is not possible then containment may be considered if it is considered safe and practical to do so. If either safe evacuation or containment is not possible, then the development proposal should be refused,

- The site layout should follow the sequential approach to allocate land within a development based on the vulnerability class of the development i.e., more vulnerable development should be placed on higher ground while water compatible development e.g., car parking, greenfield space can be placed in the flood zones, and

Compensatory storage for development that results in a loss of floodplain within Flood Zone A must be provided on a level for level basis, the lands should be in close proximity to the area that storage is being lost from, the land must be within the ownership of the developer and the land given to storage must be land which does not flood in the 1% AEP event. Also, the compensatory storage area should be constructed before land is raised to facilitate development.

### 4.2.4 Assessment of Proposals for Less Vulnerable Development

Less vulnerable development proposals should not be considered in Flood Zone A area unless supplemented by an appropriately detailed FRA and meets the criteria of the Development Management Justification Test. The minimum finished floor level for less vulnerable development should be above the Flood Zone A (1% AEP) level plus suitable freeboard. The recommended level of freeboard is 500 mm for fluvial flood levels.

### 4.2.5 Extension of Duration in Flood Risk Areas

In areas where recent and more up to date flood risk information subsequently finds that a site has a flood risk, applications for extension of duration or new applications within the zoning will require appropriately detailed FRA at development management stage. If the permitted development is found not to confirm to The Guidelines then the application should be refused on flood risk grounds and a new application submitted, allowing for appropriate design and FRA.

### 4.2.6 Residual Risk

All development (including that in Flood Zone C), should consider residual risk factors such as culvert/bridge blockages and the effects of climate change which may expand the extents of Flood Zones A and B. These residual risk factors should influence the potential mitigation measures for a site which could include setting the finished floor levels.

Poulaphouca dam in the upper catchment is served by a catchment area of 308km$^2$ consisting mainly of a blanket bog overlying granite and having an average annual rainfall of 1,390mm is situated upstream of Kilcullen town in Kildare. Poulaphouca Reservoir (Blessington Lake), situated approximately 185m above sea level, has a surface area of 20km$^2$ and an estimated (geometric) capacity of 190 x 10$^6$ m$^3$ at maximum normal operating level (186.6m O.D.). The long-term average inflow to the reservoir is approximately 9m$^3$/s. The large storage available, at approximately 50% of the average annual inflow, is such that it has not been necessary, to date, to use the spillway gates[1].

Golden Falls dam is situated about 2km downstream of Poulaphouca and acts as a regulating reservoir for discharges from Poulaphouca. The intermediate catchment to Golden Falls dam is small, 5km$^2$, and the inflow to the Golden Falls Reservoir is virtually the same as the discharge from Poulaphouca dam and power station[2].

Historical flood events in June 1993, November 2000, and November 2009 demonstrate that the Poulaphouca reservoir, serves as a flood relief reservoir. It retains inflows from the Upper Catchment until the floodwaters in the Middle Catchment subside[3]. Nonetheless, inundation studies conducted by ESB using the computer model 'DAMBRK' for natural 10,000-year flood scenario, breach in the Golden Falls dam (with a constant inflow of 30 m$^3$/s) and breach in the Poulaphouca dam (with a constant flow of 30 m$^3$/s), reveals potential flooding along the banks of the River Liffey. The flood affected areas include open spaces, amenities, agricultural land, New residential area and town center[4] (see **Figure 7-2**,**Figure 7-3**, and **Figure 7-4**) .

[1] River Liffey Inundation Study (Pollaphuca to Leixlip), ESB 1994.

[2] River Liffey Inundation Study (Pollaphuca to Leixlip), ESB 1994.

[3] PFRA-ESB Dams and Embankments

[4] River Liffey Inundation Study (Pollaphuca to Leixlip), ESB 1994.

### 4.2.7 Potential Flood Mitigation Measures

To address flood risk for a new development or regeneration of an existing development, a sequential approach should be taken to minimise potential impact of flooding to more vulnerable land use. However, if necessary due to site constraints, potential flood mitigation measures could be incorporated into a site layout. Examples of potential measures are listed below:

- Compensatory storage,
- Raised defences, and
- Ground floor & basement protection.

#### Compensatory Storage

Compensatory Storage can be implemented by modifying existing ground levels within the site in order to relocate the flood extents to accommodate a proposed development. However, if not managed appropriately, this measure could have an adverse effect on flood risk for the surrounding areas. There are a number of steps to be taken before this measure can be considered as a viable option:

- An FRA to establish the extents of the existing flood risk, and also a hydraulic model to demonstrate the potential impacts of compensatory storage on site and also for the surrounding areas,
- Compensatory Storage to be implemented on a level for level basis to manage the flood volume reduced by infilling where the floodplain provides storage,
- Compensatory Storage is required to be provided at close proximity to the existing floodplain,
- The lands proposed for compensatory storage are required to be in control of the owner of the proposed development,
- The lands proposed for compensatory storage are required to be outside the existing Flood Zones A and B,
- Compensatory storage area should be constructed prior to the land being raised for the proposed development, and
- Any potential loss of storage for the 0.1% AEP year return period within urban areas as a result of compensatory storage should be compensated through additional storage.

#### Raised Defences

Raised defences such as flood walls or embankments are a traditional response to managing flood risk. However, if this measure were to be considered, a SSFRA should be required to establish the extent of the existing flood risk and the potential implications of raised defences on flood risk for a proposed development site and the surrounding areas.

#### Ground Floor and Basement Protection

The following flood protection measures are recommended for basements and ground level access:

- Raised doorway and access threshold levels can be incorporated into areas susceptible to floodwaters pooling. Temporary door-guards can be implemented where it is not practical to have a permanent raised threshold. However, these will require advance warning for installation,
- Shallow ramping can be considered for doorway or vehicular access at ground level if it can be facilitated,
- Particular care should be taken at closed spaces where it proposed to restrict the movement of floodwaters as the rapid inundation could pose a threat to life as well as causing major disruption or damage, and

- Alarm systems are strongly recommended for properties with basements or semi-basements. Training of residents and building personnel in alarms and escape routes and escorting all visitors out of basement areas should be a requirement.

Appendix B of the FRM Guidelines Technical Appendices, provides further technical information on considerations for mitigation measures to design against flood risk. Such considerations include assessment of residual risk, exceedance, access and egress, flood resistant construction, flood resilient construction, raising floor levels, adapted internal layout, and emergency response planning.

### 4.2.8 Development in Flood Zone C

Development in Flood Zone C should undertake at a minimum a Stage 1 FRA to screen for possible indirect sources of flood risk and where they cannot be screened the FRA should be expanded to a Stage 2 and/or Stage 3 FRA as required. The screening should assess possible flooding impacts due to residual risk (see **section 4.2.6**) and climate change (see **section 4.4**). The FRA should identify mitigation measures including (but not limited to) setting finished floor levels above the 1% AEP fluvial event with an allowance for climate change and freeboard. Mitigation measure such as trash screens, periodically channel maintenance or flood relief pipes may be required. Details should also be provided for emergency egress and ingress routes.

## 4.3 Surface Water and Drainage

### 4.3.1 Overview

All development proposals must consider the impact of surface water flood risks on drainage design. All planning applications must undertake a Surface Water Management Plan in accordance with the policies outlined in Chapter 6 Infrastructure & Environmental Services of the CDP (listed in **Table 8-1**) and the requirements from Chapter 15 Development Management Standards of the CDP 2023-2029 for the management of surface water run-off and flood risk (Chapter 15 of the CDP 2023-2029 (as varied) should be read to obtain the full list of requirements and applicable standards for planning applications). Planning applications should also consult the Department of Housing, Local Government and Heritage document "Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas – Water Sensitive Urban Design – Best Practice Interim Guidance Document". All planning applications for developments shall include proposals for the following:

- Detailed proposals for the management of surface water, where Nature Based Surface Water Management solutions are considered and prioritised in the first instance. Groundwater monitoring, if required, should last at least 6 months and include at least one winter season.
- A Surface Water Management Plan shall be submitted which includes details inter alia the location, design and any future maintenance proposals / procedures required to maintain the surface water management system.
- Proposals for surface water management shall be in compliance with the KCC Guidance documents on Sustainable Drainage Systems (KCC, 2024), Greater Dublin Drainage Strategy (GDSDS), in particular Volume 2 Chapter 6 Stormwater Drainage Design Criteria, and CIRIA SuDS Manual (C753) and with Nature-Based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas Best Practice Interim Guidance Document (2021, DHLGH).
- In the event that a Nature Based Surface Water Management solution is not feasible, detailed information must be submitted to explain why it was not considered to be a practical solution. Traditional drainage systems will only be permitted where a demonstrable exceptional circumstance has been provided.
- Sustainable Drainage Systems should not form part of the public open space provision, except where they contribute in a significant and positive way to the design and quality of open space. In instances where the Council determines that SuDS make a significant and positive contribution to open space, a maximum 10% of the open space provision shall be taken up by SuDS.
- In the event that underground attenuation storage structures are required, they will not be accepted under areas of public open space, save in exceptional demonstrable situations.

- All existing site watercourses shall be retained and existing site pipework should be “de-culverted” where feasible.
- Insufficient details submitted at planning application stage may incur requests for additional information or a refusal of planning permission.

All planning applications for developments shall also address the following requirements from Chapter 15 of the CDP 2023-2029 (as varied):

- Soft Landscaping - Landscaping works should incorporate sustainable urban drainage systems such as biodiversity areas or wetlands, which can reduce surface water run-off. Green roofs, walls, and permeable surfaces will be encouraged.
- Hard Landscaping - Applications for substantial hard-surfaced areas (e.g., streets, squares, open spaces, paved areas, footpaths, and driveways) must use appropriate materials that are durable and of good quality while demonstrating methods of controlling and limiting surface water run-off consistent with sustainable development.
- Hard Landscaping - Use of permeable paving/surfaces, bio-retention areas, tree pits, rain gardens, swales, and other nature-based drainage system methods, such that rainfall is not directed immediately to surface water drains. Such methods can serve to reduce the risk of flooding.
- Public Open Space for Residential Development - SuDS are not generally acceptable as a form of public open space provision, except where they contribute in a significant and positive way to the design and quality of open space. Where the Council considers that this is the case, in general a maximum of 10% of the open space provision shall be taken up by SuDS.
- Public Open Space for Residential Development - Underground tanks and storage systems will not be accepted under public open space, as part of a SuDS solution.
- Industry and Warehousing Development - Proposals shall be submitted to incorporate Sustainable urban Drainage Systems (SuDS) and other nature-based surface water drainage solutions as part of all plans and development proposals. Priority shall be given to SuDS that incorporate green infrastructure and promote biodiversity including green roofs, walls and rain gardens, with underground retention solutions only being considered when all other options have been exhausted.
- Business and Technology Parks - Incorporates Sustainable urban Drainage Systems (SuDS) such as ponds, bio-retention areas, detention basins, infiltration basins, filter strips, wetlands, swales and rain gardens.
- Business and Technology Parks - A Green Roof covering a minimum of 60% of the roof shall be provided for roof areas greater than 300 m² unless a suite of complementary or alternative ‘soft’ SuDS measures as detailed above are proposed. A proposal that relies solely on attenuation storage systems and/ or permeable paving as an alternative to the provision of a Green Roof will not be acceptable.
- Agricultural Developments - Agricultural developments shall also demonstrate that the proposal does not impact significantly upon Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs), Areas of High Amenity, Landscape Sensitivity Areas, Key Scenic Views and Prospects and Key Amenity Routes, sites of heritage or cultural value, or areas at risk of flooding.
- Agricultural Developments - Proposals for preventing surface water run-off onto the public road shall be included with planning applications.
- Waste Recovery / Disposal Facilities - Avoid siting waste facilities in sensitive areas such as Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs), proposed NHAs, areas protected for landscape character, visual amenity, geology, heritage or cultural value, or areas at risk of flooding. Development proposals for such infrastructure in these areas, will not be permitted.
- Waste Recovery / Disposal Facilities - Ensure a Sustainable urban Drainage System (SuDS) is applied to any proposed developments, and that site-specific solutions to surface water drainage systems are developed, which meet the requirements of the EU Water Framework Directive and associated River Basin Management Plans.
- Riparian Corridors - The riparian corridors of the county include rivers, streams and other watercourses and are important green infrastructure and biodiversity links.

- Riparian Corridors - A multi-disciplinary team including an ecologist and flood risk expert shall review all riverine sites to determine the appropriate zonation and permissible uses.

### 4.3.2 SuDS Guidance

As detailed in **Section 4.3.1** and in particular in the Kildare County Council Guidance documents on the Sustainable Drainage Systems (KCC, 2024), all applications for developments should incorporate Nature Based Surface Water Management and SuDS measures. The following components should be considered for installation:

- Source Control Elements - Green Roofs/Living walls, Rainwater Harvesting and Permeable Surfacing, SuDs treepits,
- Swales & conveyance channels,
- Filtration Systems – Filter trenches and bioretention areas
- Infiltration Systems - Soakaways, Rain Gardens and infiltration basins
- Constructed wetlands
- Detention Basins and Retention Ponds
- Wetlands

In addition the policies and requirements listed in **Section 4.3.1** for SuDS and Nature Based Surface Water Management also applies:

i. The KCC Roads, Development Control and Parks departments shall be consulted regarding proposed SuDS features, their location, size, number and future maintenance.

ii. The amount of impermeable surface areas connected to the drainage systems should be reduced. The remaining impermeable surface areas should be connected to SuDS features and not directly to the drainage pipe network.

iii. In management company controlled areas, permeable paving/pervious surfacing shall be maximised on roads, footpaths and other paved areas. Green-blue roofs and rainwater harvesting shall be provided in management company controlled buildings and rainwater butts provided at houses.

iv. Nature based solution and natural water retention measure e.g., constructed wetlands, retention ponds, bioretention areas should replace the traditional underground attenuation storage structures and bioswales, tree pits-trenches and rain gardens shall also be prioritised in the first instance.

v. Infiltration systems which discharge runoff directly to groundwater shall be next prioritised where NBS and NWRM SuDS have not been selected or are not deemed to be feasible.

vi. Infiltration systems e.g., soakaways and infiltration trenches require the BRE Digest 365 soil infiltration tests to be undertaken confirming suitable soil infiltration rates. Groundwater monitoring results confirming favourable groundwater levels at the SuDS locations are also required.

vii. Discharge of runoff from Infiltration system SuDS should be kept a safe distance away from buildings, structures and roads/footpaths to avoid damage to their sub-structures or their foundation layers can be lined/tanked.

viii. Filtration systems such as filter drains/strips shall be next prioritised after NBS-NWRM and infiltration systems. Narrow, linear filter drains/strips are convenient for road surface runoff.

ix. All existing site watercourses and open drainage channel/ditches shall be retained where feasible subject to a risk assessment especially of the risk of young children drowning in only shallow depths of water. This shall also apply to SuDS which store runoff at ground surface level and access to the adjoining site watercourses.

## 4.4 Climate Change

Climate change should be considered when assessing flood risk and in particular residual flood risk. The Planning Guidelines recommend that a precautionary approach to climate change is adopted due to the level of uncertainty involved in the potential effects.

OPW climate change guidance is documented in the 'Flood Risk Management Climate Change Sectoral Adaptation Plan' (2019) and recommends two climate change scenarios for consideration, The Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS). The parameters are listed in **Table 4-2**.

- The MRFS is intended to represent a 'likely' future scenario, based on the wide range of predictions available and with the allowances for increased flow, sea level rise, etc. within the bounds of widely accepted projections;
- The HEFS is intended to represent a more extreme potential future scenario, but one that is nonetheless not significantly outside the range of accepted predictions available, and with the allowances for increased flow, sea level rise, etc. at the upper the bounds of widely accepted projections.

**Table 4-2 Future Condition adjustments**

| Scenario | MRFSHEFS |
|---|---|
| Extreme Rainfall Depths | +20% +30% |
| Flood Flows | +20% +30% |

Reference can also be made to the climate change flooding extents available on www.floodinfo.ie.

# 5 STAGE 1 – FLOOD RISK IDENTIFICATION

## 5.1 Overview

The purpose of this section is to establish the level of flood risk for the County and to collate and assess existing current and historical information and data which may indicate the level and/or extent of any flood risk. The following sections detail information and data collated as part of the Stage 1 Flood Risk Identification. There are several sources of relevant flood risk information available for County Kildare. This information was used to assess flood risk for the areas outlined in **Table 2-1** below shows an overview of the CFRAM flood zones, National Indicative Fluvial Maps, indicative flood zones generated for the SFRA and historical flooding areas.

## 5.2 Source-Pathway-Receptor Model

In the first instance, an identification and assessment of the probability, magnitude, response of pathways and consequences of a flood event in the proposed development site were appraised. This analysis was aimed at identifying high risk elements as summarised in below.

**Table 5-1: Justification Test for Development Management**

| Source | Pathway | Receptor | Likelihood (remote, possible, likely) | Consequences (low, medium, high) | Risk (low, medium, high) | Comment/ Reason |
|---|---|---|---|---|---|---|
| Tidal /Coastal | Increased river levels overtopping existing riverbanks | Urban Centres | Remote | Low | Low | The study area is located inland and the rivers are not tidally influenced within the extents of the county. |
| Fluvial | Increased river levels overtopping riverbanks | Urban Centres | Likely | High | High | There are several rivers located in the study area that are known to periodically flood. Urban areas will be examined on a case by case basis. |
| Pluvial | Overland Flow from Elevated Lands or Water logging | Urban Centres | Possible | High | Medium | Localised pluvial flooding could occur in some areas which will be examined on a case by case basis. |
| Groundwater | Rising Ground Water Level | Urban Centres | Possible | High | Low | There are some limited records of ground water flooding on the Geological Survey Ireland spatial viewer website. Urban areas will be examined on a case by case basis for groundwater flooding potenital. |

The primary source of flood risk to the county may be attributed to fluvial flooding from the local watercourses and their tributaries. Secondary risks may arise from pluvial flooding and groundwater flooding.

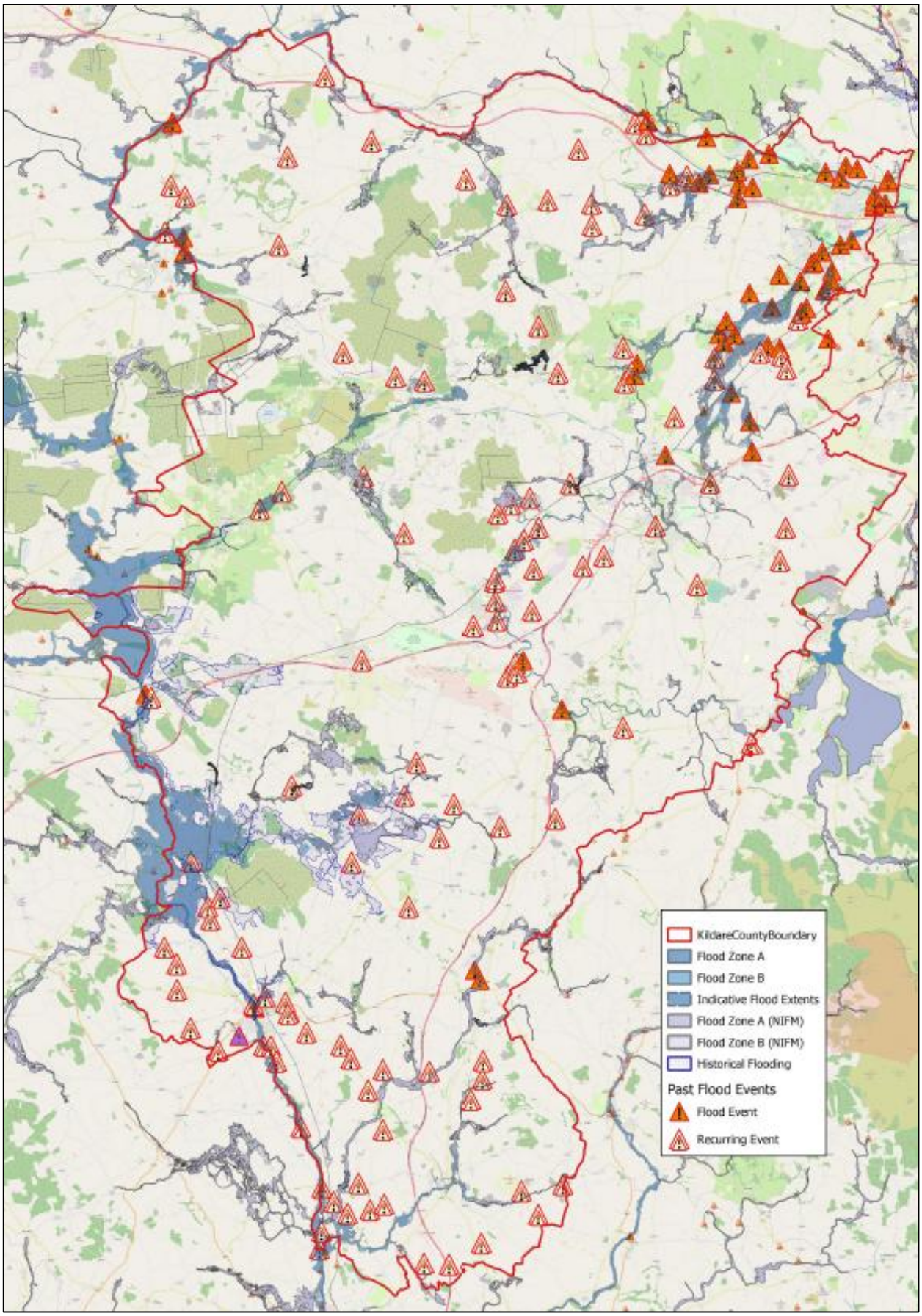


**Figure 5-1: Flood Risk Overview for Kildare**

## 5.3 Flood Risk & Flood Studies Information

Relevant information was reviewed and collated from the following sources:

- Localised specific flood risk information and knowledge from Kildare County Development Plan 2017 – 2023 and Strategic Flood Risk Assessment and the KCC Municipal District Engineering Staff;
- Records of historical flooding available at www.floodinfo.ie;
- Flood Mapping, Hydrology & Hydraulic Reports from the CFRAMS at www.floodinfo.ie, refer to **Section 5.6** below for further detail on the CFRAMS;
- Proposals for regional and local flood mitigations measures from the Flood Risk Management Plans (FRMPs) available at www.floodinfo.ie, refer to **Section 5.6** below for further detail on the relevant FRMPs;
- Groundwater Flooding Data from the Geological Survey of Ireland (GSI);
- Relevant spatial information from the from Environmental Protection Agency (EPA) available at EPA Unified GIS Application; and
- Historical flood risk information from the from Ordnance Survey Ireland available at National Townland and Historical Map Viewer.
- Historical planning application information and associated documentation available for review at the KCC Online Planning Enquiry System.

## 5.4 Historical Flooding

A review of historical flood data was carried out using the sources of information outlined in **Section 5.3**. The main sources of flooding in the County are fluvial and pluvial flooding. Historically the main areas of concern in Kildare have been Leixlip, Celbridge, Johnstown, Ardclough, Athy and Castledermot. **Figure 5-1** shows a flood risk overview of County Kildare.

## 5.5 Arterial Drainage Schemes & Drainage Districts

Arterial Drainage Schemes are schemes the OPW has a statutory duty to maintain. Arterial Drainage Schemes were carried out under the Arterial Drainage Act, 1945 to improve land for agriculture and to reduce the risk of flooding. The channel geometry of rivers and lakes were modified, embankments were constructed along with the repair or modifications of weirs / bridges to improve conveyance. Flood protection in the benefiting lands was increased as a result of the Arterial Drainage Schemes. Within County Kildare Arterial Drainage Schemes include the following:

- Boyne Arterial Drainage Scheme;
- Hazelhatch (Shinkeen) Arterial Drainage Scheme; and
- Ryewater Arterial Drainage Scheme.

Drainage Districts were carried out by the Commissioners of Public Works (now known as the OPW) under a number of drainage and navigation acts from 1842 to the 1930s to improve land for agriculture and to reduce the risk of flooding. Similarly, to the Arterial Drainage Schemes river channels and lakes were modified (primarily deepened and widened), embankments were constructed along with the repair or modifications of weirs / bridges to improve conveyance. Local authorities are charged with responsibility to maintain Drainage Districts. Within County Kildare Drainage Districts include the following:

- Baltracey Drainage District;
- Barrow Drainage District;
- Burren Drainage District;
- Connell Drainage District;
- Garr Drainage District;
- Greese Drainage District;

- Foranwell Drainage District;
- Lerr Drainage District; and
- Rathangan Drainage District.

Figure 5-2 shows the Arterial Drainage Schemes & Drainage Districts in County Kildare.

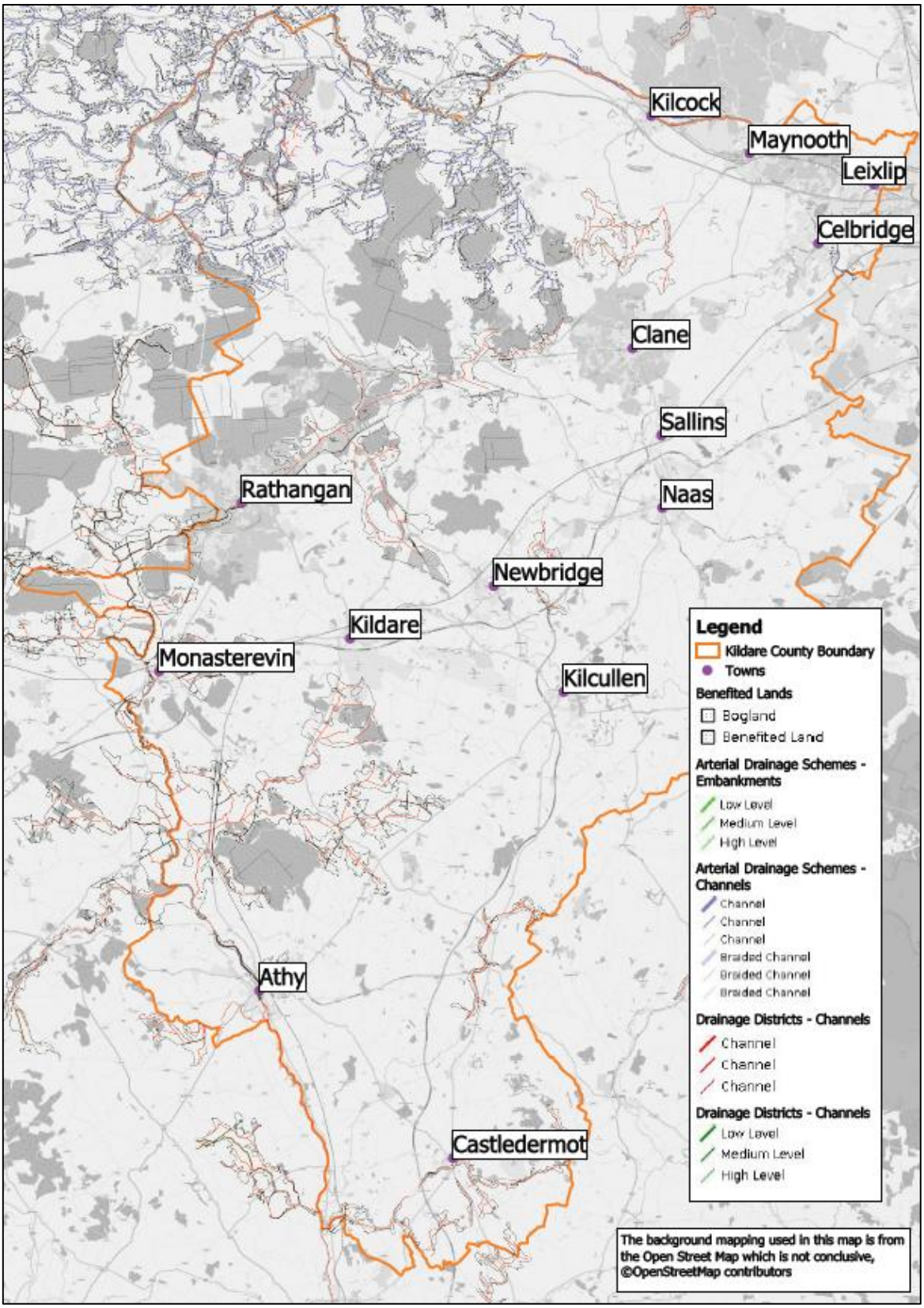


**Figure 5-2: Arterial Drainage Schemes & Drainage Districts in County Kildare**

## 5.6 CFRAMS & FRMPs

### 5.6.1 Background

The OPW lead the development of the CFRAMS. The aim of these studies was to assess flood risk, through the identification of flood hazard areas and the associated impacts of flooding. The flood hazard areas were identified as being potentially at risk from significant flooding, including areas that have experienced significant flooding in the past. They have considered issues such as climate change, land use practices and future development. These studies have been developed to meet the requirements of the EU Directive on the assessment and management of flood risks (the Floods Directive). The Floods Directive was transposed into Irish law by SI 122 of 2010 "European Communities (Assessment and Management of Flood Risks) Regulations 2010".

The CFRAM Studies have developed FRMPs to manage flood risk within the main River Basins in the country. The FRMPs also outline a series of proposed flood risk policy measures for the River Basin Unit of Management (UOM) Areas County Kildare falls geographically into three River Basins including for the Liffey & Dublin Bay River Basin (UOM09), Boyne River Basin (UOM07) and the Barrow River Basin (UOM14). The lists of measures applicable to County Kildare are from each of three FRMPs are listed at www.floodinfo.ie.

The FRMPs also identified proposed flood relief schemes for locations with County Kildare, see **Section 5.7** for further details. The three FRMPs were adopted by KCC in July 2018 and they have committed to implementing the recommendations from the FRMPs and will work in conjunction with the OPW to deliver the proposed flood relief schemes. The aim of the schemes is to provide protection to existing residential and commercial properties at risk from fluvial flooding to 1% AEP event standard of protection (roughly equivalent to a 1 in 100-year storm).

### 5.6.2 CFRAM Fluvial Flood Zone Mapping

Flood Zone maps are one of the main outputs of the CFRAM studies and have been specifically generated in accordance with the definition of Flood Zones as detailed in **Section 3.3**. The CFRAM studies generated Flood Zone Mapping for many of the urban areas within County Kildare and these have been adopted as the primary data source for flood zones in the county. The flood zone mapping has been used to enable KCC to apply 'The Guidelines' sequential approach, and where necessary the Justification Test, to appraise sites for suitable land zonings and identify how flood risk can be managed as part of the development plan.

The CFRAM flood zone mapping is not available for all urban areas within the County. Flood risk locations which are outside of the scope of the CFRAM mapping have been identified using indicative flood mapping as discussed further in **Section 5.8** and **Section 5.9**. This mapping is considered appropriate as Stage 2 FRA flood mapping to allow KCC to follow the sequential approach.

It is noted that the identification and mapping of flood risk as shown in CFRAM Fluvial Flood Zone Mapping is subject to change, dependent on review by the OPW of the CFRAM Mapping and associated data. This SFRA has been developed using the best available information at the time of publication. However, all planning applications made during the lifetime of the plan should take due consideration of the latest available flood information, which may include flood mapping published following publication of this SFRA.

## 5.7 Flood Defence Works

To counteract and manage flood risk and in the County, river/stream improvement works have been carried out in the last 20 years. These are outlined in **Table 5-2** below.

**Table 5-2: Flood Relief Works carried out in Kildare in the recent past**

| Location | Description of Works |
|---|---|
| Allen | KCC completed surface water drainage works in front of the national school to alleviate road flooding. |
| Ardclough | Construction of new culvert across the Grand Canal and upgrade of outfall to the River Liffey in the townland of Reeves, including upgrade of channels, cleaning of railway culvert and upgrade of field entrances. |

| Location | Description of Works |
|---|---|
| Athgarvan | Drainage network upgrades were undertaken as part of a road improvement scheme near the Liffey Bridge. |
| Ballymore Eustace | Upgrading of drainage system around the village. Works included installation of 1300mm concrete pipes across roadways and green areas, construction of headwalls, temporary river diversions, landscaping and all other associated works. |
| Brownstown | Road drainage works completed as part of footpath improvement works. |
| Caragh | Road drainage improvement works completed at Castlekeeley and Raheens. |
| Castledermot | Local improvements including installation of non-return valves on surface water drainage discharging to the River Lerr. |
| Celbridge | Diversion of river, upgrade of channels, construction of new channel & general maintenance of the Toni River. |
| Clane | Upgrade of culverts and construction of flood walls along the Butterstream. |
| Derrinturn | Culvert upgrade works to improve surface water drainage within the village. |
| Hazelhatch | Flood relief scheme for the Shinkeen Stream. |
| Johnstown | Johnstown flood alleviation scheme involved the construction of flood walls, flood embankments, the upgrade of bridges and the construction of a bypass channel. |
| Kilcock | Construct overflow pipeline and upgrade of existing surface water culverts in Newtown village in order to convey flood flows through the village centre. |
| Leixlip | Rye Water<br>Construction of flood walls, flood embankments, upgraded bridges, the upgrade of channels and of an existing outfall through Marshfield House, which is a protected structure in Leixlip just on the banks of the River Liffey.<br><br>Silleachain<br>Other works included in construction of a new box culvert on the Silleachain River. |
| Maynooth | Minor flood alleviation works on the Lyreen and Meadowbrook Rivers. |
| Newbridge | Upgrading of surface water network in Kilbelin and culvert upgrade. |
| Prosperous | Upgrade works completed to improve drainage infrastructure for local housing estates to discharge to the River Slate. |
| Sallins | Construction of new culverts and outfall structure at the Grand Canal, channel deepening/widening, raising of bank levels and scour protection works to prevent erosion. |
| Staplestown | Drainage works completed at the Mill Pond to alleviate road flooding due to overflows from the pond. |
| Straffan | Surface water drainage improvements completed along the museum road to alleviate pluvial flooding. |
| Suncroft | Surface water drainage improvements completed at Carna to alleviate road flooding. |
| Rathangan | Drainage works completed at Tullylost and Coolelan to alleviate road flooding. |
| Two Mile House | Road drainage works completed adjacent to the national school to prevent surface water runoff impacting local properties. |
| River Morrell | Upgrade of culverts, construction of embankments and maintenance of the river. |

The OPW FRMPs also identified flood mitigation measures for a number of areas in County Kildare**. Table 5-3** describes the proposed works (the works may be subject to change at detailed design and construction stages) and also provides a scheme status update as of January 2021. Any planning decisions should also be cognisant of these ongoing and future flood alleviation works in the County. The most up to date information on OPW funded schemes is available at https://www.floodinfo.ie/scheme-info/ .

**Table 5-3: Current and Future Flood Relief Works for Kildare**

| Works Status | Scheme | Proposed Works | Scheme Status |
|---|---|---|---|
| Ongoing Works | Athy Flood Relief Scheme | The proposed scheme may include building a series of hard defences, such as flood embankments and walls to protect at risk properties. These hard defences would be set back from the river channel where possible and are expected to provide protection to the 1% AEP fluvial flood event. | Progress a Flood Relief Scheme: The brief for engagement of consultancy services is underway. KCC has the appointment of a design team scheduled for Q1 2022. |
| | Leixlip Flood Relief Scheme | Progress the development of a further Flood Relief Scheme for Leixlip to augment the existing Scheme. The proposed measures that may be implemented after further project-level assessment might include a series of hard defences (flood embankments and walls). The hard defences would protect to the 1% AEP fluvial flood event. | Progress a Flood Relief Scheme: The brief for engagement of consultancy services is underway. |
| | Morell River Flood Management Scheme | The scheme is primarily located in the townlands of Killeenmore, Sherlockstown and Tuckmilltown areas; The Scheme comprises of:<br>• Construction or restoration of over 9,000 metres of embankments;<br>• Construction of up to 480 metres of flood walls to direct the flood water away from high risk areas;<br>• Stream realignment; and up to 11 culvert alterations/upgrades. | Stage IV: Implementation/Construction<br>Construction activity commenced in August 2020. The scheme is being constructed by the Office of Public Works, who are also the funding authority. Expected completion: 2024.<br>Further information available at https://www.morellfms.ie/. |
| | Naas Flood Relief Scheme | The proposed scheme may include a series of hard defences (flood embankments and walls), storage, formalisation of an existing flow path to create a flow diversion channel and improvement of channel conveyance. The scheme would be expected to provide protection to the 1% AEP fluvial flood event. The scheme may be implemented after detailed assessment including data collection and an assessment of potential non-fluvial sources. | Stage I: Scheme Development and Preliminary Design<br>KCC has appointed (August 2020) a consultant to undertake further data collection and hydrological / hydraulic analysis and following its conclusion to evaluate a potential Naas Flood Relief Scheme. The current programme, which is subject to change, is for an design option of a potential scheme to be completed by March 2023. Tendering for a construction contract is expected to commence in 2023.<br>Further information available at https://www.floodinfo.ie/frs/en/naas/home/. |

| Works Status | Scheme | Proposed Works | Scheme Status |
|---|---|---|---|
| Future Works | Clane Flood Relief Scheme | Progress the project-level development and assessment of a scheme for Clane, including environmental assessment as necessary and further public consultation, for refinement and preparation for planning / exhibition and, if and as appropriate, implementation.<br><br>The proposed measures for Clane that may be implemented after project-level assessment might include a series of hard defences (flood embankments and walls) and improvement of conveyance. The hard defences would protect to the 1% AEP fluvial flood event. | To be progressed in the future and will be funded under the OPW's flood relief capital works programme. |
| | Maynooth Flood Relief Scheme | Progress the project-level development and assessment of a scheme for Maynooth to augment the existing Scheme, including environmental assessment as necessary and further public consultation, for refinement and preparation for planning / exhibition and, if and as appropriate, implementation.<br><br>The proposed further measures for Maynooth that may be implemented after project-level assessment might include a series of hard defences (flood embankments and walls) and an overland flow route. The hard defences would protect to the 1% AEP fluvial flood event. | To be progressed in the future and will be funded under the OPW's flood relief capital works programme. |
| | Newbridge Flood Relief Scheme | Progress the project-level development and assessment of scheme for Newbridge, including environmental assessment as necessary and further public consultation, for refinement and preparation for planning / exhibition and, if and as appropriate, implementation.<br><br>The proposed measures for Newbridge that may be implemented after project-level assessment might include a series of hard defences (flood embankments and walls), four new or upgraded trash screens, tanking two existing properties and works to improve channel conveyance including dredging of the Doorfield tributary and upgrading two culverts. The hard defences would protect to the 1% AEP fluvial flood event. | To be progressed in the future and will be funded under the OPW's flood relief capital works programme. |

## 5.8 National Indicative Fluvial Maps

### 5.8.1 Background

The CFRAM studies did not generate flooding extents along all watercourses in Ireland. The OPW undertook an additional study the National Indicative Fluvial Mapping (NIFM) Project to identify flood extent mapping on additional watercourses. These maps are 'predictive' flood maps showing indicative areas that may flood during a flood of an estimated probability of occurring. The indicative fluvial flood maps were finalised in December 2020. For more information on the National Indicative Fluvial Maps go to https://www.floodinfo.ie/map/nifm_user_guidance_notes/.

These maps indicate the estimated flood extents only from those river reaches that have been modelled within the project. Flooding from other reaches of river may occur, but have not been mapped, and so areas that are not shown as being within a flood extent may therefore be at risk of flooding from un-modelled rivers (as well as from one of the other sources of flooding referred to below).

There are many other possible sources of flooding, such as tidal, surcharged urban drainage systems, ponding rainwater, groundwater or blockage of structures such as culverts. Flooding from these other sources were not mapped during the NIFM project, and so areas that are not shown as being within a flood extent may therefore be at risk from flooding from one or more of these other sources.

### 5.8.2 Use of the National Indicative Fluvial Maps for the Purposes of Planning

The OPW advises that the National Indicative Fluvial Maps are not the best achievable representation of flood extents and they are not as accurate as the Flood Maps produced under the CFRAMS. The maps should not be used to assess the flood risk associated with individual properties or point locations, or to replace a detailed site-specific flood risk assessment.

The OPW advises that the maps may be used in the Stage I Flood Risk Assessment (Flood Risk Identification) to identify areas where further assessment would be required if development is being considered within or adjacent to the flood extents shown on the maps. Similarly, the maps may be used to identify whether flood risk might be a relevant issue when considering a planning application, or when discussing a potential application at pre-planning stage.

The OPW also advises for the purposes of flood zoning, or making decisions on planning applications, it is strongly recommended that a Stage II Flood Risk Assessment (Initial Flood Risk Assessment), as set out in the Guidelines, is undertaken.

## 5.9 Indicative SFRA Flood Mapping

Some areas which were not within the scope of the CFRAM and mapping but where the NIFM mapping indicated a potential flood risk, required updated flood zone mapping to be generated for this SFRA. As discussed in **Section 5.8** above, NIFM mapping is not deemed suitable to justifiably zone land with consideration for flood risk therefore a review of the zoned areas was carried out and eight (8) areas were considered appropriate for updated mapping to be generated.

The hydrology for these areas was developed using the FSU and IH124 methodologies which are the preferred methods based on best practice in Ireland and are the methods used in the CFRAM studies. The CFRAM studies were used to help identify appropriate hydrological adjustment sites and also to provide guidance on index flows, growth curves and hydrographs. GIS software was used to extract and process cross sections and river centrelines from LiDAR data. The design flows and river profile data was input into a hydraulic model to generate flood zones for the identified areas. The flood zones are indicative but provide a greater degree of confidence than the NIFM mapping.

It should be noted that for all areas where flood risk has been identified, these should still be subject to a SSFRA to confirm more accurate flood extents as structures (e.g., culverts, bridges, storm water pipes, weirs etc.) along the river reaches have not been included or their size estimated using local KCC knowledge. This mapping is considered appropriate as Stage 2 FRA flood mapping to allow KCC to follow the sequential approach.

## 5.10 Conclusion of Stage 1

Records of historical flooding, the various sources of flood extent mapping and other records outlined in the preceding sections indicated that County Kildare is potentially at risk from fluvial flooding and to a lesser extent pluvial and groundwater flooding. Therefore, the FRA was progressed to Stage 2 – Initial Flood Risk Assessment.

# 6 STAGE 2 – INITIAL FLOOD RISK ASSESSMENT

## 6.1 Overview

The purpose of the Initial FRA was to appraise the availability and adequacy of the identified flood risk information; to qualitatively appraise the flood risk posed to the urban areas and potential impacts on flood risk elsewhere; and recommend possible mitigation measures to reduce the risk to acceptable level. In consideration of the above assessment, the primary flood risk to the study area was attributed to:

- Fluvial – High Risk
- Pluvial (overland flow)– Medium Risk
- Groundwater – Low Risk

## 6.2 Fluvial Flooding

The fluvial flood zones used to review flood risk within County Kildare for the SFRA are derived from three sources including CFRAM Flood Zone maps, the NIFM project and the indicative (Stage 2) SFRA mapping generated for this report. KCC have used the flood zones to apply The Guidelines sequential approach, and where necessary the Justification Test, to appraise sites for suitable land zonings and identify how flood risk can be managed as part of the CDP. The NIFM mapping has not be used in areas where Justification Tests have been required. The sequential approach was followed, and the flood zones were avoided.

The flood zones only account for inland flooding. The flood zone maps are shown in **Appendix B**. **Table 6-1** highlights the adequacy and confidence of the information used in the Flood Zone mapping review.

**Table 6-2** shows the type of fluvial flood mapping which is applicable to the Environs, Small Towns, Villages and Rural Settlements discussed in the SFRA. Flood risk for individual urban areas is examined in their corresponding sections within this chapter.

**Table 6-1: Adequacy of Information for Flood Zone Mapping Review**

| Flood Zone Mapping Source | Confidence | Comments |
|---|---|---|
| CFRAMS | High / Moderate | These maps are the most comprehensive flood maps produced for County Kildare. They have been generated using detailed hydrological and hydraulic analysis. |
| OPW NIFM | Moderate / Low | These are indicative flood zone maps and should be used with caution. They do not account for flood defences, channel structures or channel works. They have been used to infill flood zones in areas outside of the scope of the CFRAM mapping and the SFRA indicative flood zones. |
| SFRA Indicative Flood Zones | Moderate | Indicative flood zones generated to justify inclusion of settlement expansion zones and proposed residential areas. These areas should still be subject to SSFRAs to accurately define the flood zones. |

**Table 6-2: Type of Fluvial Flood Mapping used for each area**

| Location | Location Type | Fluvial Flood Mapping Type |
|---|---|---|
| Allen | Settlement | No fluvial risk indicated |
| Allenwood | Village | CFRAM mapping |
| Ardclough | Settlement | No fluvial risk indicated |
| Athgarvan | Village | CFRAM mapping |

| Location | Location Type | Fluvial Flood Mapping Type |
|---|---|---|
| Ballitore | Village | NIFM mapping |
| Ballymore Eustace | Village | CFRAM mapping |
| Ballyshannon | Settlement | No fluvial risk indicated |
| Blessington | Environs | CFRAM mapping |
| Brannockstown | Settlement | No fluvial risk indicated |
| Broadford | Settlement | NIFM mapping |
| Brownstown | Settlement | No fluvial risk indicated |
| Calverstown | Settlement | No fluvial risk indicated |
| Caragh | Village | SFRA indicative mapping |
| Castledermot | Town | CFRAM mapping |
| Clogharinkoe | Settlement | No fluvial risk indicated |
| Coill Dubh / Coolearagh | Village | No fluvial risk indicated |
| Crookstown | Village | NIFM mapping |
| Cutbush | Settlement | No fluvial risk indicated |
| Derrinturn | Town | SFRA indicative mapping |
| Johnstown | Village | CFRAM mapping |
| Johnstownbridge | Village | CFRAM mapping |
| Kilberry | Settlement | CFRAM mapping |
| Kilcullen | Town | CFRAM/NIFM mapping |
| Kildangan | Village | SFRA indicative mapping |
| Kilkea | Settlement | NIFM mapping |
| Kill | Town | CFRAM mapping |
| Kilmead | Settlement | No fluvial risk indicated |
| Kilmeague | Village | No fluvial risk indicated |
| Kilteel | Settlement | No fluvial risk indicated |

| Location | Location Type | Fluvial Flood Mapping Type |
|---|---|---|
| Ladytown (Naas) | Environs | No fluvial risk indicated |
| Lackagh /Mountrice | Settlement | No fluvial risk indicated |
| Maganey / Levitstown | Settlement | CFRAM/ SFRA indicative mapping |
| Milltown | Settlement | NIFM Mapping |
| Moone | Village | NIFM Mapping |
| Narraghmore | Village | No fluvial risk indicated |
| Newbridge | Town | CFRAM Mapping |
| Nurney | Settlement | SFRA indicative mapping |
| Prosperous | Town | SFRA indicative mapping |
| Rathangan | Town | CFRAM mapping |
| Rathcoffey | Settlement | No fluvial risk indicated |
| Robertstown | Village | No fluvial risk indicated |
| Staplestown | Settlement | SFRA indicative mapping |
| Straffan | Village | CFRAM mapping |
| Suncroft | Village | CFRAM mapping |
| Timolin | Village | SFRA indicative mapping |
| Two Mile House | Settlement | No fluvial risk indicated |

## 6.3 Fluvial Flooding - Climate Change Sensitivity

The CFRAMS flood extent mapping for the present day scenario and the climate change scenarios for MFRS and HEFS, as shown on www.floodinfo.ie, were compared to establish an indication of future flood risk in areas. The review concluded that some proposed highly vulnerable zonings, existing zonings and well-established areas of the town could come under increased flood risk. Areas at specific risk from potential increases in flood extent due to climate change are examined in their corresponding sections within this chapter. KCC have used the climate change flood extent mapping to apply The Guidelines sequential approach for appraising sites and make proactive land use decisions to avoid potential future flood risk issues with land zonings.

## 6.4 Groundwater Flooding

A review of the GSI Groundwater Flooding Data Viewer, identified no recorded karst features within the examined settlements which can indicate potential for groundwater flooding.

The GSI also generated a Maximum Historic Groundwater flood map which 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. The mapping indicates sporadic records of groundwater flooding across the county in rural areas however no record events in the urban areas.

## 6.5 Pluvial Flooding

The OPW undertook a national Preliminary Flood Risk Assessment (PFRA) that provided a national level screening of areas that are at potential risk of pluvial flooding. In addition to the historic groundwater flood map as discussed in **Section 6.4**, the GSI flood mapping methodology was also adapted to produce a surface water flood map of the 2015/2016 flood event. (It should be noted that this flood map is only represents the 2015/2016 flood event and should not considered maximum historic flood surface water flood extent map.)

A preliminary screening of areas of flood risk concern has been carried out for this SFRA, drawing on historical flood records, the OPW's PFRA mapping and the GSI historic map. Areas at risk from pluvial flooding where a more detailed FRA maybe required are examined in **Section 7**. All planning applications must undertake a Surface Water Management Plan in in accordance with the policies outlined in Chapter 6 Infrastructure & Environmental Services of the CDP and as discussed in **Section 4.3**.

## 6.6 Proposed Local Infrastructure Works

The KCC regional Engineering Departments have identified some ongoing and proposed local infrastructure works for urban areas to manage flood risk and surface water drainage. These are identified as shown in Table 6-3. Some proposed works are subject to funding and environmental assessments.

**Table 6-3: Ongoing and Proposed Local Infrastructure Works**

| Location | Works Status | Comments |
|---|---|---|
| Athgarvan | Proposed | Subject to funding, engineering studies and environmental assessments, surface water works are required at the following locations:<br>• R413 at Athgarvan National School<br>• L2032 between Mountain View and the village centre at R416. |
| Brannockstown | Proposed | KCC is planning to undertake surface water improvement works at Moorehill, Brannockstown to commence in early 2022. |
| Caragh | Proposed | Subject to funding, engineering studies and environmental assessments, surface water works are required at:<br>• Castlekeeley;<br>• Stickin; and<br>• Raheens.<br>A possible drainage study could also be undertaken to assist with the future growth of the village and improving the overall connectivity of the drainage network by identifying required upgrades and preferred outfall locations. |
| Castledermot | Ongoing | Periodic maintenance of non-return valves and surface water drainage infrastructure within town discharging to the River Lerr. There is also periodic maintenance and cleaning of the River Lerr to help manage flood risk. |
| Coill Dubh / Coolearagh | Proposed | Subject to funding, engineering studies and environmental assessments, road drainage surface water pipes could be upgraded to alleviate road flooding in Coill Dubh. |
| Derrinturn | Proposed | Subject to funding, engineering studies and environmental assessments, surface water infrastructure works could be undertaken in Derrinturn. |

| Location | Works Status | Comments |
|---|---|---|
| Kildangan | Ongoing | Periodic maintenance and cleaning of Oghil River to prevent blockages and mange flood risk. |
| Kilmeague | Proposed | Subject to funding, engineering studies and environmental assessments, the following works could be in undertaken in Kilmeague:<br>• Upgrades to the road drainage surface water network; and<br>• Installation of an overflow pipe for the soakaway connected to the road drainage infrastructure. |
| Maganey / Levitstown | Proposed | Subject to funding, engineering studies and environmental assessments it is proposed to raise part of the R417. Any works will need to ensure that the flood risk is not increased in local area by altering the floodplain from the River Barrow. |
| Milltown | Proposed | Subject to funding, engineering studies and environmental assessments, surface water works are required to alleviate flooding at Fenview Housing Estate. |
| Narraghmore | Ongoing / Proposed | Ongoing and proposed works to connect current and future local housing estates to the surface water drainage network. |
| Rathangan | Proposed | Subject to funding, engineering studies and environmental assessments, surface water works are required at:<br>• Knavinstown; and<br>• Ellistown. L2032 between Mountain View and the village centre at R416.<br>A possible drainage study could also be undertaken to assist with the future growth of the village and improving the overall connectivity of the drainage network by identifying required upgrades and preferred outfall locations. |
| Robertstown | Proposed | Possible surface water infrastructure upgrades to be carried out in parallel to future improvements at the Robertstown National School. |
| Suncroft | Ongoing / Proposed | Periodic maintenance works at required on the Common North Stream near the local graveyard to prevent road flooding.<br>Subject to funding, engineering studies and environmental assessments, surface water works are required on the road from Brownstown Cross to Cut Bush.<br>A possible drainage study could also be undertaken to assist with the future growth of the village and improving the overall connectivity of the drainage network by identifying required upgrades and preferred outfall locations. |
| Two Mile House | Proposed | Subject to funding, engineering studies and environmental assessments, surface water works are required to supplement 2020 drainage works for better connection to an existing outfall. |

## 6.7 Conclusion of Stage 2

County Kildare is identified to have a high fluvial flood risk and hence a further assessment of the implications to the county is necessary. A review of the available flood zone mapping indicates that several of the urban areas in the county are at risk from fluvial flooding for the 1% and 0.1% AEP events. The risk of pluvial and groundwater flooding has been deemed low for the county however some urban areas have potential pluvial risk and has been examined in a case by case basis. KCC have also identified some ongoing and proposed local infrastructure works for settlements to manage flood risk and surface water drainage as shown in **Table 6-3**.

A review of the available flood mapping as discussed in **Section 6.2** (shown in **Appendix B**) indicates that KCC have sufficient flood risk information and mapping to appraise the proposed land use zonings and they do not require further hydraulic modelling to be in compliance with the Guidelines. Therefore it is not required for the CDP to progress to Stage 3 Detailed FRA. Detailed FRAs for some development areas may be required at planning level stage which is examined in further detail in **Section 7.**

# 7 DEVELOPMENT PLAN ZONING

## 7.1.1 Introduction

The zonings and land allocations for all areas identified in **Table 2-1** have been reviewed against historical flooding, the available flood zone mapping, the indicative pluvial risk mapping, the sensitivity of flood extents to climate change, previous SFRA reports and existing planning applications. A summary of the zonings (other zoning categories not listed here should be considered on their own merit) and an assessment of their vulnerability and the requirements of application of the justification test are shown in **Table 7-1**.

KCC reviewed the flood zones regularly during the CDP process and followed the sequential approach to zone land appropriate to their flood risk vulnerability. Open Space and Amenity areas have been zoned to coincide with flood risk areas in so far as possible and practicable.

Land use zonings do not apply to centres that are identified as 'Rural Settlements' in **Table 2-1**. The CDP has identified a rural settlement boundary in each of these centres and allocates land inside the boundary as settlement core, existing settlement or settlement expansion. The principles of the 'Guidelines' still apply to these settlements.

The following sections present the flood risk review and land use appraisal for each planning area. A boundary which designates where a SSFRA is required has been delineated for some planning areas. This boundary has been derived by including a buffer from the flood zones and in some cases also accounts for climate change flood extents (not shown on the flood zone mapping in the SFRA). The buffer has been included to account for potential uncertainty in the SFRA flood zone mapping as a more detailed SSFRA at local scale may find that the flood zones in that area may differ.

**Figure 7-1** shows the legend for the land use appraisal images for each location. **Appendix A** outlines the flood risk management recommendations for the planning areas. **Appendix B** shows the flood zone mapping each planning area. Where less vulnerable and highly vulnerable zonings coincide with flood zones that cannot be avoided or their land use substituted, Justification Tests have been carried out as applicable and are illustrated in **Appendix C.**

**Figure 7-1: Legend for land use appraisal images**

**Table 7-1: Land Use Zonings and Flood Risk Vulnerabilities**

| Settlement Hierarchy | Land-Use | Land-Use Zoning Objectives | Flood Risk Vulnerability | Justification Test Required |
|---|---|---|---|---|
| Self-Sustaining Growth Town | A - Town Centre | To protect, improve and provide for the future development of the town centre. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | B - Existing Residential/ Infill | To protect and enhance the amenity of established residential communities and promote sustainable intensification. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | C - New Residential | To provide for new residential development. | High | For Development in Flood Zone A or B |
| | Cp2 - New Residential – Phase 2 | To protect future development lands from inappropriate forms of development which would impede the sequential expansion of the town in accordance with Objective CSO 1.5. | High | For Development in Flood Zone A or B |
| | E - Community and Education | To provide for community, recreation and educational facilities. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | F - Open Space and Amenity | To protect and provide for open space, amenity and recreation provision. | Less / Water Compatible | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | GU - General Business Use | To provide for general business development. | Less | For Development in Flood Zone A |
| | H - Industry and Warehousing | To provide for manufacturing, warehousing and industrial development. | Less | For Development in Flood Zone A |
| | I - Agriculture | To retain and protect agricultural uses. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | L - Leisure and Tourism | To provide for leisure and tourism facilities. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | MU - Mixed Use | To provide for a mix of uses to include residential and commercial. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | N - Neighbourhood Centre | To provide for new/existing neighbourhood centres and associated facilities. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |

| Settlement Hierarchy | Land-Use | Land-Use Zoning Objectives | Flood Risk Vulnerability | Justification Test Required |
|---|---|---|---|---|
| | O - Department of Defence | To provide for services associated with the Department of Defence. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | Q - Enterprise and Employment | To provide for and facilitate an appropriate mix of employment uses including office-based industry, enterprise and incubator units, business, science and technology and institutional uses. | Less | For Development in Flood Zone A |
| | R – Retail and Commercial | To support continued operation of existing retail commercial uses. | Less | For Development in Flood Zone A |
| | SR - Strategic Reserve | To protect the integrity of the lands to provide for the future strategic expansion of the town over future plan periods and ensure any development that would prejudice the future orderly expansion of the town will be resisted. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | U - Transport and Utilities | To provide for and improve public infrastructure utilities. | High | For Development in Flood Zone A or B |
| Small Town / Villages / Environs | A – Town Centre / Village Centre | To provide for the development and improvement of appropriate town/village centre uses including residential, commercial, office and civic use. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | B – Existing Residential / Infill | To protect and improve existing residential amenity, to provide for appropriate infill residential development and to provide for new and improved ancillary services | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | C – New Residential | To provide for new residential development. | High | For Development in Flood Zone A or B |
| | E – Community and Education | To provide for community and educational facilities. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | F – Open Space and Amenity | To protect and provide for open space, amenity and recreation provision. | Less / Water Compatible | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | H – Industry and Warehousing | To provide for new warehousing and industrial development. | Less | For Development in Flood Zone A |
| | I – Agriculture | To retain and protect agricultural uses. | High / Less | For highly vulnerable development in Flood Zone A or B |

| Settlement Hierarchy | Land-Use | Land-Use Zoning Objectives | Flood Risk Vulnerability | Justification Test Required |
|---|---|---|---|---|
| | | | | For less vulnerable development in Flood Zone A |
| | KIE – Equine Based Leisure, Tourism and Enterprise | To develop equine based industry at Goffs. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | O – Open Space and Amenity | To protect and provide for open space, amenity and recreation provision. | Less / Water Compatible | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | Q – Enterprise and Employment | To provide for and facilitate the provision of high job-generating uses / To promote the development of employment generating uses. | Less | For Development in Flood Zone A |
| | R – Retail and Commercial | To provide for commercial development. | Less | For Development in Flood Zone A |
| Small Town / Villages / Environs | SR - Strategic Reserve | To protect lands from inappropriate forms of development which would impede the orderly expansion of the strategic urban centre in future plan periods. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | T – General Development | To provide for a wide range of uses including office, leisure, residential, retail, and light industrial /employment use. In this zone, it is important to avoid abrupt transitions in scale and use at the boundary of adjoining land use zones. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | U – Utilities/ Services | To provide for and improve public facilities. | High | For Development in Flood Zone A or B |
| | V – Equestrian | To develop Kill Equestrian Centre. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | SS – Serviced Sites | To provide for 'build your own home', low density residential development | High | For Development in Flood Zone A or B |
| Rural Settlements | Settlement Core | The settlement core consists of local facilities, such as schools, shops and community centres. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | Existing Settlement | Existing settlement, which has grown around the settlement core, is mainly residential in nature, but may also include other uses such as employment and recreation. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |

| Settlement Hierarchy | Land-Use | Land-Use Zoning Objectives | Flood Risk Vulnerability | Justification Test Required |
|---|---|---|---|---|
| | Settlement Expansion | Such sites have been selected on the basis of developing the settlement in a sequential and sustainable manner. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |
| | Serviced Sites | To provide serviced sites with appropriate infrastructure to attract people to build their own homes and live in rural settlements. | High / Less | For highly vulnerable development in Flood Zone A or B<br>For less vulnerable development in Flood Zone A |

### 7.1.2 Self-Sustaining Growth Towns

**Newbridge**

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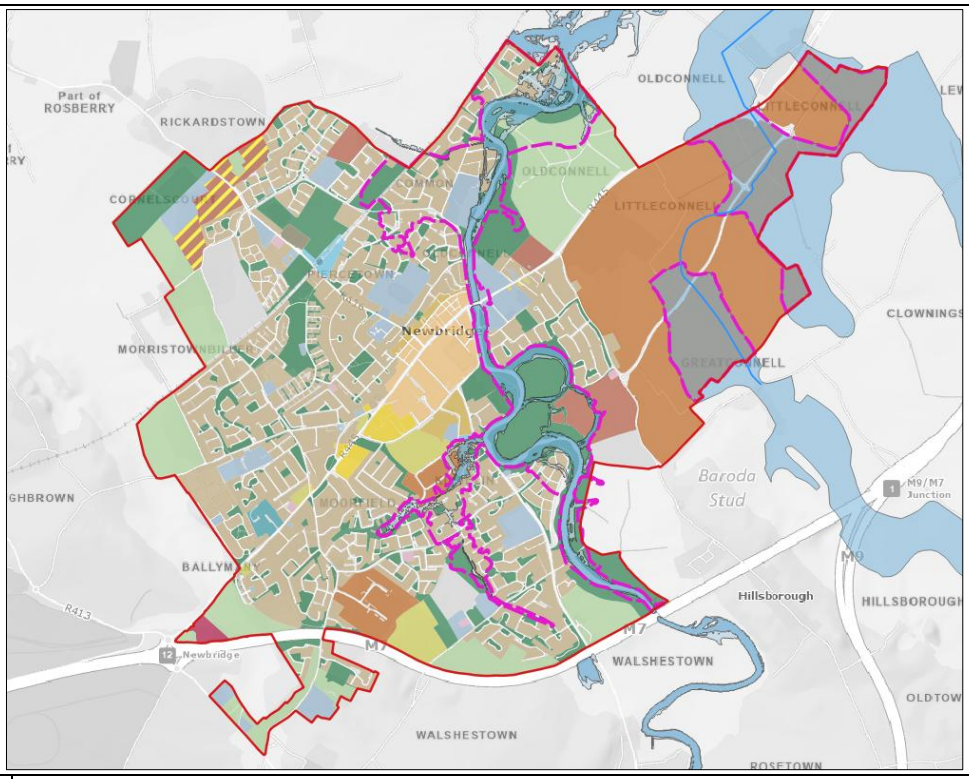
| |  |
| **Flood Risk Review** | Historical Flooding<br>There are six instances of historical flooding identified within the town's extents. Periodic flooding resulting from heavy rainfall poses a flood risk to Ballymanagh Cottages in the southwest of Newbridge and the Naas Road in the northeast of Newbridge. However, maintenance measures have been implemented along Naas Road, alleviating future flooding. The River Liffey and its tributaries periodically bursts their banks as a result of heavy rainfall. Consequently, flooding along the Roseberry Stream results in flooding at Newbridge College, and along Miltown Road at Lakeside Park Estate and Mount Carmel Estate. Similarly, flooding along the River Liffey results in flooding along Athgarvan Road at the Kilbelin Park Estate.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones in Newbridge highlighted several areas which have zonings within flood risk areas. These include highly vulnerable zonings which require a Justification Test to validate the appropriateness of the zoning. Lands classified as Existing Residential (including portions of Old Connell Weir, Barrettstown Meadows, Riverside Park, Mill Lane, College Grove, Barrettstown Lawns, Barrettstown Roads, Ring of Roseberry, Ailesbury Park, Abbey Manor, Belin Wood, Kilbelin Park, Liffey Hall, Moorefield Park, Millfield, Curragh Grange, Kilbelin Abbey, Belmont Green, Walshestown Abbey, Walshestown Park, and Walshestown Crossroads residential estates) are located in Flood Zones A and B. Lands classified as Community and Education, Industry and Warehousing, and Transport and Utilities zoning (including portions of Newbridge College, Patrician Primary School, Patrician Secondary School, and Newbridge Industrial Estate) are located in Flood Zones A and B.<br><br>Where CFRAM Fluvial Flood Mapping is not available for the Littleconnell watercourse, this flood risk assessment has evaluated Site-Specific Flood Risk Assessments submitted with granted planning permissions within the area and reviewed the Drainage District Benefitting Land mapping to assess flood risk. Hydraulic analysis within the SSFRAs has demonstrated that the watercourse channel flowing through Littleconnell has sufficient capacity to contain the 1% AEP flows with an allowance for climate change. It is therefore considered appropriate that Flood Zone A is contained within the banks of the watercourse. |

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| | The Drainage District channel is maintained by Kildare County Council and maintenance measures are noted to have been implemented along Naas Road alleviating flood risk previously recurring at this location. However, despite ongoing maintenance and management by Kildare County Council, a precautionary approach in accordance with the Planning Principles in Section 3.1 of The Guidelines has been adopted to reflect the uncertainty in flooding datasets and risk assessment techniques within this area. As such, all lands within the Drainage District benefitting area have been classified Flood Zone B with a moderate level of flood risk. Lands in this area are zoned for Industry and Warehousing which is considered 'less vulnerable' to flooding and the Justification Test is not required. However, a site-specific FRA will still be required for all development in these areas.<br><br><u>Pluvial Flooding</u><br>There are multiple recorded historical pluvial flood events throughout Newbridge. SAR Seasonal Flood mapping and Maximum Historic Groundwater Flood mapping indicate significant groundwater and surface water flooding along the eastern bank of the River Liffey where it runs through Newbridge and northeast of the Old Connell Weir estate.<br><br><u>Climate Change</u><br>The CFRAM climate change flood extent mapping (**Appendix B**) shows that there is an increase in flood extents within Newbridge. There is an increase in flood extents from Barrettstown Meadows southwest into Raymond Court and Roseberry Court residential estates. There is an increase in flood extents from Ailesbury Park and Newbridge College into Mount Carmel, College Farm, and College Orchard residential estates. There is also a notable increase in flood extents within Newbridge College, Patrician Secondary School, Liffey Hall Estate, and Belin Wood Estate. |
| **Flood Risk Mitigation** | Within the Settlement Plan, flood risk is managed via a range of structural and non-structural measures to adequately manage flood risk to development and to demonstrate the use or development will not cause unacceptable adverse impacts elsewhere.<br>• Locations of New Development Zoning are limited to areas that are appropriate for development without need of the justification test<br>• All planning applications are required to:<br>  ○ be developed in accordance with the KCC CDP Chapter 6 surface water and drainage policies and objectives (including the Kildare Sustainable Drainage Systems Guidance Document, 2024)<br>  ○ undertake a Surface Water Management Plan (SWMP)to mitigate any potential pluvial flood risk and must align with the relevant proposed drainage strategy outlined within the Newbridge Settlement Plan Surface Water Management Strategy.<br>• No new development within areas sensitive to climate change wherever possible<br>• No future development of areas in an urban settlement that are at moderate or high risk for flooding, except for minor development in existing significantly developed areas.<br>  ○ Minor development must meet the criteria of Revised Section 5.28 – page 52 of The Guidelines as per Planning Guidelines Circular PL 2/2014<br>  ○ Minor Development must not:<br>  ▪ Introduce significant additional number of people into flood risk areas<br>  ▪ Obstruct important flow paths<br>  ▪ Entail storage of hazardous substances<br>  ○ Minor Development must:<br>  ▪ Be subject to a Site-Specific FRA<br>  ▪ Design for Residual Flood Risk in accordance with Section 4 of Appendix B of the Guidelines through consideration of:<br>  • Stormwater drainage network design exceedance<br>  • Raising Floor levels above expected flood levels<br>  • Flood resilient internal layouts<br>  • Flood resistant construction methods<br>  • Flood resilient construction methods<br>  • Safe Access and Egress |

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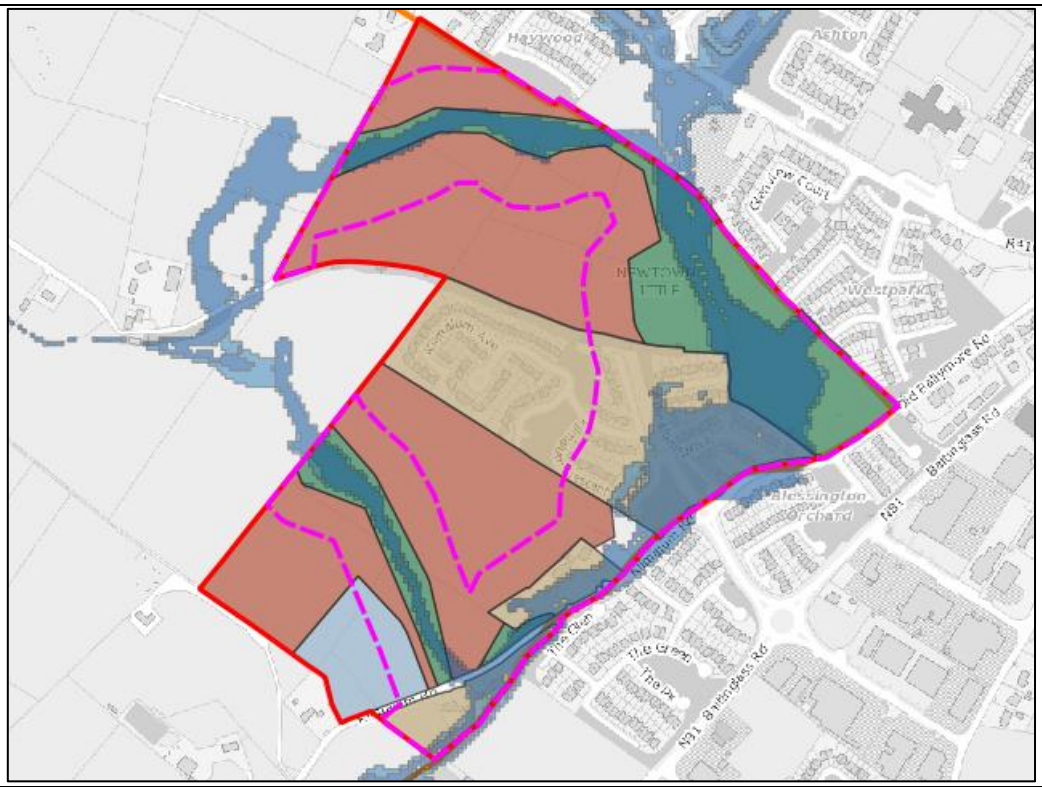
| **Conclusion** | There is a requirement to carry out an SSFRA for any proposed new residential developments which shall ensure that the sequential approach is followed at site-specific level and also that inappropriate development is not permitted in flood zones.<br><br>The extent of the areas where an SSFRA must be carried out as part of planning applications has been delineated. The delineated area provides a conservative approach to flood risk and requires all property impacted by the 0.1%AEP High End Future Scenario to complete an SSFRA. SSFRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type.<br><br>Based on the criteria in the Guidelines, the Development Plan Justification Test is required to assess if the Existing Residential, Community and Education, Industry and Warehousing, and Agriculture zonings in this area is still suitable.<br><br>A Justification Test was completed and found that it is considered appropriate to retain the existing and proposed zonings. The Justification Tests are included in **Appendix C**.<br><br>It is noted that CFRAM mapping in the region south of Newbridge is subject to review due to a change in hydraulic conditions in this region. As part of the review process changes in CFRAM fluvial flood extents in this region may occur. |

### 7.1.3 Environs

**Blessington**

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| **Flood Risk Review** | Historical Flooding<br>No historical flooding identified within the environs extents.<br><br>Fluvial Flooding<br>Lands classified as Existing Residential (Blessington Manor Estate and properties along Kilmalum Road) are located in Flood Zones A and B. Proposed New Residential lands do not encroach on the floodplains. The Flood Zones have been designated as open space.<br><br>Pluvial Flooding<br>The zoned lands generally slope to the east towards the Kilmalum Road. There are low-lying areas adjacent to the Westpark Estate along the north eastern boundary of the zoned lands. This is highlighted in the PFRA mapping which indicates a 1% AEP pluvial extent in this area which also concurs with the CFRAM fluvial flood extent mapping.<br><br>Climate Change<br>The CFRAM climate change flood extent mapping shows that there is an increase in flood extents within Blessington Manor and along Kilmalum Road. There is also increase in flood extents in the other parts of the zoned lands however these increases are contained within the open space zonings. |
| **Conclusion** | Based on the criteria in the Guidelines, the Development Plan Justification Test is required to assess if the Existing Residential zoning in this area is still suitable. Also, although the sequential approach has been followed and KCC have assigned water compatible zonings to open space areas that overlap with Flood Zones A and B, there is some instances where some limited flooding overlaps with New Residential Land Use Zones, therefore a Justification Test is required.<br><br>A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing and proposed zonings. The Justification Test is included in **Appendix C**. There is a requirement to carry out an SSFRA for any proposed new residential developments |

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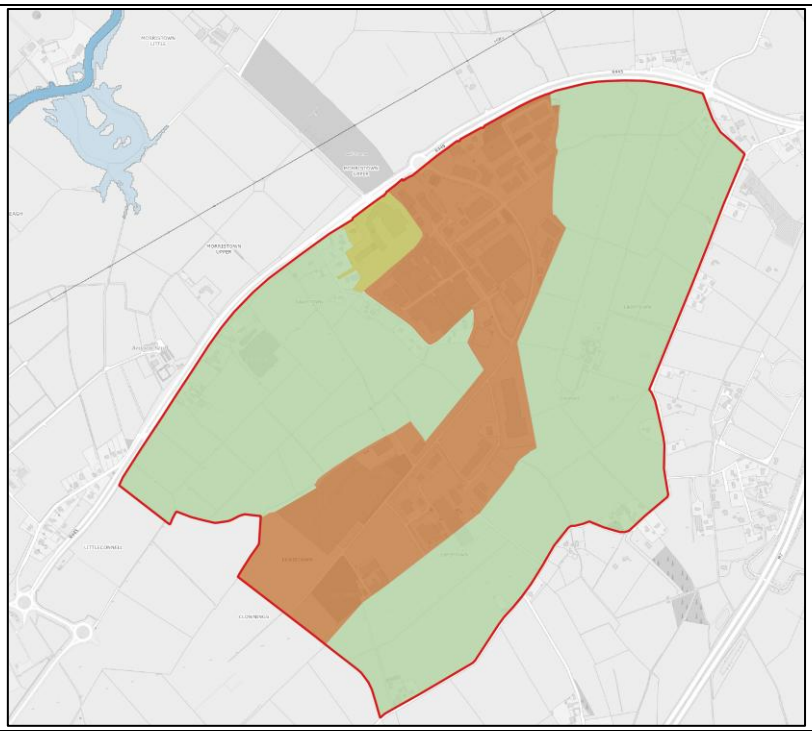
| | which shall ensure the sequential approach is followed at site-specific level and also development is not permitted in flood zones.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>All new and existing development requiring a site-specific Flood Risk Assessment must ensure it is appropriate to the type and scale of the development being proposed. Development proposals within the identified pink line shall;<br><br>i. Maintain floodplains and their flow paths;<br>ii. Include measures to minimise flood risk as far as reasonably possible;<br>iii. Not increase flood risk elsewhere and, if practicable, will reduce overall flood risk;<br>iv. Ensure that access and exit routes to and from the development site can be maintained in a flooding emergency;<br>v. Provide for compensatory storage if any floodplains are developed e.g., for roads across the site.<br>vi. vi) Ensure that development proposals on B; Existing Residential zoned land shall be restricted to minor infill proposals as outlined in Section 5.28 of the Flood Risk Management Guidelines 2009. |

## Ladytown



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| **Flood Risk Review** | Historical Flooding<br>No historical flooding identified within the environs extents.<br><br>Fluvial Flooding<br>A review of the CFRAM hydrology / hydraulic report for this area indicates that there are no significant watercourses within the zoned lands. The NIFM flood extent mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk.<br><br>Pluvial Flooding<br>The PFRA mapping highlights clusters of pluvial risk within the business park. Surface water and drainage should be addressed in SSFRAs.<br><br>Climate Change<br>The climate change flood zone mapping does not indicate any fluvial risk in this area. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

### 7.1.4 Small Towns

**Castledermot**

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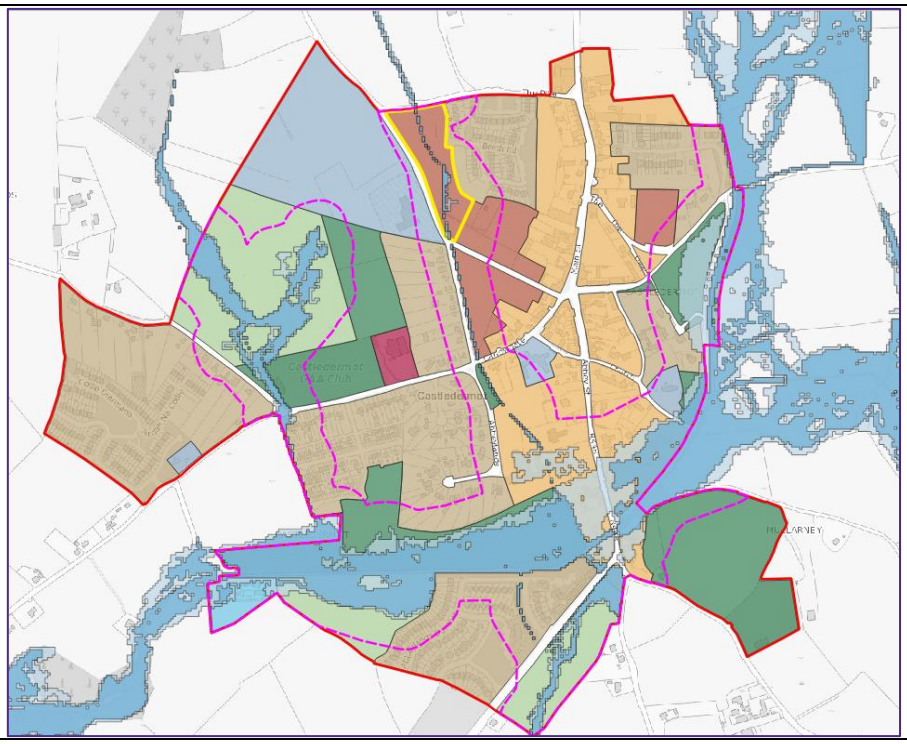
| |  |
| **Flood Risk Review** | Historical Flooding<br>Flooding in Castledermot is noted as a periodic recurring problem specifically adjacent to Doyle's Bridge on the R448.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones in Castledermot highlighted several areas which have zonings within flood risk areas. These include highly vulnerable zonings which require a Justification Test to validate the appropriateness of the zoning.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial risk within the town extents. The town generally slopes towards the River Lerr and its tributaries. The lowest lying areas are in the valley of the Lerr River at the foot of higher ground towards the east of the town in the townlands of Knockaphuca and Crophill. These areas could be subject to runoff from the higher ground.<br><br>Climate Change<br>The CFRAM mapping indicates that areas in north east of the town and the town centre show increased flood extents. The new residential zoning in Garterfarm has increased flooding extents within the site for 0.1% AEP climate change flooding scenarios. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess several zonings including the Town Centre, Existing Residential in Mullarney, Community (St. James' Church), a New Residential Zoning, Agricultural lands and for the Castledermot sewerage treatment plant to assess if these zonings were still suitable. As discussed in Section 3.4, the Guidelines recommend adopting "a cautious approach" to zoning lands potentially impacted by climate change flooding extents. Therefore, this SFRA recommends that the lands at Garterfarm potentially impacted by climate change flooding extents should be zoned as a water compatible land use to mitigate against potential flood risk. However the KCC CDP is proposing that the entire site would be zoned 'New Residential' and specifies that the climate change flooding scenario be examined in a Site-Specific FRA at planning application stage. Any development of the New Residential 'C' zoned lands identified within the yellow boundary identified above, shall incorporate a 10m 'open space/amenity' buffer either side of the stream that runs in a north-south direction through the subject lands. Where a 10m buffer cannot be satisfactorily achieved, for stated reasons, compensatory open |

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| | space for the quantum of open space that cannot be provided, shall be provided at an alternative, suitable, central location to be agreed with the Planning Authority. The SSFRA will assess the flooding risk and see if development on the site is achievable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing and proposed zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Derrinturn

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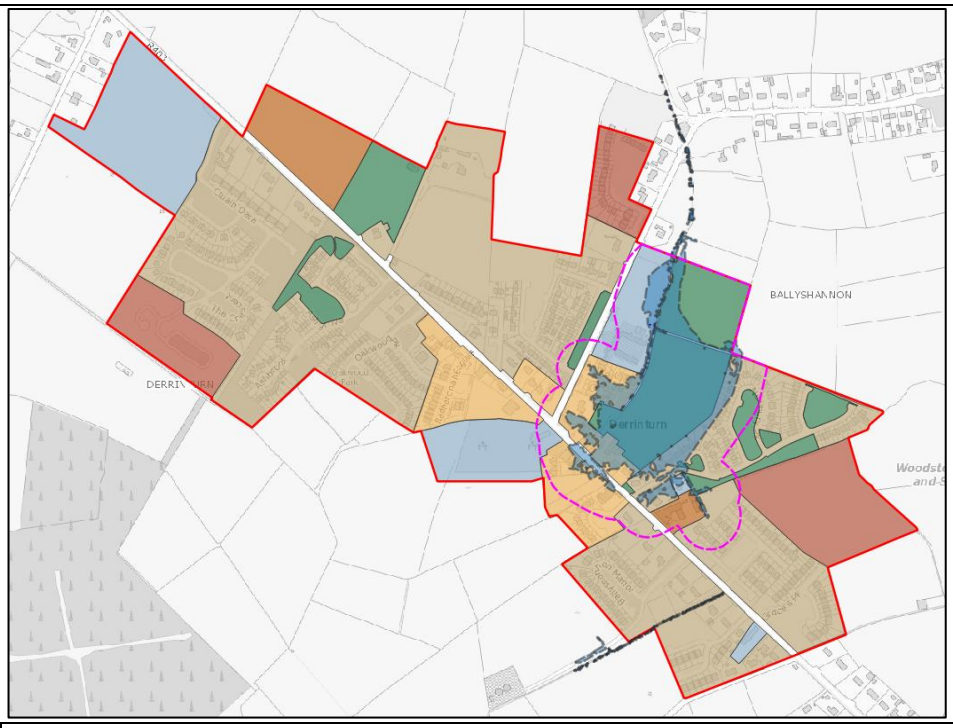
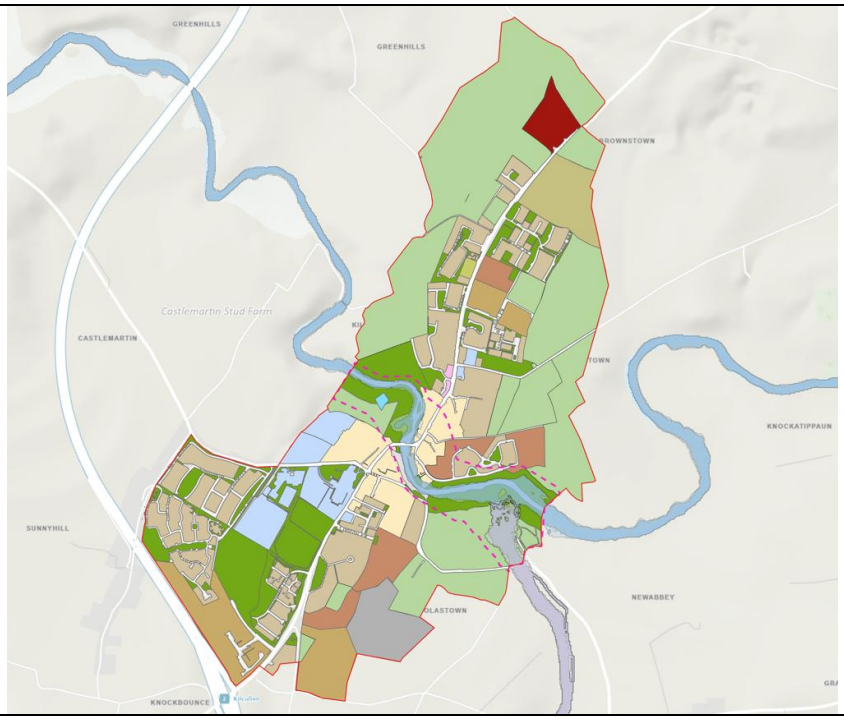
| |  |
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>Indicative flood maps were generated for Derrinturn. The Flood Zone A extent shows no fluvial flood risk to the town however the Flood Zone B extent is significant. This flooding occurs due the capacity of the existing drainage infrastructure in the town being overwhelmed and backing up causing flooding on land zoned for future expansion.<br><br>Pluvial Flooding<br>The town is quite a flat area however the PFRA mapping highlights a 1% AEP pluvial extent within the site of the green area zoned as town centre and also in the Dreenan area adjacent to the Ballyshannon River.<br><br>Climate Change<br>The mapping generated for Derrinturn shows a large increase in Flood Zone B in the green area zoned as town centre. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the Town Centre, Existing Residential (Newbury estate) and the Community & Education zonings are still suitable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>The Flood Zone B extent in Derrinturn is directly linked to the capacity of the existing surface water network. Preliminary hydraulic modelling indicates that a minimum of a 900mm diameter pipe could alleviate the flooding in the town centre. Potential development of the green area in the town centre should not include any vulnerable land uses until an upgrade of the Derrinturn Surface Water Scheme is completed. The upgrade of surface water network within Derrinturn has been identified by KCC as potential future works. |

## Kilcullen

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| **Flood Risk Review** | Historical Flooding<br>A notable flood occurred at Kilcullen on 9th June 1993 caused by heavy rainfall. River Liffey burst its banks and caused flooding to some properties in Kilcullen town.<br><br>Fluvial Flooding<br>In the context of the CFRAM study and its predictive flood maps, the banks of the River Liffey fall within both flood zone A and flood zone B. This classification specifically applies to the small section of land that is zoned as open space and amenity, as well as the town center near Kilcullen Bridge. Meanwhile, the OPW National Indicative Fluvial Mapping (NIFM) study indicates that the banks of Mill Stream and Grange More Stream are also in flood zone A and flood zone B. This classification pertains to the area zoned as agriculture.<br><br>Pluvial Flooding<br>Most of the flood affected areas are located in the agricultural fields to the east of existing developed areas, and along the adjacent floodplain of River Liffey.<br>Residual Risk<br>Historical flood events in June 1993, November 2000, and November 2009 demonstrate that the Poulaphouca reservoir, situated upstream of Kilcullen, serves as a flood relief reservoir. It retains inflows from the Upper Catchment until the floodwaters in the Middle Catchment subside[5]. Nonetheless, inundation studies conducted by ESB using the computer model 'DAMBRK' for natural 10,000-year flood scenario, breach in the Golden Falls dam (with a constant inflow of 30 $m^3/s$) and breach in the Poulaphouca dam (with a constant flow of 30 $m^3/s$), reveals potential flooding along the banks of the River Liffey. The flood affected areas include open spaces, amenities, agricultural land, New residential area and town center (see **Figure 7-2**, **Figure 7-3**, and **Figure 7-4**) [6].<br><br>Climate Change<br>The CFRAM mapping generated for Kilcullen shows a slight increase in Flood Zone A and Flood zone B along the banks of the River Liffey in the area zoned as Open Space and Amenity and town centre. |

[5] PFRA-ESB Dams and Embankments

[6] River Liffey Inundation Study (Pollaphuca to Leixlip), ESB 1994.

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| | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess the existing Town Centre zoning as there is some limited residential areas at risk in Flood Zones A and B as well as agriculture zoning with some limited area at risk in Flood zone A (NIFM) and Flood zone B (NIFM). A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**. |
| **Conclusion** | The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

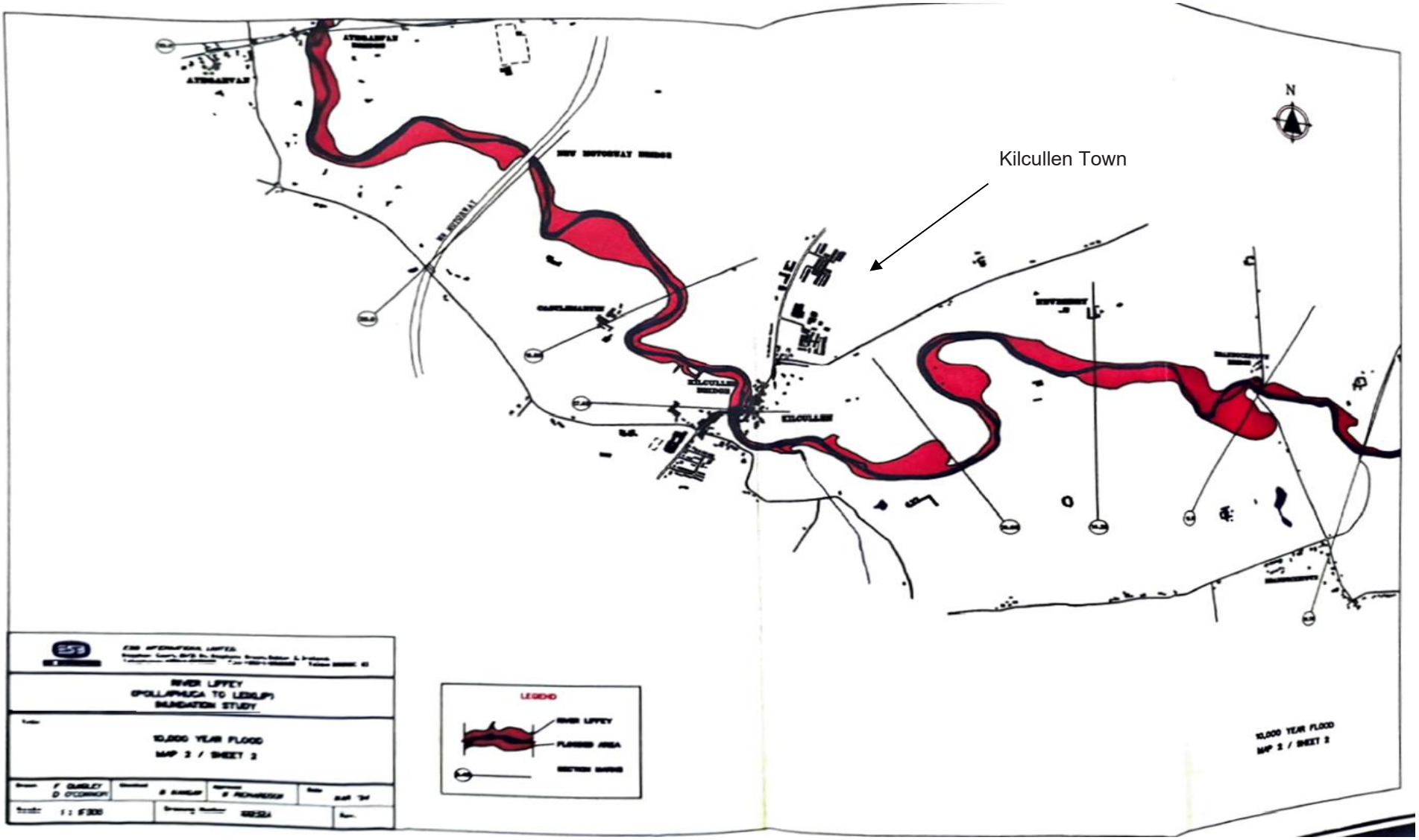



**Figure 7-2 Natural 10,000 year flood map at Kilcullen town (using DAMBRK model)**

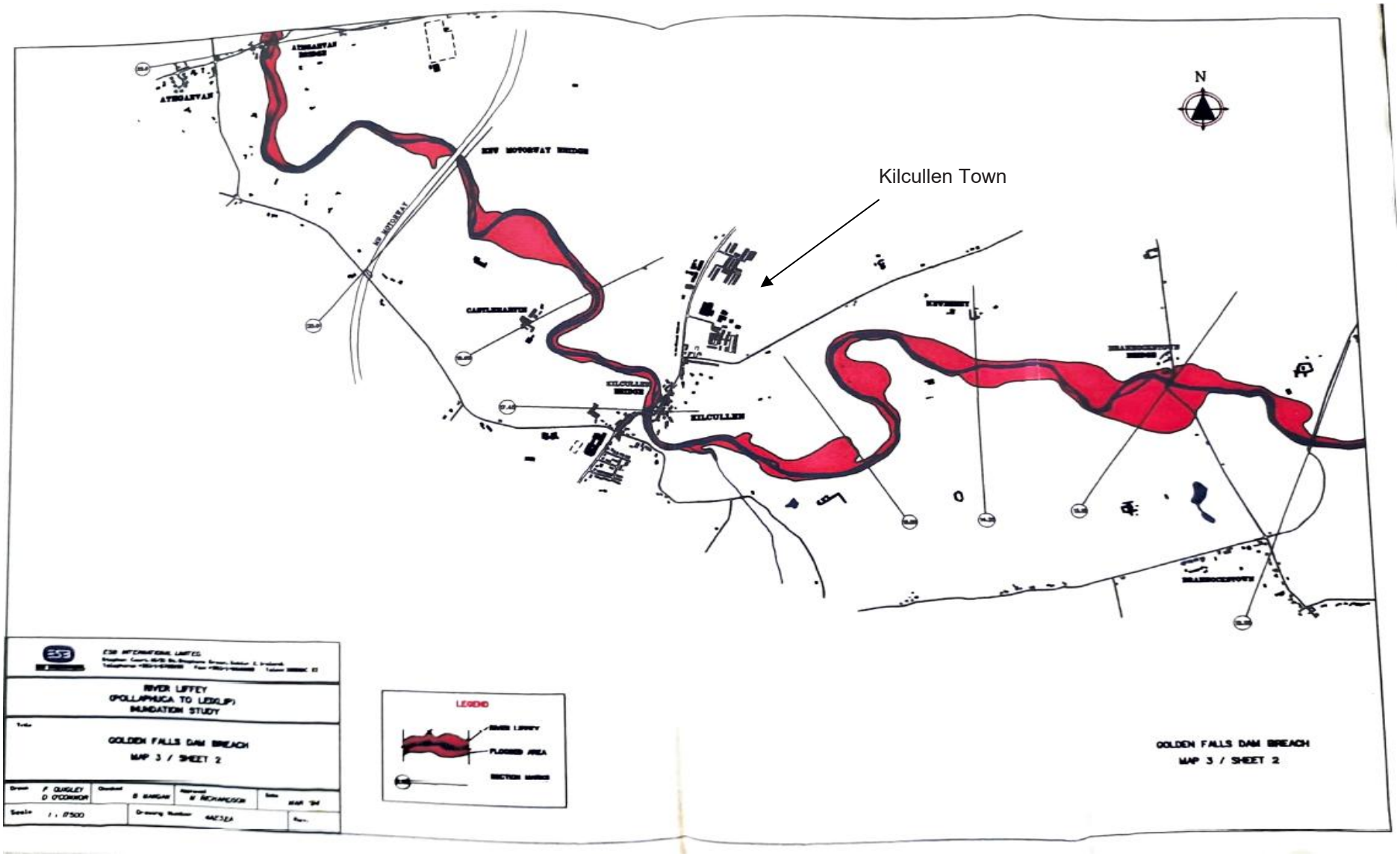



**Figure 7-3 Flood caused by Golden Falls Dam Breach at Kilcullen town (using DAMBRK model)**

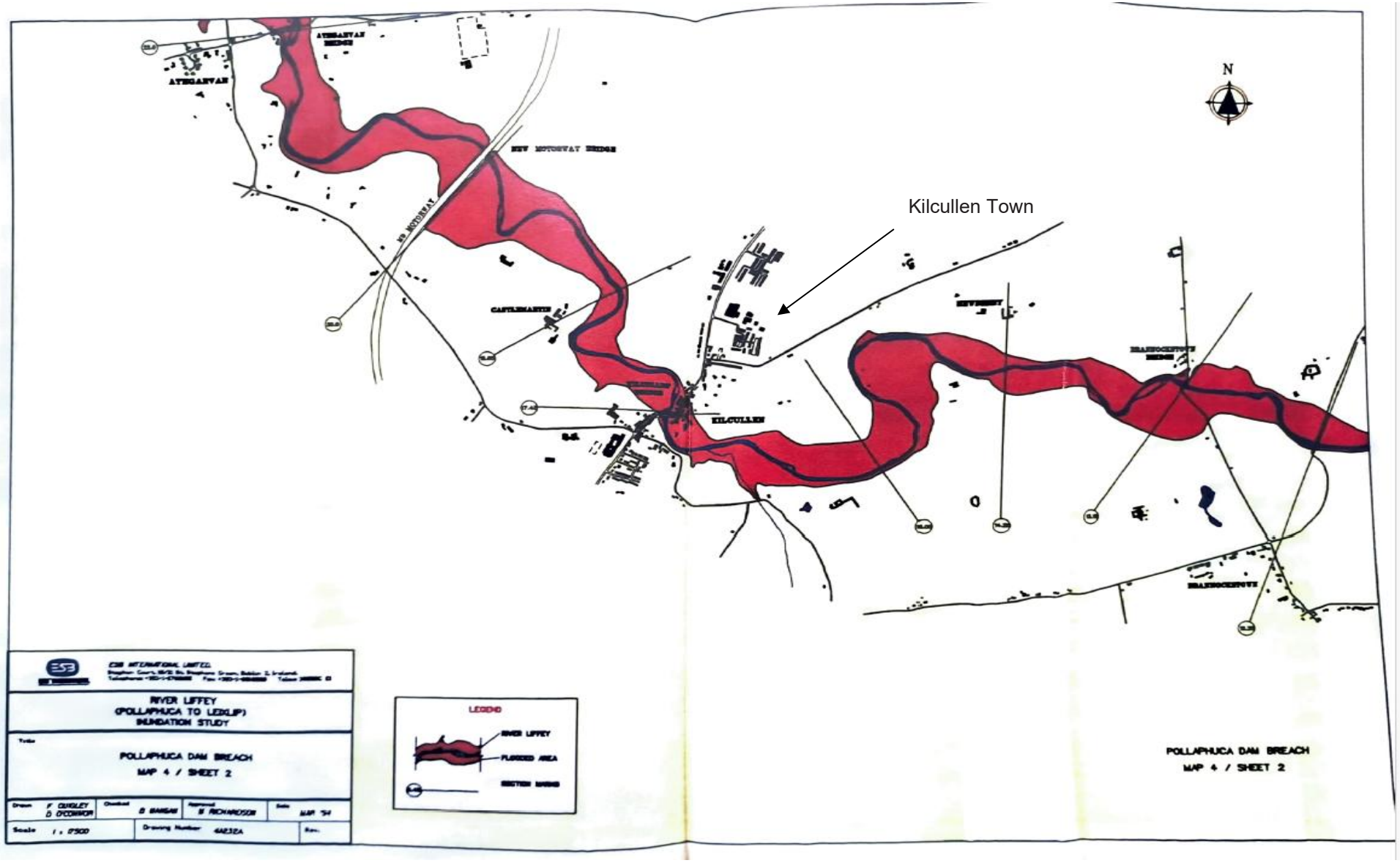
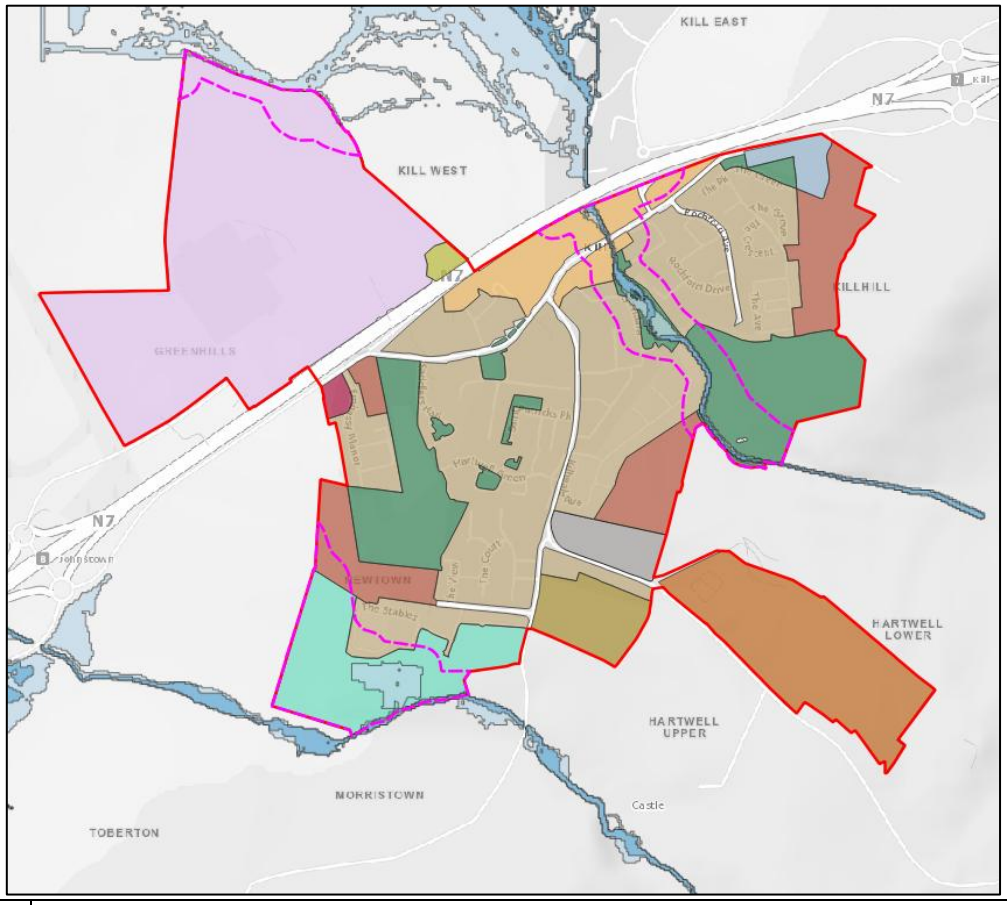



**Figure 7-4 Flood caused by Poulaphouca Dam Breach at Kilcullen town (using DAMBRK model)**

## Kill

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| **Flood Risk Review** | Historical Flooding<br>Historical flooding along the N7 where the Kill River courses underneath the N7. The town also has had some historical pluvial issues.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones for Kill shows very little flood risk however there is some limited flooding in the town centre for Flood Zones A and B as well as at the Equestrian Centre for Flood Zone B. The flooding at the Equestrian centre is primarily contained to equestrian arenas.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Kill. The town slopes northwest towards the N7. It lies at the foot of higher ground to the east of the town. New zonings in this area should be cognisant of potential surface runoff.<br><br>Climate Change<br>The CFRAM climate change mapping shows an increase in flood extents within the town centre and also at the Kill International Equestrian Centre. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess the existing and proposed Town Centre zoning as there is some limited residential areas at risk in Flood Zones A and B. The Development Plan Justification Test also applies to the Equestrian Zoning in the south west of the town as it lies in Flood Zone B.<br>A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing and proposed zonings. The Justification Test is included in **Appendix C**. The Town Centre zoning has been retained but residential development will be subject a SSFRA with development being avoided in the flood zones. The Equestrian zoning has also been retained. The equestrian centre is not currently in use however the zoning does allow for |

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| | a limited self-catering accommodation, therefore any development that would include highly vulnerable mixed uses shall be subject a SSFRA.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. The extent of the FRA requirement area has been expanded to account for climate change scenarios that could impact on the settlement in the future. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Prosperous

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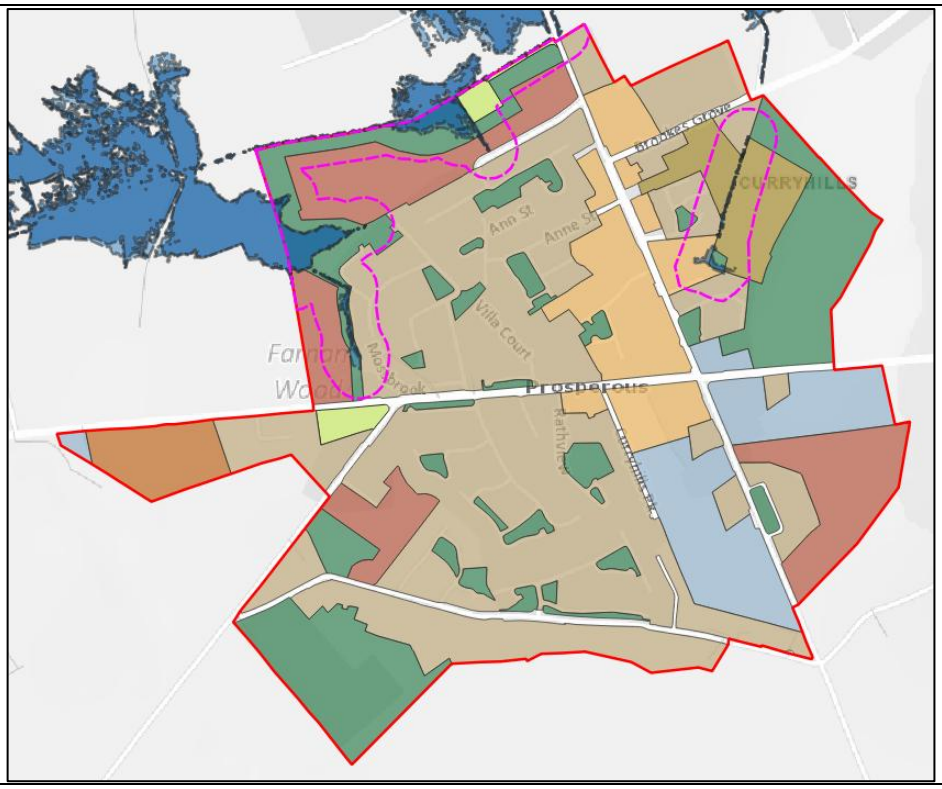
| |  |
| **Flood Risk Review** | Historical Flooding<br>Flooding in Barrington Court Estate and along Curryhill Park Road in 2018 after heavy rain and the surface water system was at capacity. Also records of periodic flooding to a single property on the R403 towards Clane. The Curryhills public park also prone to be periodic flood during heavy rainfall events.<br><br>Fluvial Flooding<br>The indicative mapping does not highlight any significant flooding in the existing residential areas of the town however it does show flooding towards the north of the town in agricultural land, low lying areas and in the Ballynafanagh Bog land. The surface water drainage network has altered the historical drainage ditch flow paths through the town. This local surface water network has not been modelled and there are limitations within the flood mapping.<br><br>Pluvial Flooding<br>There is historical pluvial flooding in the town centre. KCC have carried out some improvement works to the local drainage infrastructure. The PFRA mapping does not highlight any significant pluvial extents in Prosperous. The town slopes westwards and generally is quite flat expect for a raised ground in the east of the town in Curryhills.<br><br>Climate Change<br>The indicative mapping indicates that areas in northern parts of the town show an increase in flood extents. |
| **Conclusion** | The sequential approach has been followed and KCC have assigned water compatible zonings to open space areas that overlap with Flood Zones A and B. There is some minor predicted flooding on lands zoned for development. However, the predicted flooding is confined to undeveloped land and along the centreline of drainage ditches. A Justification Test was undertaken for these areas and the land use zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA which shall ensure the sequential approach is followed at site-specific level and also development is not permitted in flood zones. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to |

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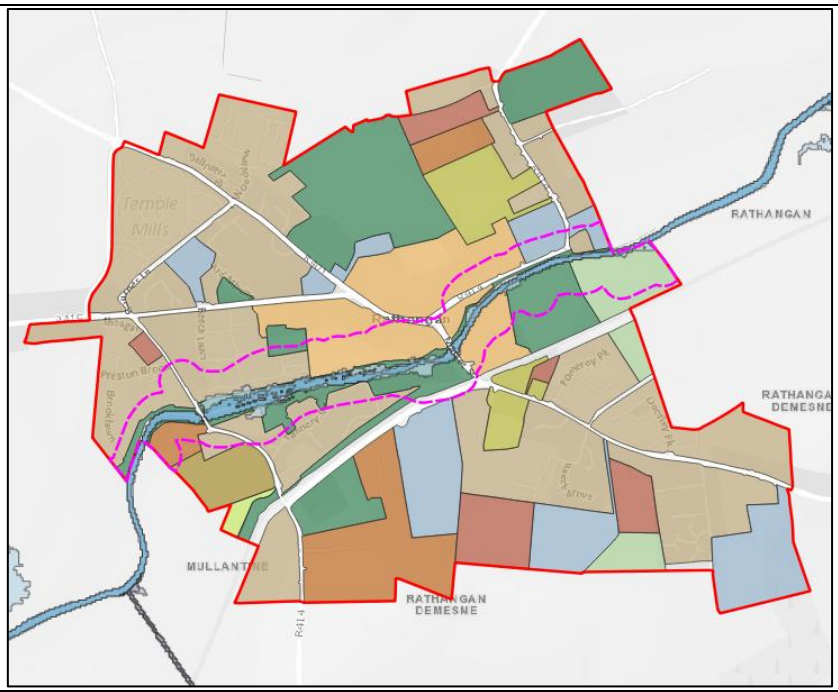
| | vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

**Rathangan**

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| **Flood Risk Review** | Historical Flooding<br>Surface water flooding to a property in St. Patricks Park recorded in 2014. Surface water flooding recorded by KCC at various locations along the road network in Rathangan including Millbrook Road, R414 at the Rathangan Industrial Estate and the junction of R401 and Bournes Lane. There is also yearly flooding along the banks of the River Slate in rural areas to the north east of the town.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones shows very little flood risk however there is some limited flooding along the river banks.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Rathangan. The town areas slope towards the Slate River.<br><br>Climate Change<br>The CFRAM climate change mapping shows an increase in extents adjacent to the river banks with some potential for flooding along Chapel Street. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess the Existing Residential, Town Centre and Agricultural zonings as there is some limited areas at risk in Flood Zone B. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zoning. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

### 7.1.5 Villages

**Allenwood**

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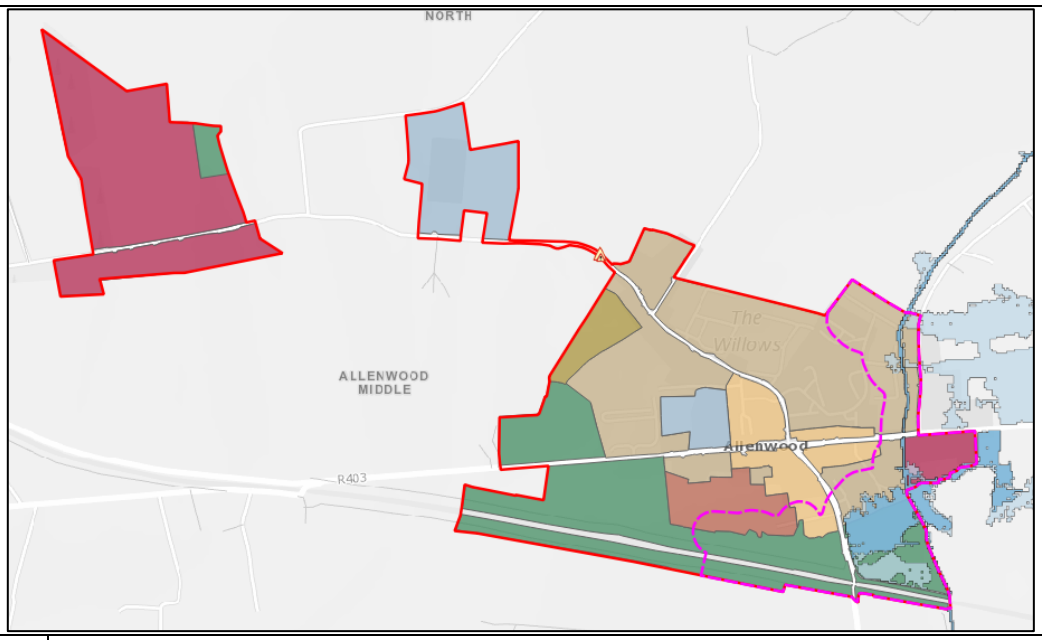
|  | |
| **Flood Risk Review** | <u>Historical Flooding</u><br>There are some historical surface water problems along the L1020 towards the Allenwood Industrial Park.<br><br><u>Fluvial Flooding</u><br>A review of the CFRAM flood zones in Allenwood highlighted lands existing residential areas in the south of the town (Derrymullen) but also in the Woodlawn estate and Bluetown area which are located within flood zones. There is also some limited flooding in the rear of the Allenwood tyre centre.<br><br><u>Pluvial Flooding</u><br>The western area of the town in Allenwood Middle, which is zoned as SS – Serviced Sites , is highlighted in the PFRA mapping as being at risk from the 1% AEP pluvial extent.<br><br><u>Climate Change</u><br>The CFRAM climate change mapping indicates that there is potential for increases in flood risk in the Derrymullen area, Woodlawn estate and the Bluetown area. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess the Existing Residential and Enterprise and Employment zonings for the areas located within the flood zones. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. The extent of the FRA requirement area has been expanded to account for climate change scenarios that could impact on the settlement in the future. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications (including applications for the proposed Service Site zoning at Allenwood Middle where 1% AEP pluvial risk was identified) are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Athgarvan

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| **Flood Risk Review** | Historical Flooding<br>The banks of the River Liffey flooded in 1954 which was a flood event that impacted many towns downstream of Athgarvan. Periodic recurring road flooding after heavy rain noted at Kinneagh Cross Roads and at low lying spots along the L2032 (towards the Curragh). KCC have also noted that there is ongoing surface water flooding along the R413 adjacent the Athgarvan National School.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones in this area indicates the village is not at risk from fluvial flooding associated with the Liffey. The areas within the Flood Zones A and B are zoned for water compatible uses.<br><br>Pluvial Flooding<br>The village slopes eastwards towards the River Liffey. There are low-lying areas to the west and north of the main cross roads in the village. This is highlighted in the PFRA mapping which indicates a 1% AEP pluvial extent in these areas.<br><br>Climate Change<br>The CFRAM mapping does not indicate any areas within the village are at risk from the climate change flooding scenarios. |
| **Conclusion** | Justification Test is not required in this area. The CFRAM current and climate change fluvial flood mapping scenarios do not indicate the village is not at risk from fluvial flooding associated with the River Liffey. The water compatible zones adjacent to the River Liffey should be maintained to avoid vulnerable development in this area. The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type.<br><br>The indicative pluvial assessment indicated that the areas adjacent to the village centre may be liable to pluvial flooding. In order to reduce surface water run-off and to minimise the risk of pluvial flooding, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan. |

## Ballitore

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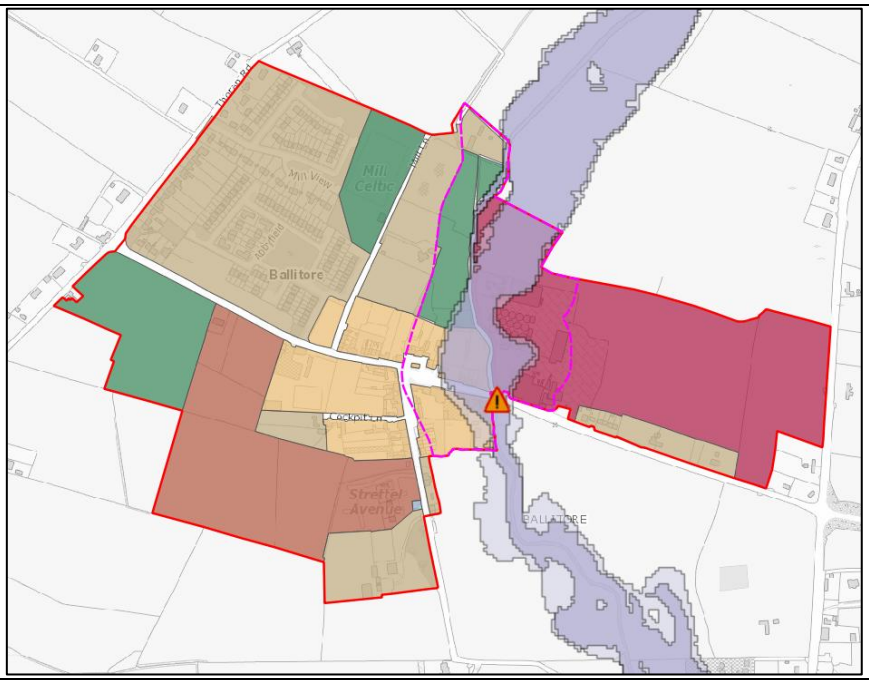
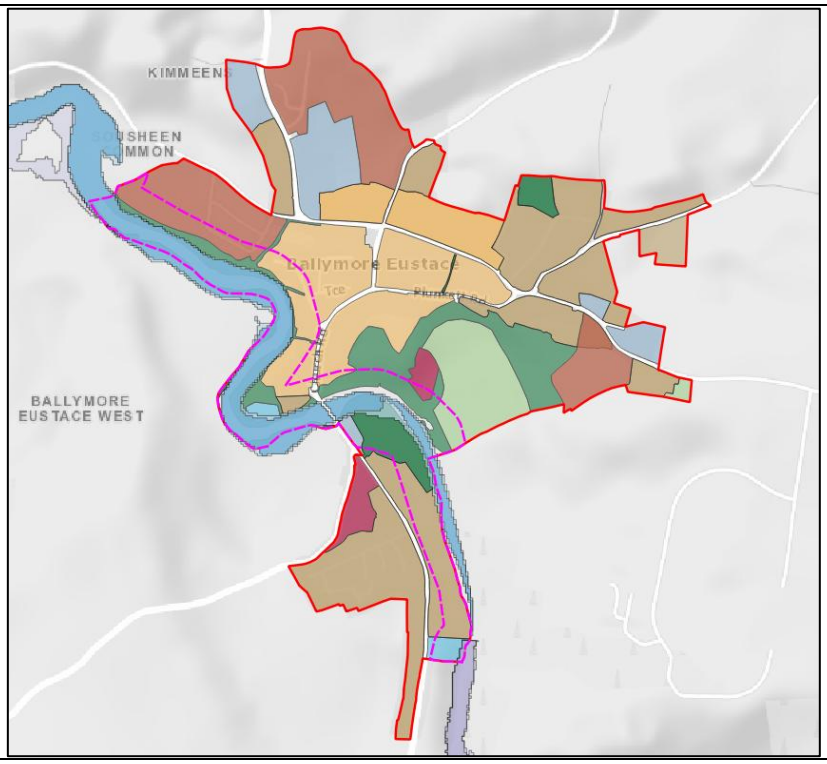
|  | |
| **Flood Risk Review** | Historical Flooding<br>Historical flooding records indicate high water levels adjacent to the bridge crossing on the main street.<br><br>Fluvial Flooding<br>A review of the NIFM flood extents in this area highlighted lands either side of the Greese River which overlap with flood extents. The sites on either side of the river adjacent to the bridge have previously been subject to FRAs and been approved by KCC. These FRAs indicated that the developments were above the 1% AEP flood levels therefore additional flood modelling was not identified as critical in this area.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Ballitore. The town slopes towards the Greese River.<br><br>Climate Change<br>The NIFM mapping indicates that areas to north east of the town show an increase in climate change flood extents but these are located outside the planning boundary. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess existing zonings adjacent to the Greese River in the town. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**. The sites on either side of the river adjacent to the bridge have previously been subject to FRAs and been approved by KCC. Further development proposals for the lands shall be the subject of a site specific Flood Risk Assessment appropriate to the type and scale of the development being proposed.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Ballymore Eustace

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| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones shows no flood risk to the urban areas. There is some minor flooding to an existing residential zoning which is limited to an open space area within the zoning. There is also some minor flooding to the pumping station site for the Ballymore Eustace Sewerage Scheme. All other areas of flood risk are zoned for water compatible uses.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Ballymore Eustace. It does highlight some pluvial flooding in the Sousheen Common. The town is built on a steep area of ground sloping west towards the River Liffey. Pluvial flooding may be a concern for the proposed zoning at Sousheen Common.<br><br>Climate Change<br>The CFRAM climate change mapping does not indicate any increase of flood risk to the urban areas of Ballymore Eustace. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess some of existing zonings adjacent to the River Liffey. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Caragh

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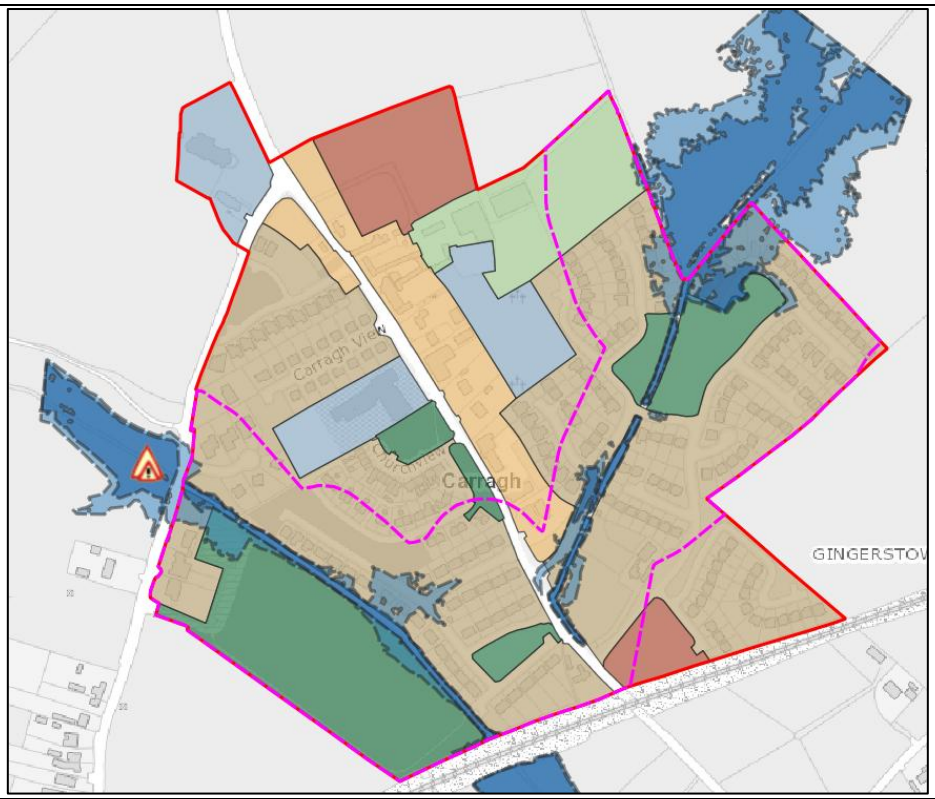
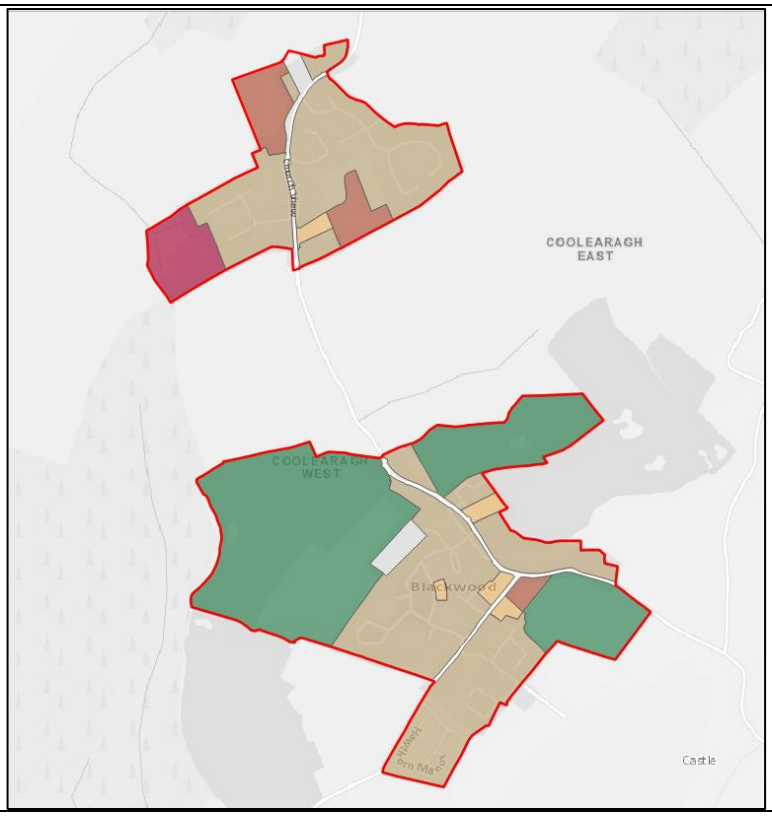
| |  |
| **Flood Risk Review** | Historical Flooding<br>The Awillyinish Stream historically has overtopped its banks following high rainfall events with recurring flooding at the bridge on the Caragh View Road. KCC also reported road flooding in townlands near Caragh including Raheens, Stickins and Castlekeeley.<br><br>Fluvial Flooding<br>The indicative mapping does highlight potential flooding in the existing residential areas in Old Chapel Grove and The Streams. There is also some flooding to the agricultural zoning in the north of the village boundary. The tributary of the Awillyinish Stream flowing from the North East enters a culvert at the Naas Road joining the main section of Awillyinish Stream adjacent to the railway. There is uncertainty surrounding the flood extents in this area due to the indicative nature of the mapping. The fluvial mapping in Caragh is confined to the extent of the LiDAR and appears to be truncated. As there are no land zonings upstream or downstream no further modelling was required.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Caragh. The town generally slopes east towards the River Liffey.<br><br>Climate Change<br>The indicative climate change mapping indicates that residential areas (Chapel Grove, The Streams) and along the local stream show an increase in flood extents. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess the existing zonings adjacent to the Awillyinish Stream and its tributaries. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Coill Dubh / Coolearagh

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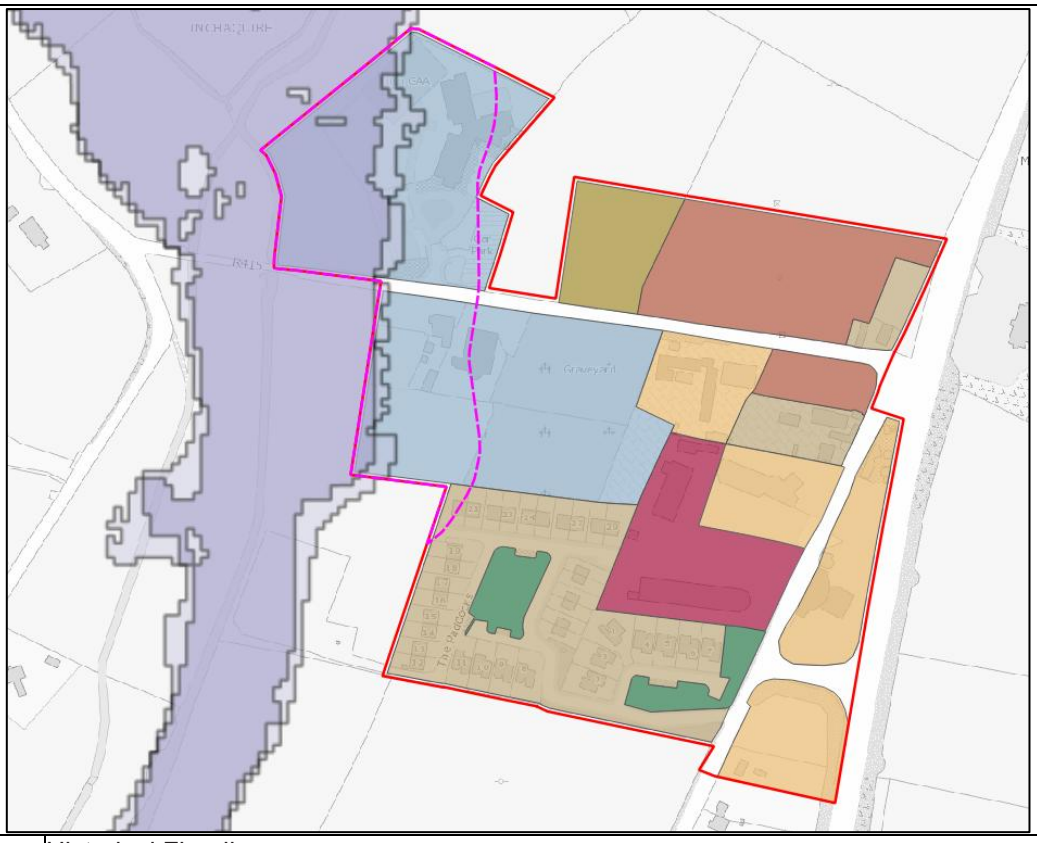
| **Flood Risk Review** | Historical Flooding<br>KCC reported that there is periodic road flooding in Coill Dubh due to undersized road drainage network.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. The lands in the Coill Dubh/ Coolearagh area are very flat and slope very gently towards the Slate River.<br><br>Climate Change<br>The climate change mapping does not indicate any future fluvial risk in this area. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Crookstown

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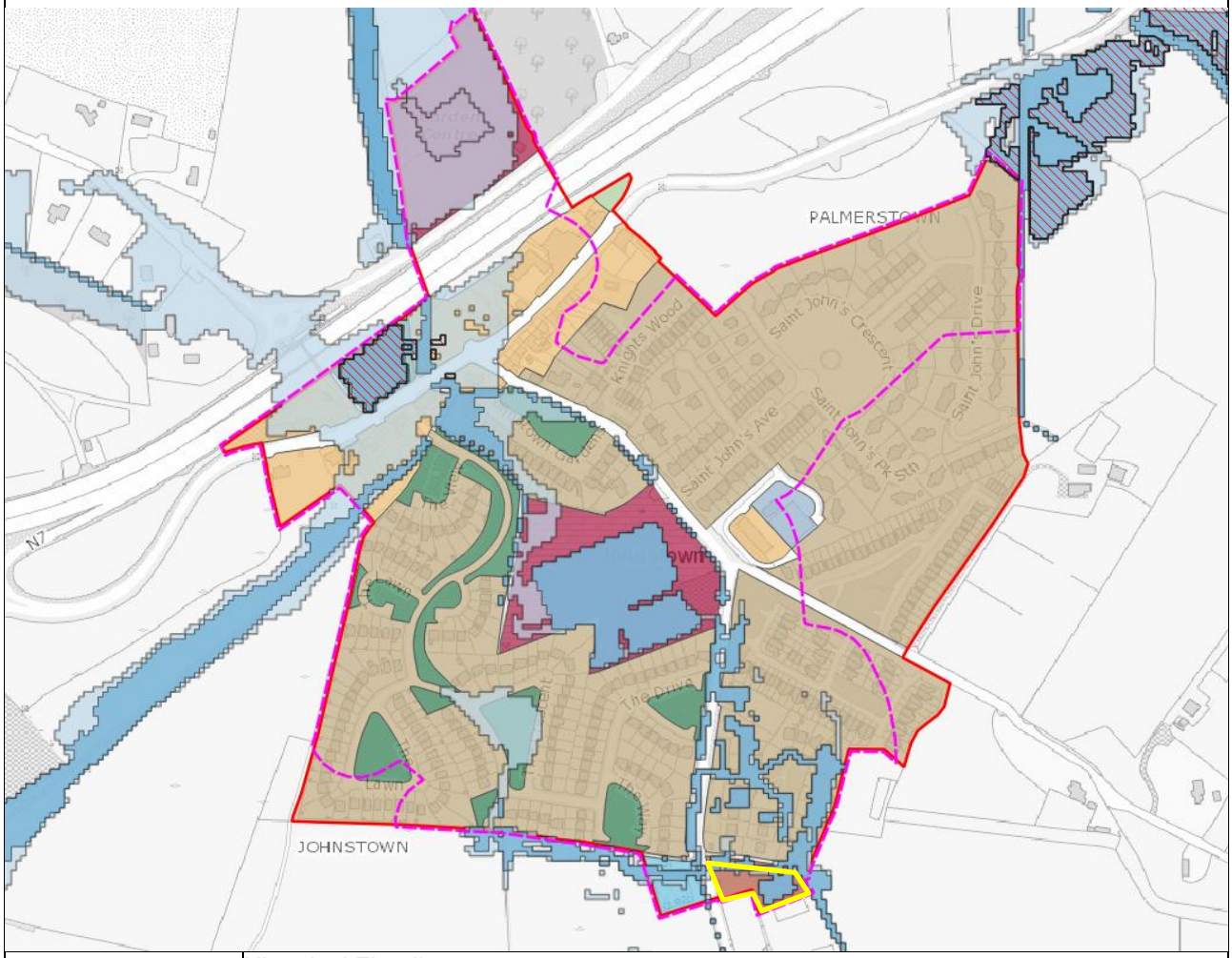
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>A review of the NIFM flood extents in this area highlighted lands which are subject to an E zoning objective (Community & Education Zoning) which is classified as highly vulnerable development, overlaps with Flood Zone A extents. A SSFRA for local school was submitted in support of its planning application. The FRA delineated flood zones for the site and carried out a surface drainage assessment. The site was developed in accordance with the recommendations of the FRA. The FRA indicated that the developments were above the 1% AEP flood levels therefore additional flood modelling was not identified as critical in this area. Flooding shown within the grounds of the local church is contained within a green area.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Crookstown. The town slopes towards the Greese River.<br><br>Climate Change<br>The NIFM mapping does not any highlight significant increase in flood extents that impact the remainder of the village. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess the existing Community and Educational zoning adjacent to the Greese River in the town. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zoning. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Johnstown

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| **Flood Risk Review** | Historical Flooding<br>Johnstown has been subject to fluvial flooding in the past. This led to a flood relief scheme being constructed in the village.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones in Johnstown highlighted several areas which have zonings within flood risk areas. These include vulnerable zonings which require a justification test to validate the appropriateness of the zoning.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. The town slopes northwest towards the N7. It lies at the foot of higher ground to the east of the town. New zonings in this area should be cognisant of potential surface runoff.<br><br>Climate Change<br>The CFRAM indicates that Johnstown is particularly sensitive to increases in flood extents due to climate change scenarios. There is potential for flooding in several residential areas not currently within the flooding extents. |
| **Conclusion** | Based on the criteria in the Guidelines, the Development Plan Justification Test is required to assess the appropriateness of several existing zoning types. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. Any future development in the flood risk areas will be subject to SSFRAs. This will ensure the sequential approach is followed at site-specific level and also inappropriate development is not permitted in flood zones. The Justification Test is included in **Appendix C**. |

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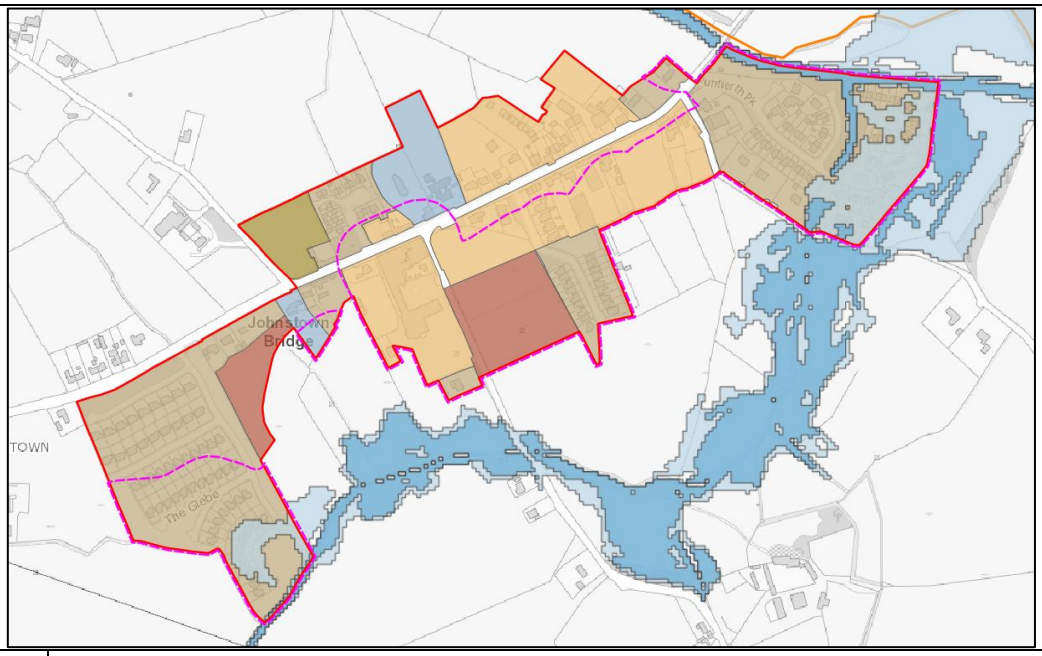
| | The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. The extent of the FRA requirement area has been expanded to account for climate change scenarios that could impact on the settlement in the future. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. FRAs for planning applications in Johnstown must examine and consider the climate change flooding extents. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br>A site-specific Flood Risk Assessment (FRA) shall be required as part of any development proposal with respect to lands zoned 'C' to the south of Johnstown identified in the yellow boundary identified above. This FRA shall clearly demonstrate that there shall be no adverse flood risk impacts arising from any development of the subject lands' |

## Johnstownbridge

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| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones in Johnstownbridge highlighted lands subject to a B zoning objective (Existing Residential/Infill), which is classified as highly vulnerable development, overlaps with Flood Zone B extents.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. The area is quite flat and gently slopes towards the River Blackwater and Fear English River.<br><br>Climate Change<br>The CFRAM indicates that Johnstownbridge is particularly sensitive to increases in flood extents due to climate change scenarios. There is potential for flooding in several residential areas not currently within the flooding extents in particular during the HEFS climate change scenario as shown in the image below. |

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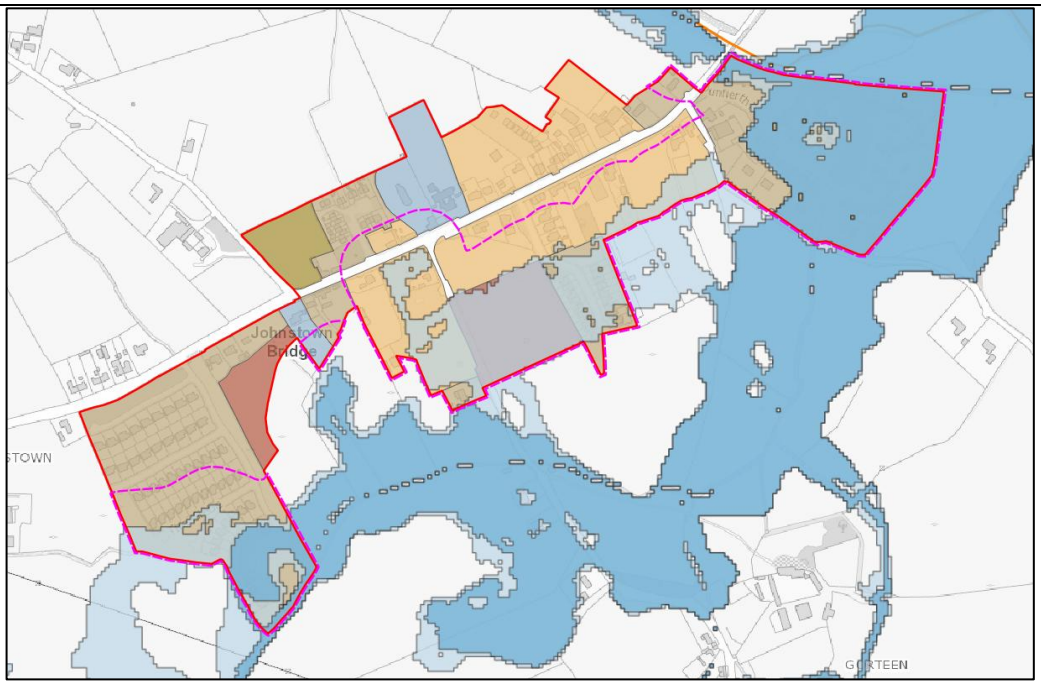
| |  |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the zonings in the Glebe and Dunfierth Park were still suitable.<br>As discussed in Section 3.4, the Guidelines recommend adopting “a cautious approach” to zoning lands potentially impacted by climate change flooding extents. Therefore, this SFRA recommends that the lands at Gorteen potentially impacted by climate change flooding extents should be zoned as a water compatible land use to mitigate against potential flood risk. However the KCC CDP is proposing that the site be zoned as ‘New Residential’ and specifies that the climate change flooding scenario be examined in a SSFRA at planning application stage. The SSFRA will assess the flooding risk and see if development on the site is achievable A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. The extent of the FRA requirement area has been expanded to account for climate change scenarios that could impact on the settlement in the future. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. FRAs for planning applications in Johnstownbridge must examine and consider the climate change flooding extents. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Kildangan

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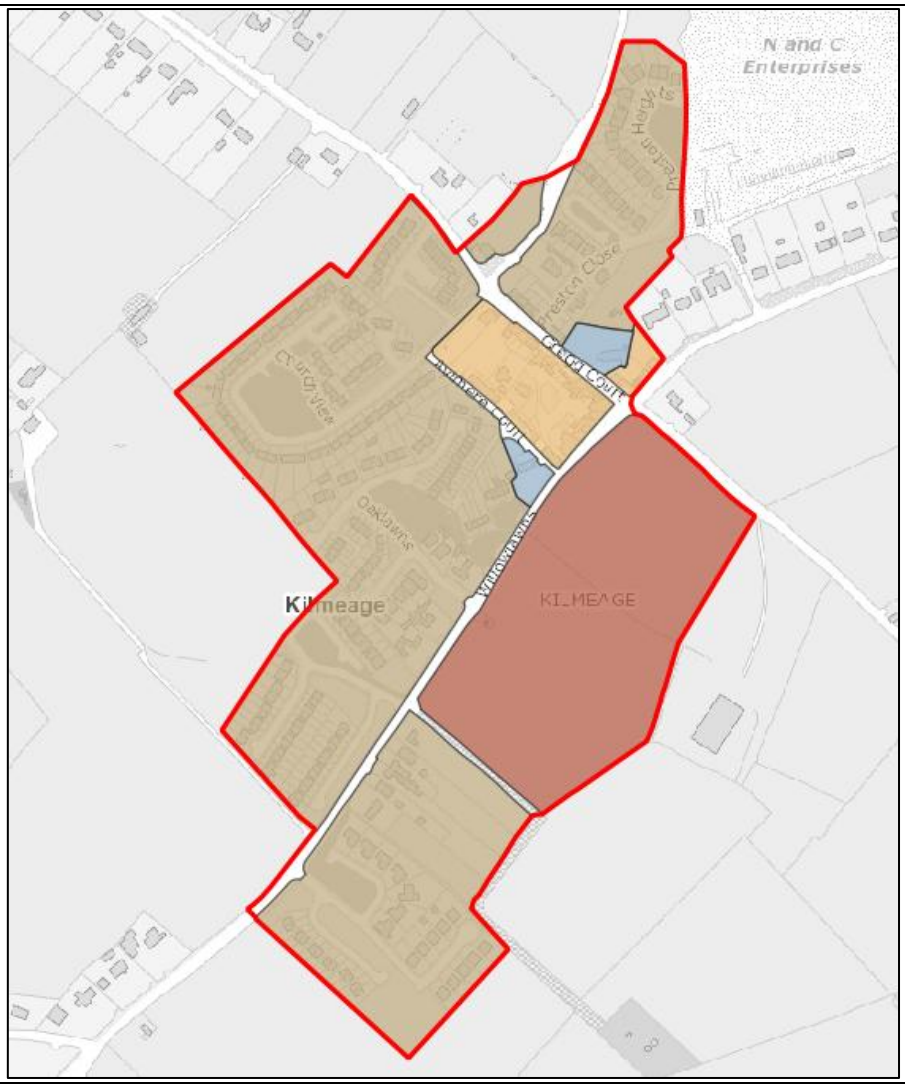
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The indicative mapping does highlight potential flooding to several existing residential areas however the majority of the flooding is contained within green areas. There is also potential flooding to the local community centre site.<br><br>Pluvial Flooding<br>The PFRA mapping highlights a 1% AEP extent in the Kilbeg area adjacent to the railway. FRAs in this area should be cognisant of potential surface water and drainage issues.<br><br>Climate Change<br>The indicative mapping indicates that areas in the north west of the village show an increase in flood extents. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the Existing Residential and Community zonings were still suitable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Kilmeague

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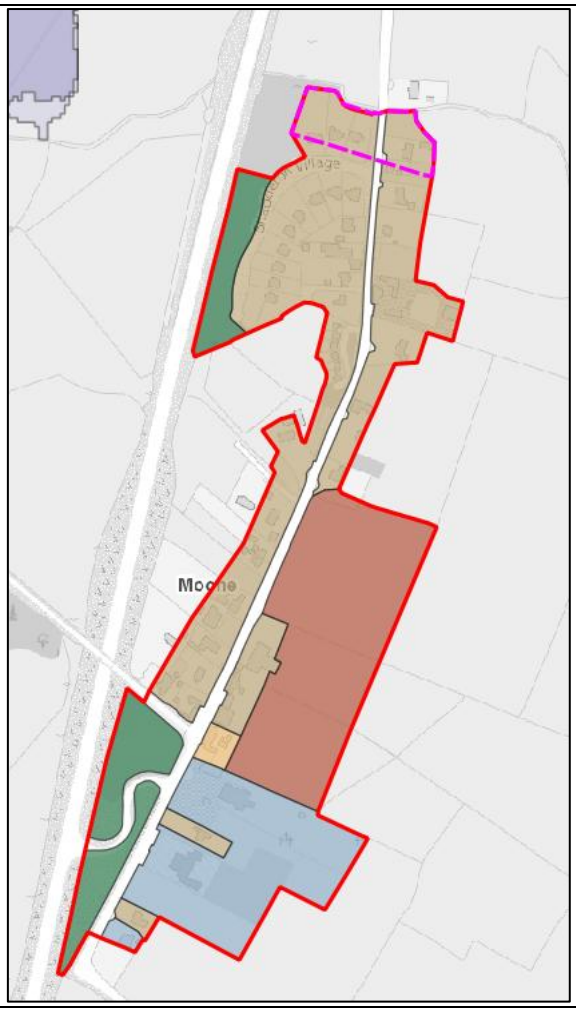
| **Flood Risk Review** | Historical Flooding<br>KCC reported rainfall runoff can cause flooding in undersized drainage pipes along the main street. KCC also reported that the drainage infrastructure in area outfalls to a soakaway and during heavy rainfall events there can flooding adjacent to soakaway as it does not have an overflow.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. The village is built on a steep area of ground sloping south west towards the village of Allen. Pluvial flooding may be a concern for the proposed zonings in the south of the village.<br><br>Climate Change<br>The climate change mapping does not indicate any future fluvial risk in this area. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Moone

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| **Flood Risk Review** | Historical Flooding<br>Historical flooding adjacent to the bridge in the north of the village.<br><br>Fluvial Flooding<br>A review of the NIFM flood extents didn't highlight any flooding in this area, however the OPW PFRA study flood zones highlighted lands in the north the village which have a potential flood risk. The flood risk area is located outside the boundary of the village.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Moone. The village is built on a steep area of ground sloping north towards the village of Timolin.<br><br>Climate Change<br>The PFRA mapping does not highlight an significant increase in climate change flood extents. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. However due to the presence of the stream in the north of the village where it has been noted that historical flooding has occurred, lands adjacent to this stream shall be required to undertake an FRA. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type.<br><br>All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Narraghmore

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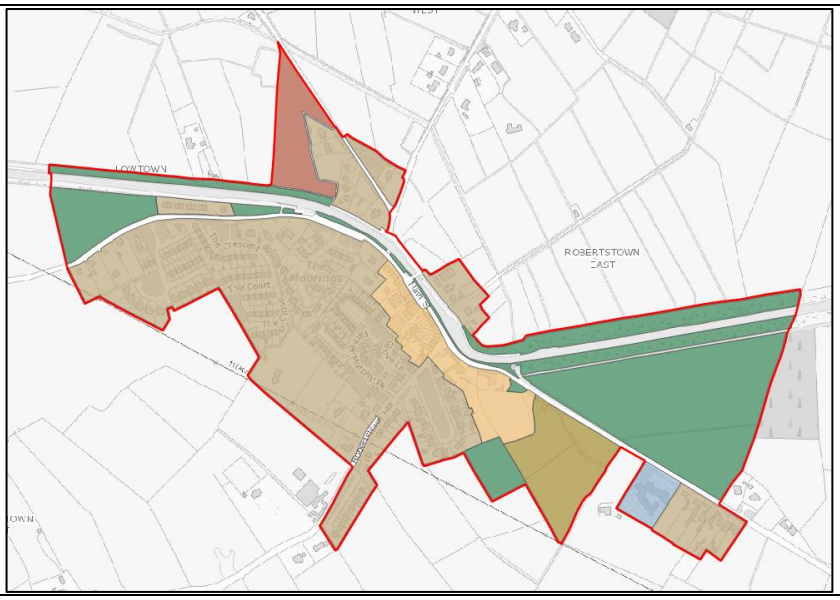
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Narraghmore. The village generally slopes east towards the M9 Motorway.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in this area. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Robertstown

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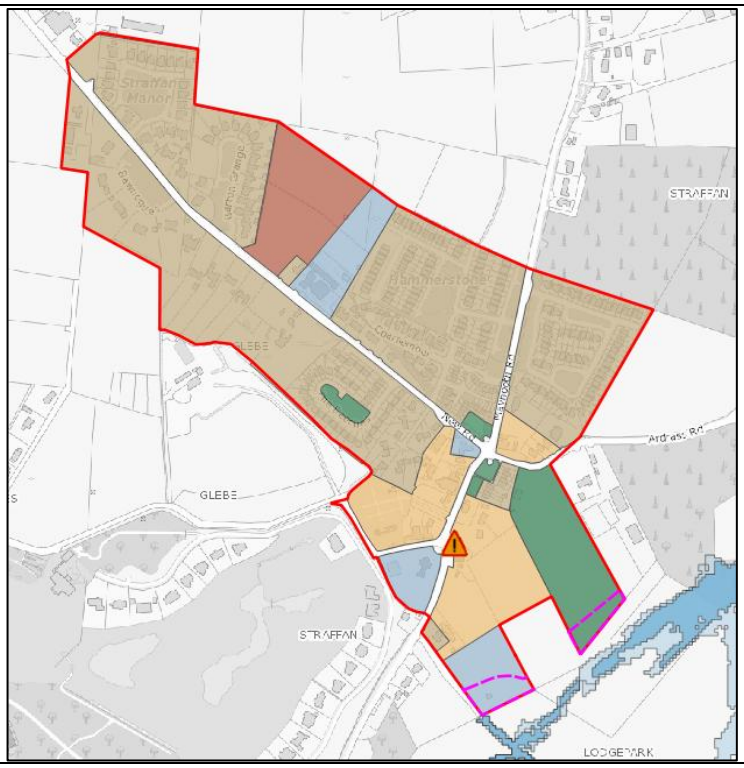
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore, no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights some pluvial extents to the east of the village alongside the canal but the area is not zoned. The village is built on a steep area of ground sloping north west towards the Grand Canal. Pluvial flooding may be a concern for the low lying areas adjacent to the Grand Canal<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. There is potential for increase in flood risk north of the canal so any future expansion of the village boundary should be cognisant of climate change. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Straffan

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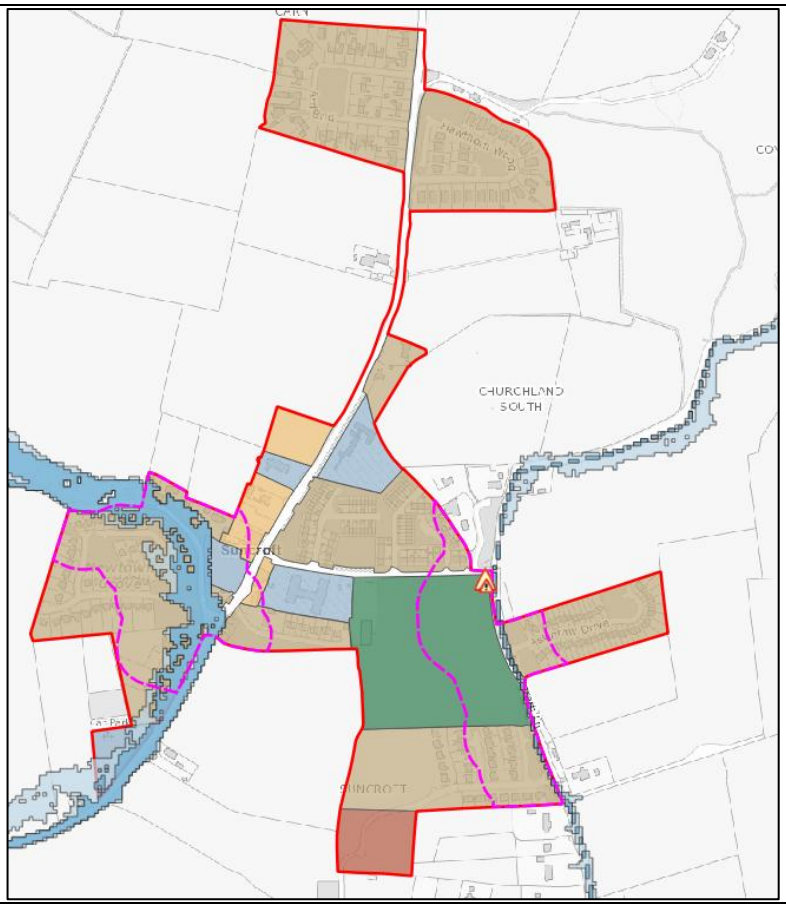
| **Flood Risk Review** | Historical Flooding<br>No historical fluvial flooding reported in the area. KCC indicated that the centre of the village has experienced flooding associated with surface water drainage however works were completed to alleviate those issues.<br><br>Fluvial Flooding<br>The CFRAM mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights some pluvial extents in the north of the village alongside the canal but the area is not zoned. The village is very low lying and generally slopes towards the River Liffey.<br><br>Climate Change<br>The CFRAM mapping does not indicate an increase in flood extents from Flood Zone A to Flood Zone B. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. However due to the presence of the River Liffey adjacent to the lands in the south east, any development in the noted locations on the flood zone mapping shall be required to undertake an FRA. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type.<br><br>All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Suncroft

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| **Flood Risk Review** | Historical Flooding<br>KCC reported instances of surface water flooding at Carna and other locations along the Brownstown Road. The Common North stream can be periodic blocked adjacent the to the at graveyard causing road flooding.<br><br>Fluvial Flooding<br>A review of the CFRAM flood zones in Suncroft highlighted lands subject to a B zoning objective (Existing Residential/Infill) and C (Community & Educational), which is classified as highly vulnerable development, overlaps with Flood Zones A and B.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. The area is quite flat and gently slopes towards the west.<br><br>Climate Change<br>The CFRAM climate change mapping indicates that there is potential increased flood risk to the Newtown Grove housing estate and properties along the L3007. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the Existing Residential and Community zonings were still suitable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Timolin

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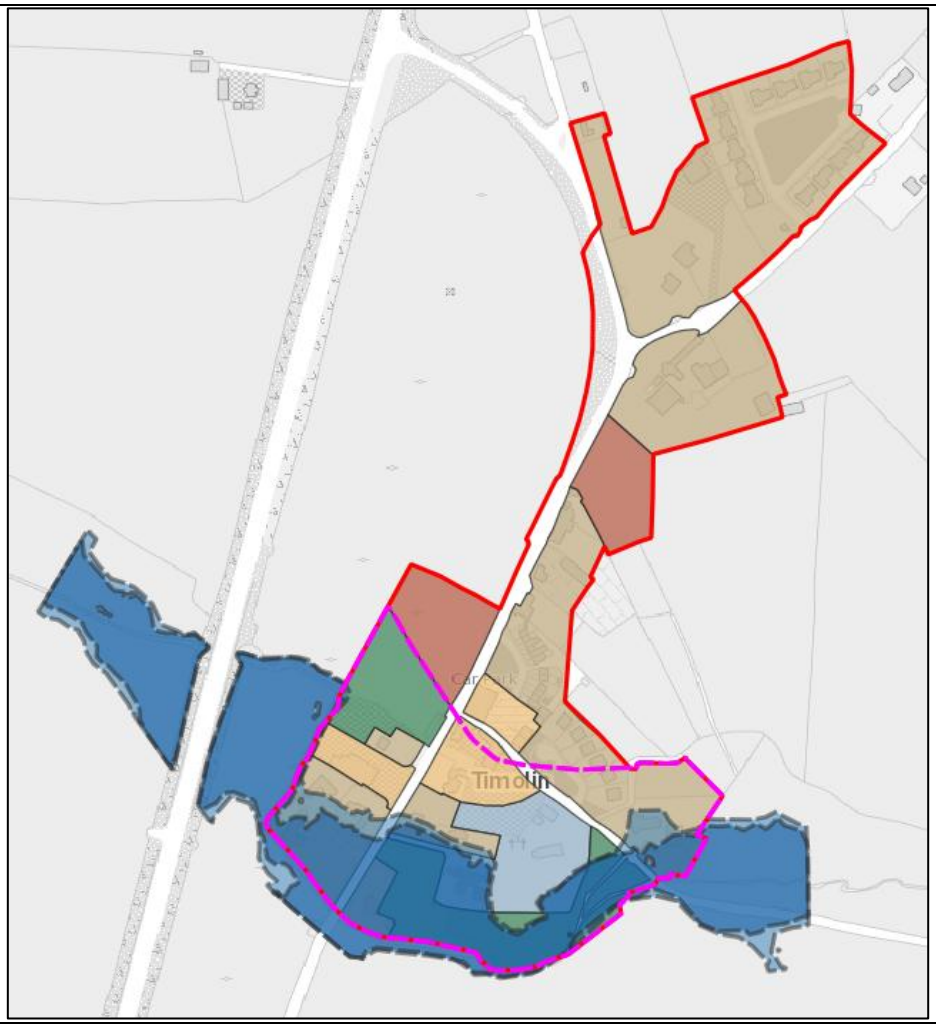
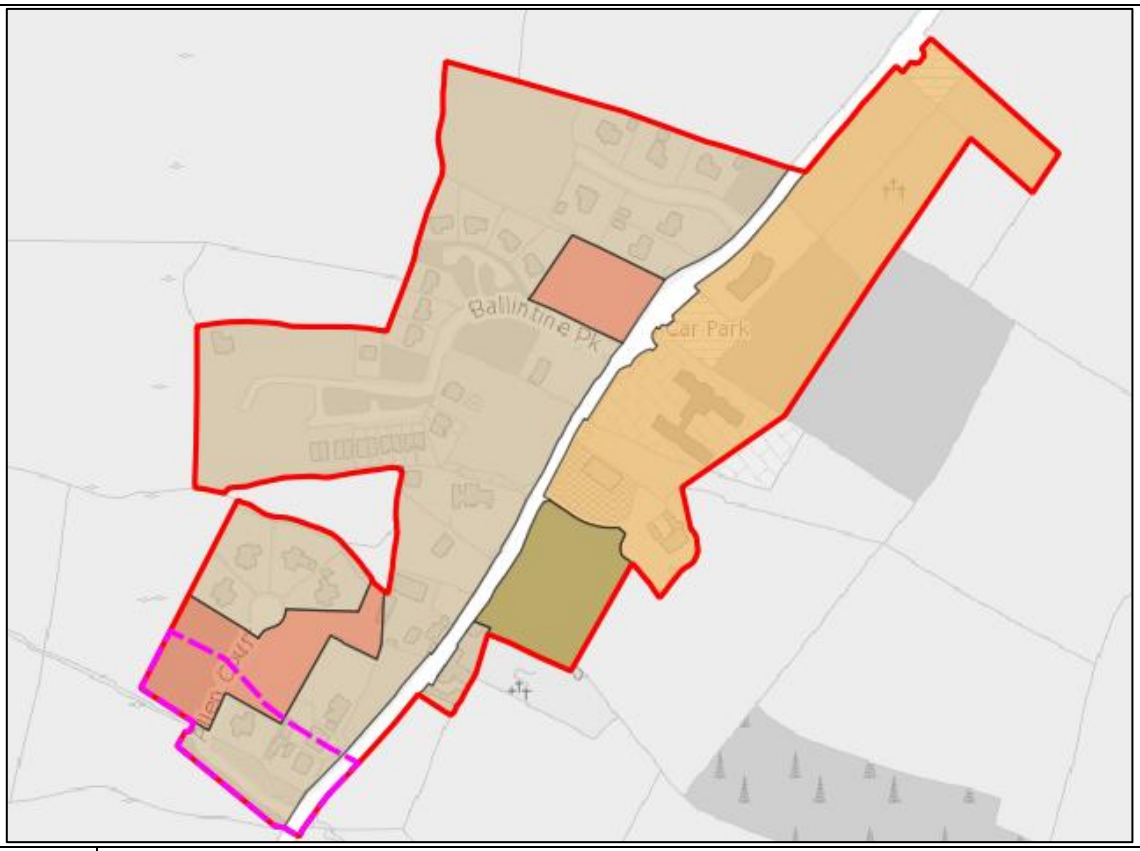
| |  |
| **Flood Risk Review** | Historical Flooding<br>The River Bothoge flows through the village and KCC has reported historical flooding to properties adjacent to the riverbank.<br><br>Fluvial Flooding<br>A review of the indicative flood zones in Timolin highlighted lands subject to A (Town Centre), B (Existing Residential/Infill) and C (Community & Educational) land uses, which are classified as highly vulnerable development, overlaps with Flood Zones A and B.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. The village slopes west towards the Greese River.<br><br>Climate Change<br>The indicative mapping indicates that areas adjacent the river are susceptible to increased flooding from climate change scenarios. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the Town Centre, Existing Residential and Community zonings were still suitable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

### 7.1.6 Rural Settlements

**Allen**

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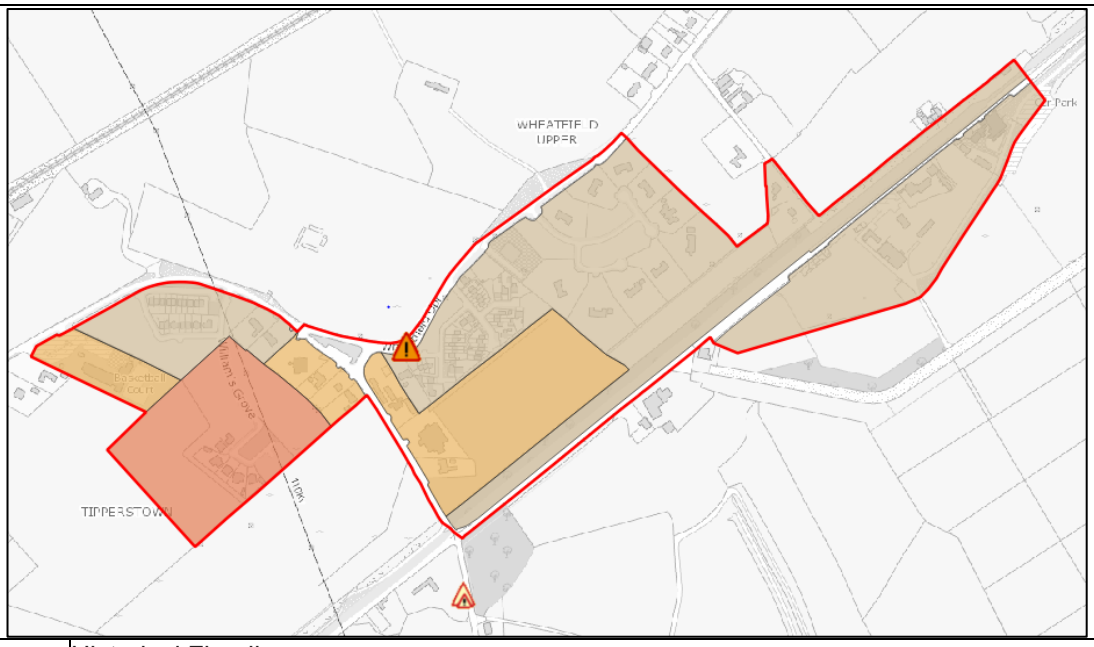
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights some pluvial extents to the south of the village. The village is built on a steep area of ground sloping south west. Pluvial flooding may be a concern for the low lying areas in the south of the settlement<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. However due to the presence of the stream in the south of the village this area has been noted as having a potential for pluvial flooding, lands adjacent to this stream shall be required to undertake an FRA. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type.<br><br>All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Ardclough

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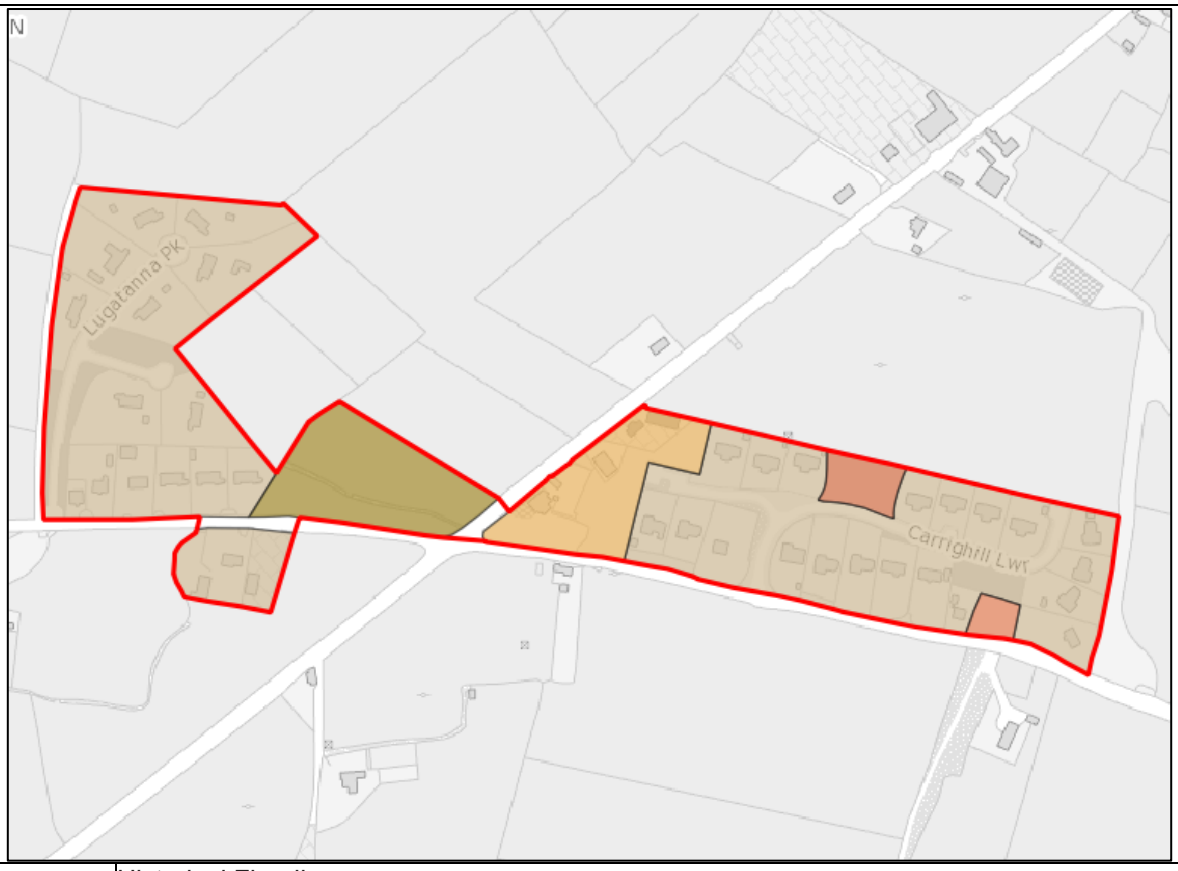
| **Flood Risk Review** | Historical Flooding<br>Ardclough has a history of significant pluvial flooding effecting the town as runoff from higher ground overwhelmed the existing drainage ditches and pipe network. A flood relief scheme was constructed to improve culverts and upgrade the drainage channels.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights clusters of pluvial risk which agreed with historical flooding records.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Ballyshannon

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| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Ballyshannon.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Brannockstown

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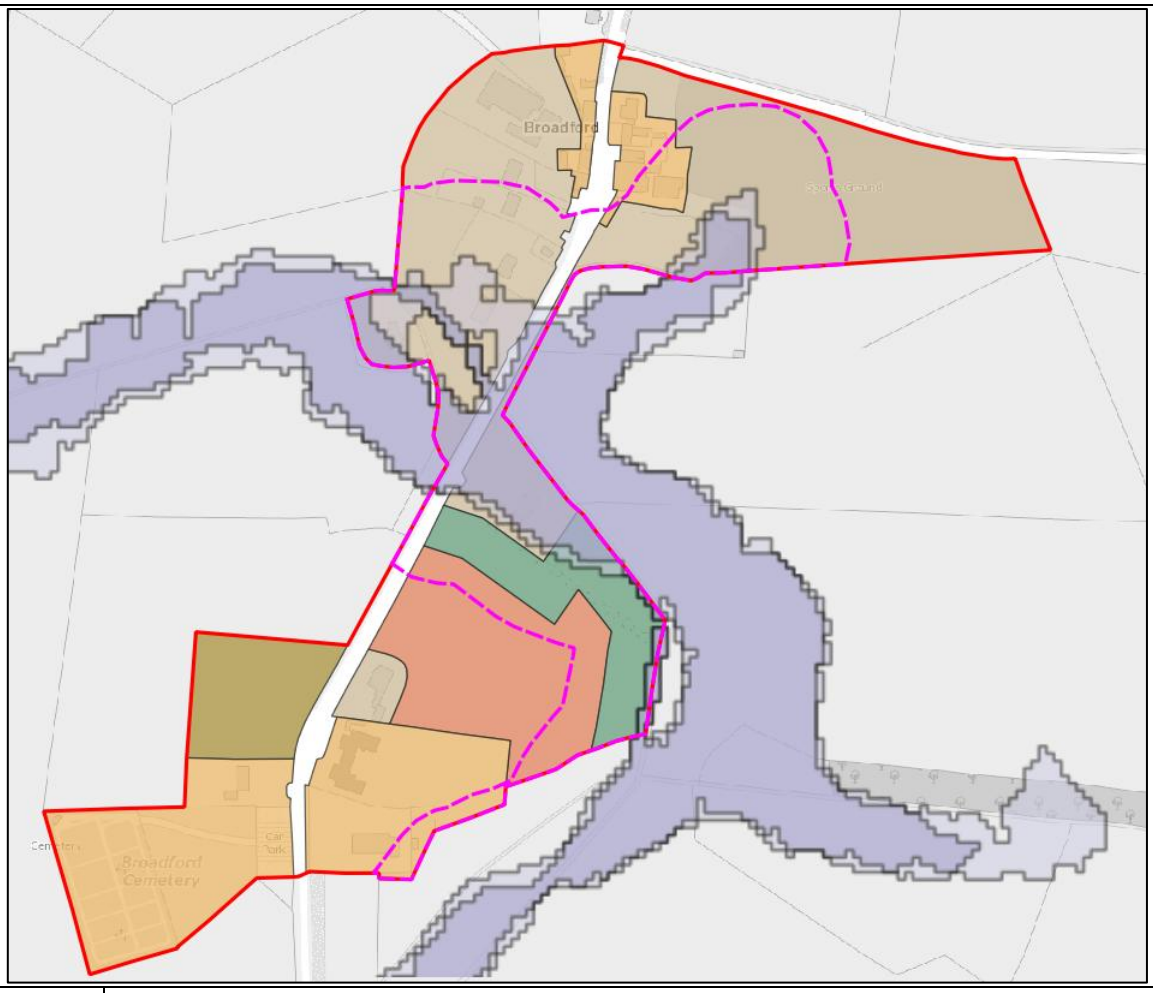
| **Flood Risk Review** | Historical Flooding<br>Some historical pluvial flooding in the centre of the village. KCC has reported localised road flooding in nearby areas along the Ballymore Eustace Road and at Carnalway Cross.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights clusters of pluvial risk which agreed with historical flooding records.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Broadford

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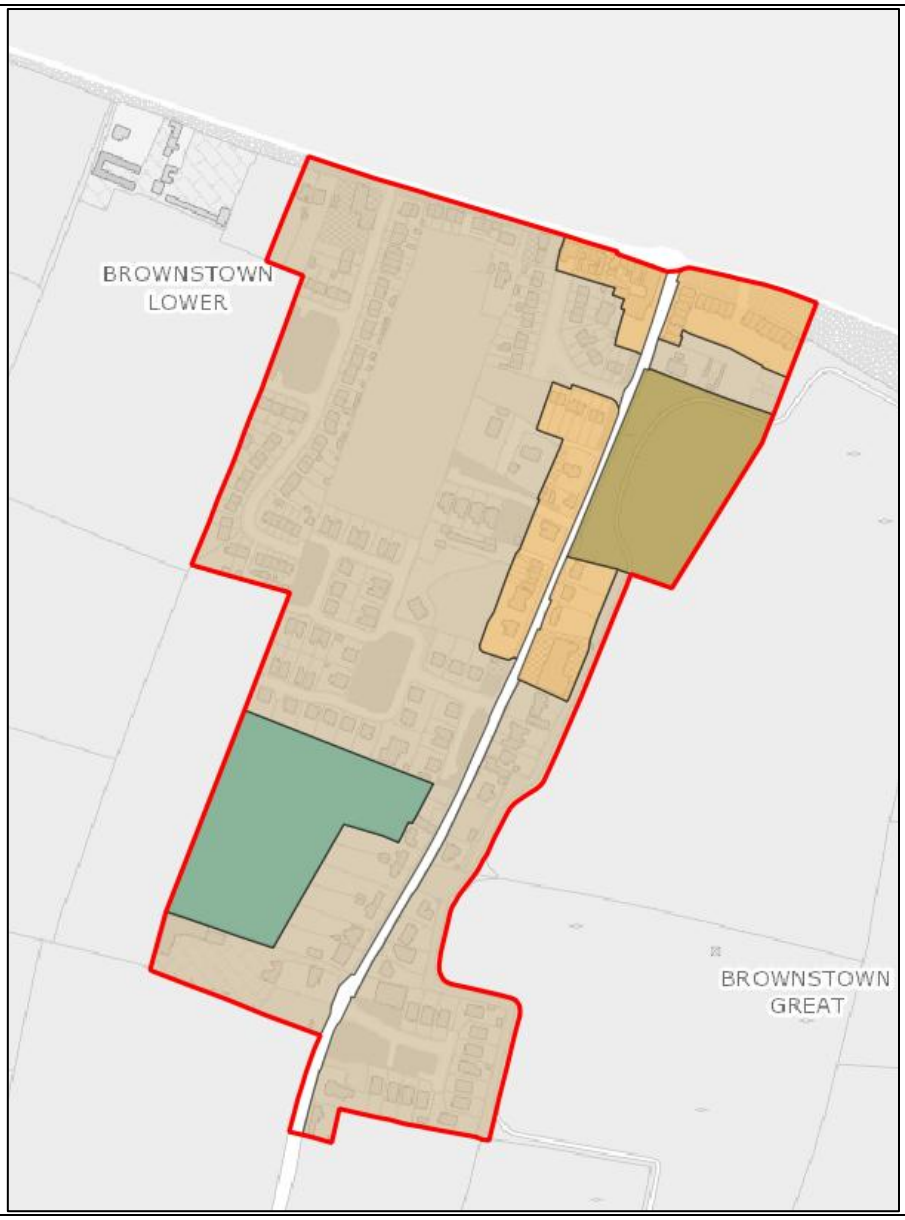
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>A review of the NFIM flood zones in this area highlighted lands in the village which overlap with Flood Zones. The flooding is largely confined to open space and impacts on a small number of properties.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Broadford. The settlement is built on very low lying land generally sloping towards the River Glash.<br><br>Climate Change<br>The climate change mapping does not indicate any significant increase in fluvial risk in the village. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the Existing Settlement zonings were still suitable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Brownstown

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| **Flood Risk Review** | Historical Flooding<br>KCC have reported road flooding at locations along the Suncroft Road.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights some pluvial extents to the south of the settlement coinciding with low lying lands. The village is built on a steep area of ground sloping north west. Pluvial flooding may be a concern for the low lying areas in the south of the village, where land is zoned as SS-Serviced Sites.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications (including the site zoned for SS-Serviced Sites) are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Calverstown

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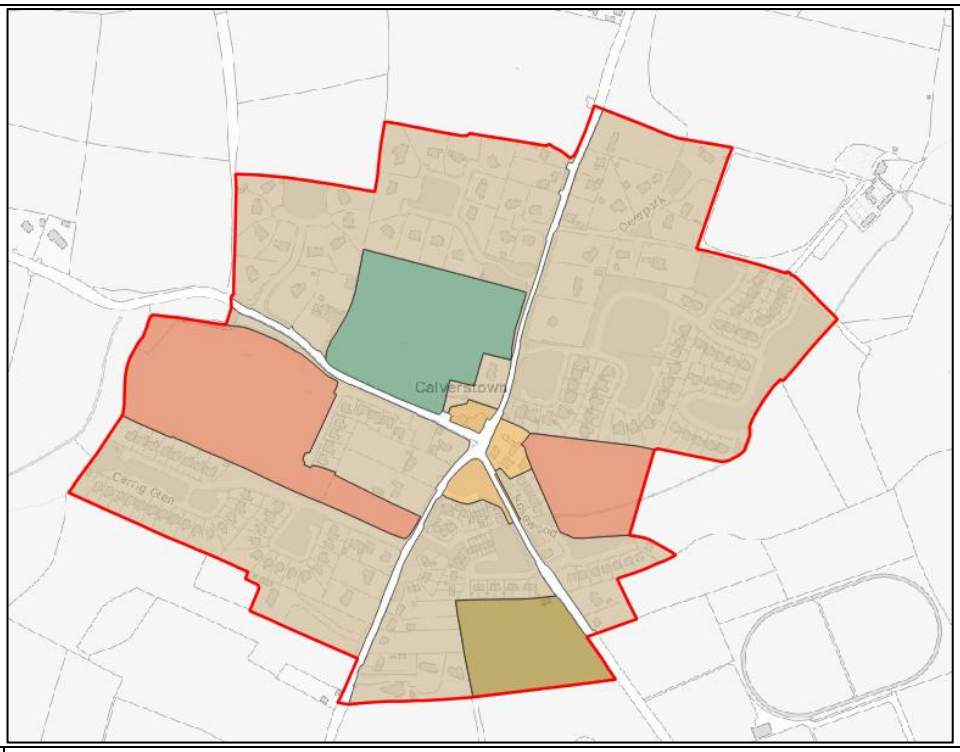
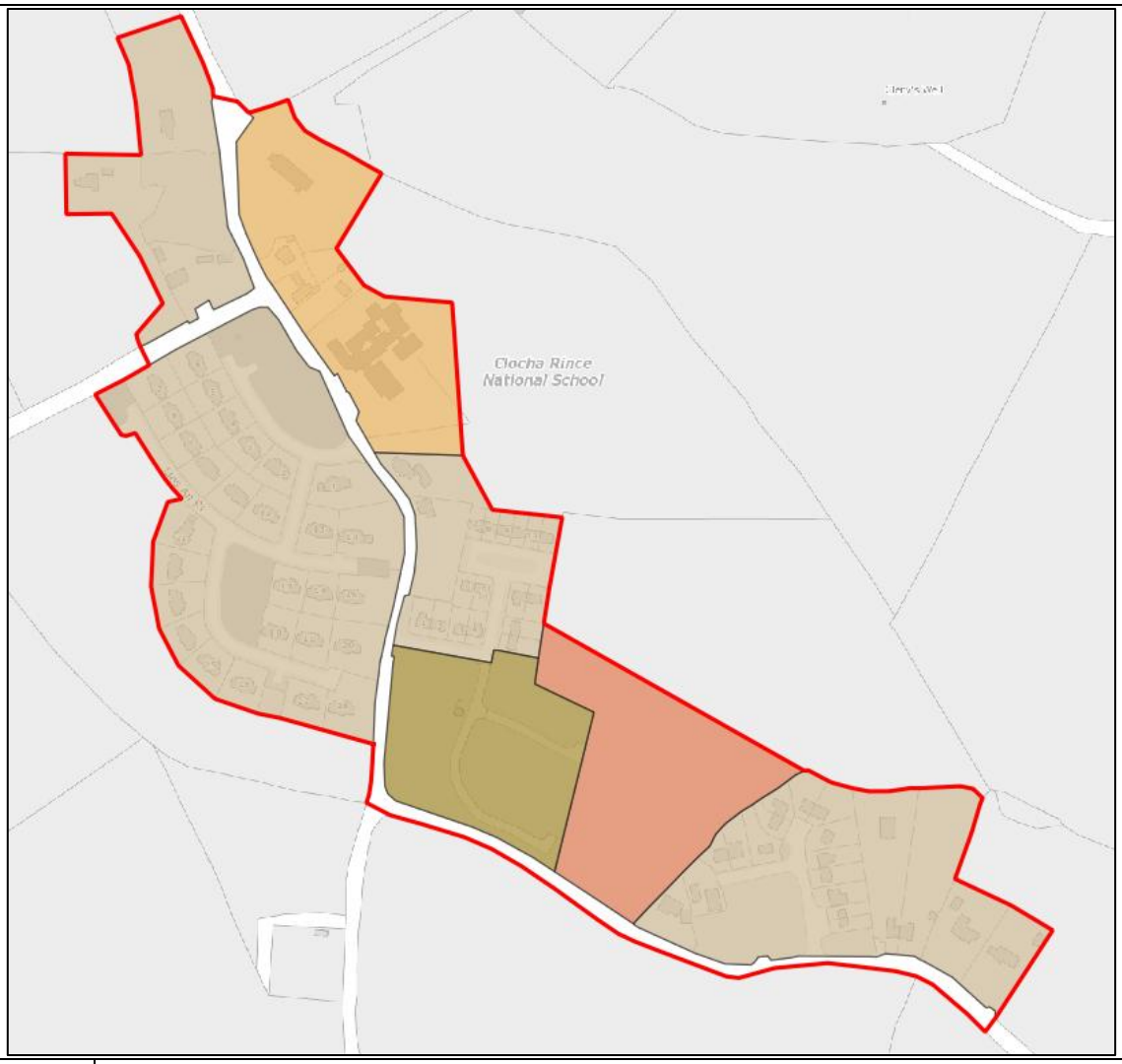
| |  |
| **Flood Risk Review** | Historical Flooding<br>Historical pluvial flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights some pluvial extents to the centre and east of the settlement which are agree with historical surface water flooding.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Clogharinkoe

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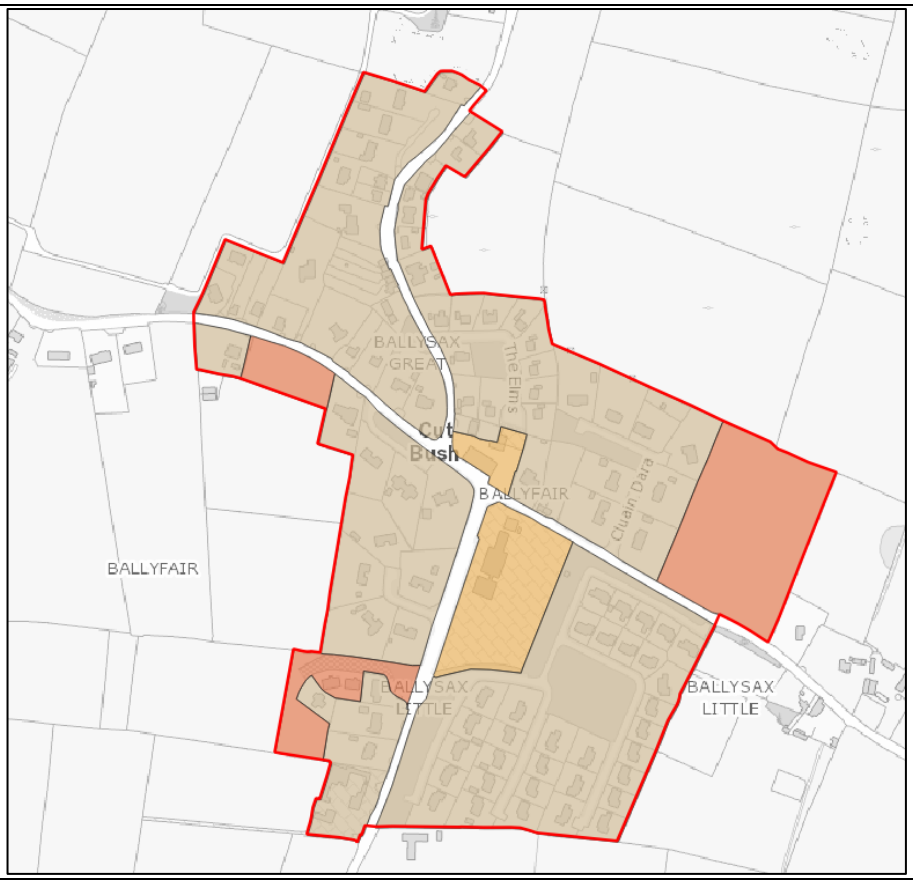
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore, no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extents in the area. The village is located at the brow of a hilly and natural drainage flows away from the village centre. Potential for some pluvial flooding in the low lying areas of the Lios an Ri housing estate due to surface water runoff.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Cutbush

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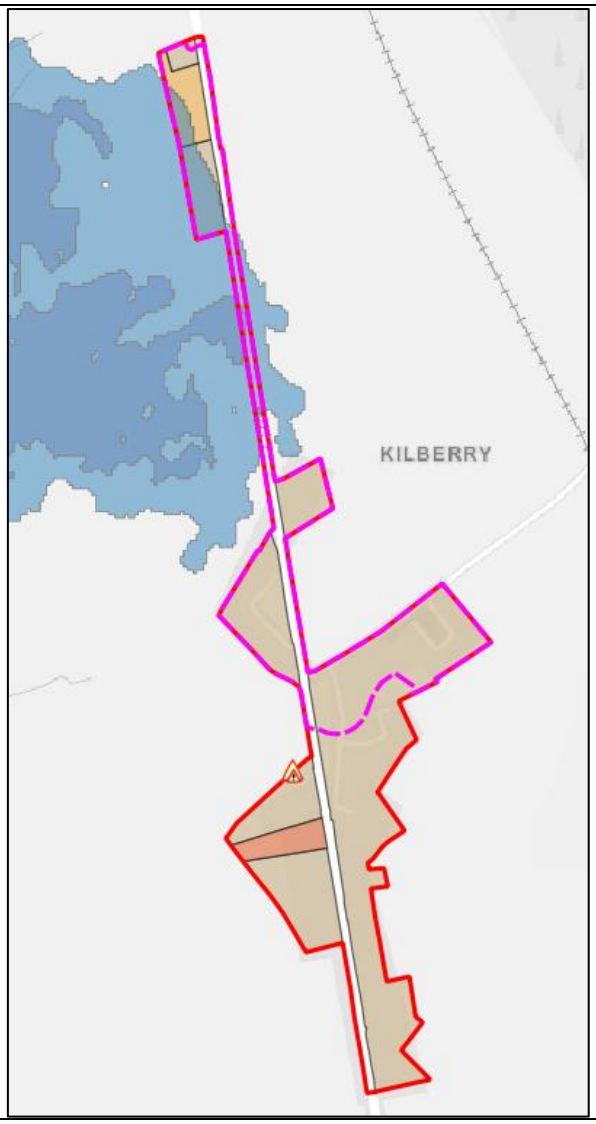
| **Flood Risk Review** | Historical Flooding<br>Surface flooding can occur in the public road near the Elms Housing Estate during heavy rainfall events.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights some pluvial extents to the east of the settlement.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications (including the site proposed to be zoned for the Settlement Expansion lands to the east of the village) are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Kilberry

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| **Flood Risk Review** | Historical Flooding<br>Surface water runoff was local farmland can cause flooding to the road network in Kilberry.<br><br>Fluvial Flooding<br>The CFRAM mapping indicates some fluvial risk in the north of the village, including the proposed settlement expansion area<br><br>Pluvial Flooding<br>The PFRA mapping highlights clusters of pluvial risk which agreed with historical flooding records.<br><br>Climate Change<br>The CFRAM climate change mapping shows significant increases in flood extents from the River Barrow in the Kilberry area as shown in the image below. |

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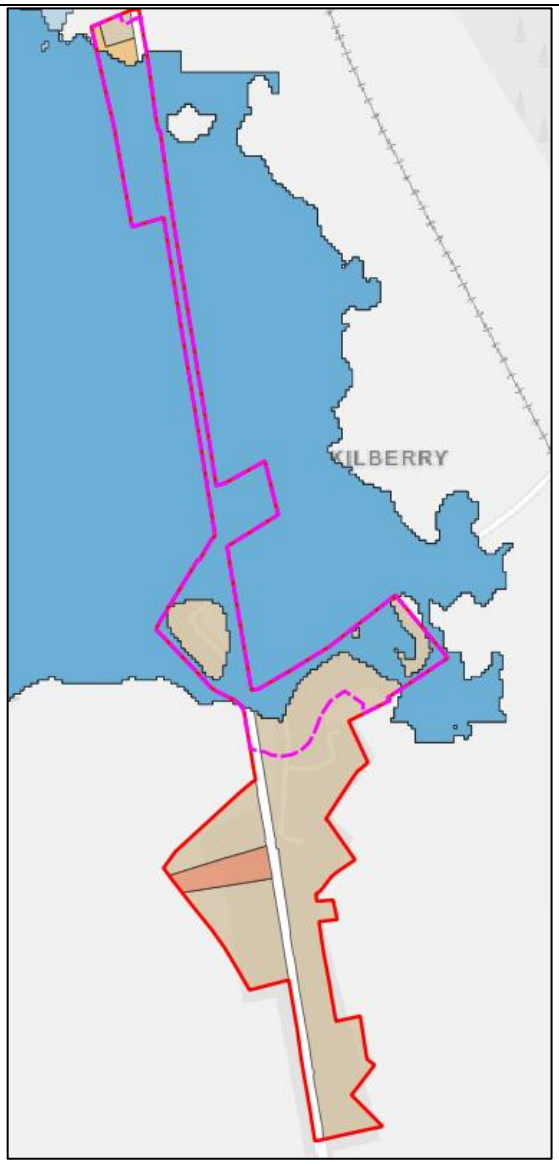
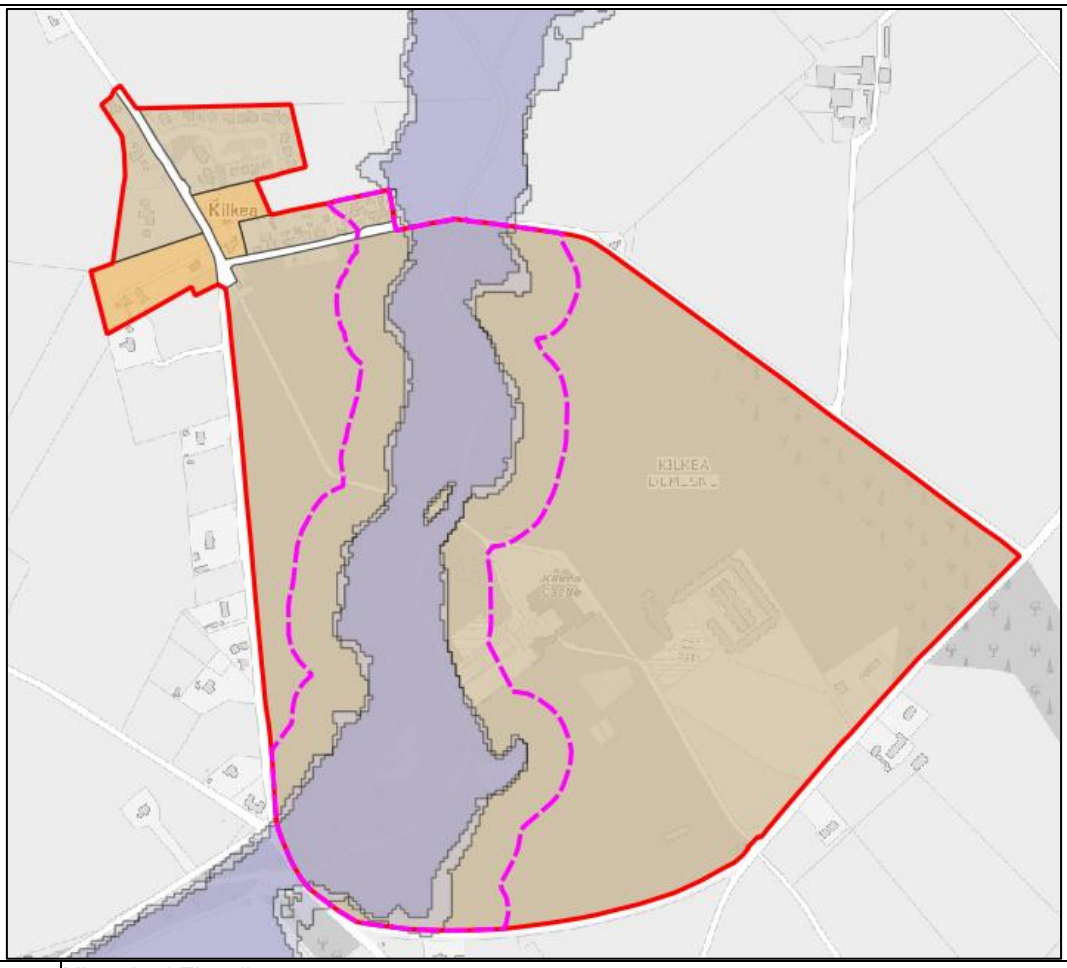
| |  |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the Existing Settlement zoning a settlement core zoning in the north of the village and the settlement expansion area are still suitable. As discussed in Section 3.4, the Guidelines recommend adopting “a cautious approach” to zoning lands potentially impacted by climate change flooding extents. Therefore, this SFRA recommends that the lands along the R417 potentially impacted by climate change flooding extents should be zoned as a water compatible land use to mitigate against potential flood risk. However, the KCC CDP is proposing to zone one site for settlement expansion and specifies that the climate change flooding scenario be examined in a SSFRA at planning application stage to examine the risk and see if development on the site is achievable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing and proposed zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be carried out as part of planning applications has been delineated. The extent of the FRA requirement area has been expanded to account for climate change scenarios that could impact on the settlement in the future. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Kilkea

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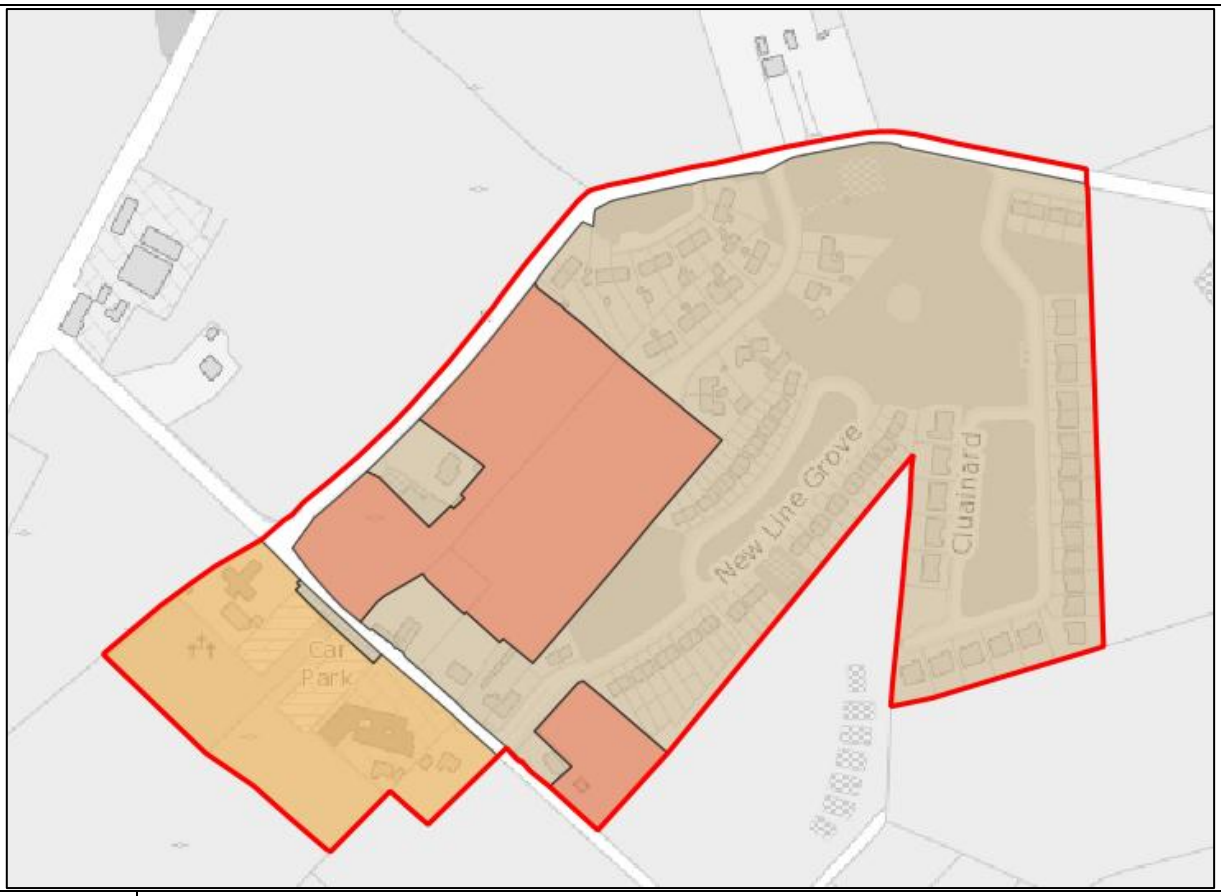
| **Flood Risk Review** | Historical Flooding<br>Surface water runoff can cause flooding to the road network in areas near Kilkea.<br><br>Fluvial Flooding<br>A review of the NIFM flood extents in this does not highlight any flood risk to properties. All the flooding extents are contained within open space. However the floodplain of the Greese River in the grounds of the Kilkea Castle Hotel is significant.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extents in the area. The land is generally quite flat in the village and drains towards the Greese River.<br><br>Climate Change<br>The NIFM mapping does not any highlight significant increase in flood extents that impact the remainder of the village. |
| **Conclusion** | There is very little flood risk identified in this area to the existing urban development with all flooding contained with open space, however the Flood Zones overlap with the existing development zoning in the grounds of the Kilkea Castle Hotel and therefore to ensure no future development encroaches on the River Greese floodplain a Justification Test is required. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Kilmead

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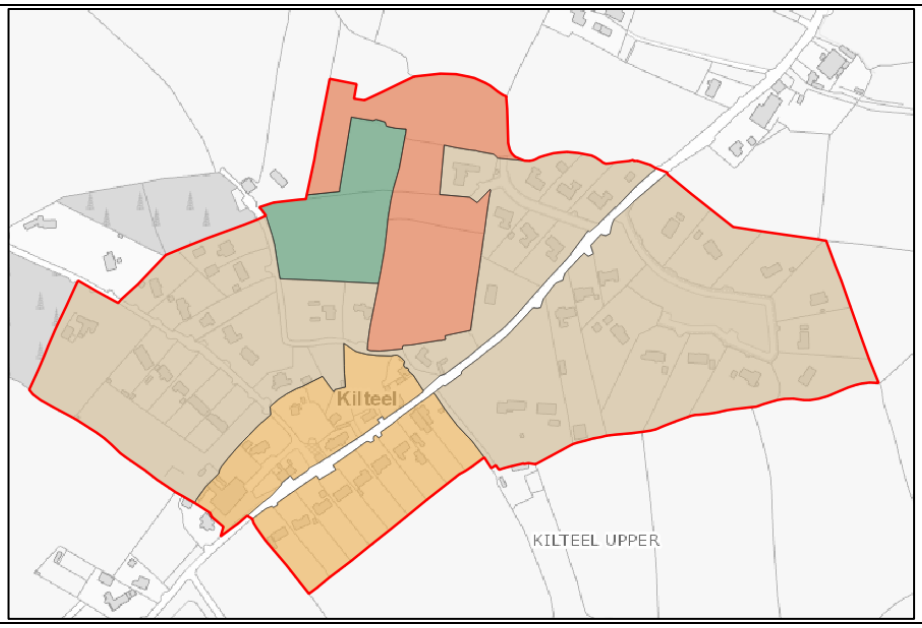
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Kilmead. The settlement is built on very low lying land generally sloping west.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Kilteel

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| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone<br>mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent in Kilteel. The settlement is built on steep land on the lower slopes of the Dublin / Wicklow Mountains. Kilteel slopes west towards the town of Kill.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Lackagh/Mountrice

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| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the immediate area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights some pluvial extents within the lands as SS-Serviced Sites in Mountrice.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in this area. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications (including the site zoned for the SS-Serviced Sites in Mountrice) are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Maganey/Levitstown

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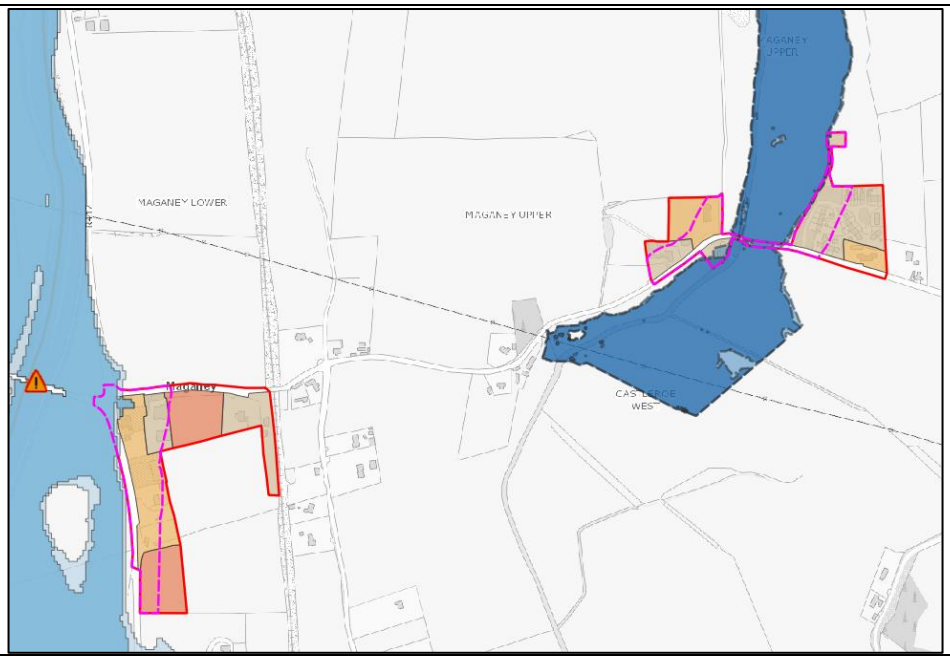
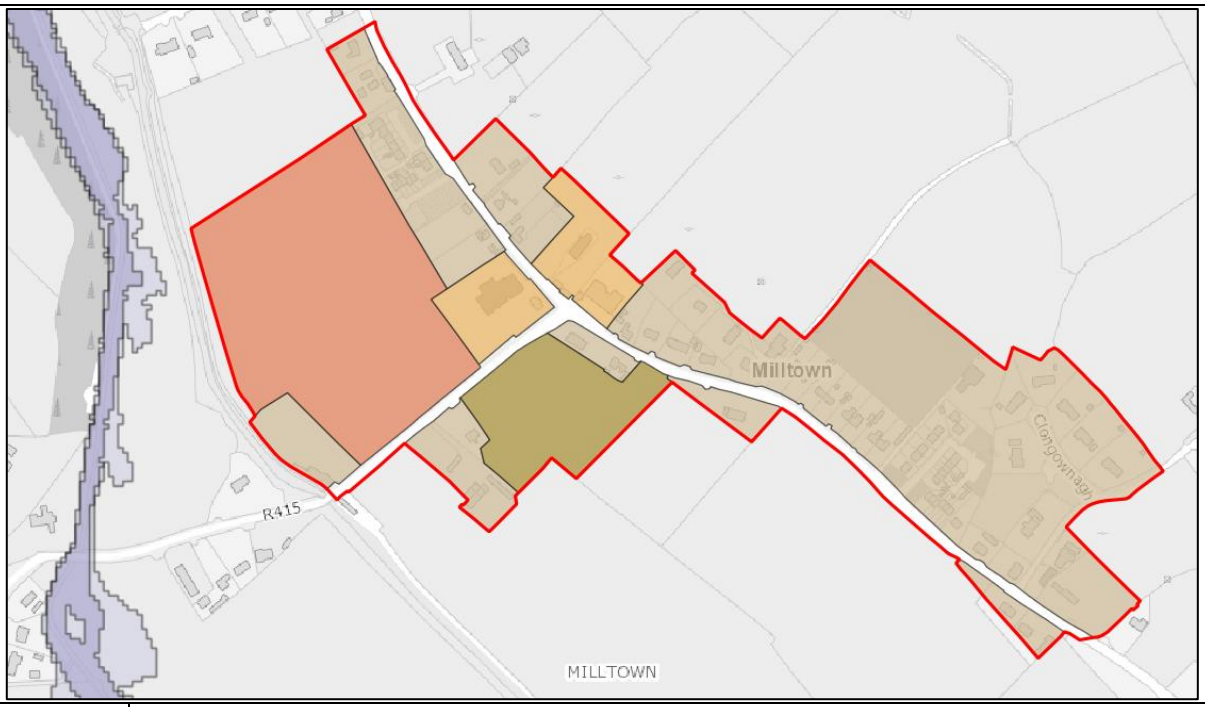
| |  |
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the Levitstown however the Barrow River is known frequently to flood in Maganey.<br><br>Fluvial Flooding<br>A review of the indicative flood zones in Levitstown highlighted a wide floodplain but there is only a floodplain contained within the local church car park. The CFRAM mapping shows the extensive flooding along the banks of the Barrow River in Maganey.<br><br>Pluvial Flooding<br>The PFRA mapping highlights clusters of pluvial extent west of Levitstown.<br><br>Climate Change<br>The CFRAM climate change mapping shows that the flood extents along the Barrow increase slightly towards Maganey. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the Settlement Core, Existing Settlement and Settlement Expansion is still suitable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>The proposed new settlement expansion along the R417 is not located in the flood zones, however the entrance to site is potentially significantly inundated during climate change flooding scenarios. Therefore any planning application for the site should carry out a SSFRA that examines the flooding scenarios to examine the risk and see if emergency access to the site can be achieved during a flooding event. |

## Milltown

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| **Flood Risk Review** | Historical Flooding<br>KCC reported significant pluvial flooding at Fenview Housing Estate caused by runoff from surrounding hilly areas.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights pluvial extents to the north of the settlement but the area is not allocated a land use. Milltown generally slopes west towards the grand canal.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Nurney

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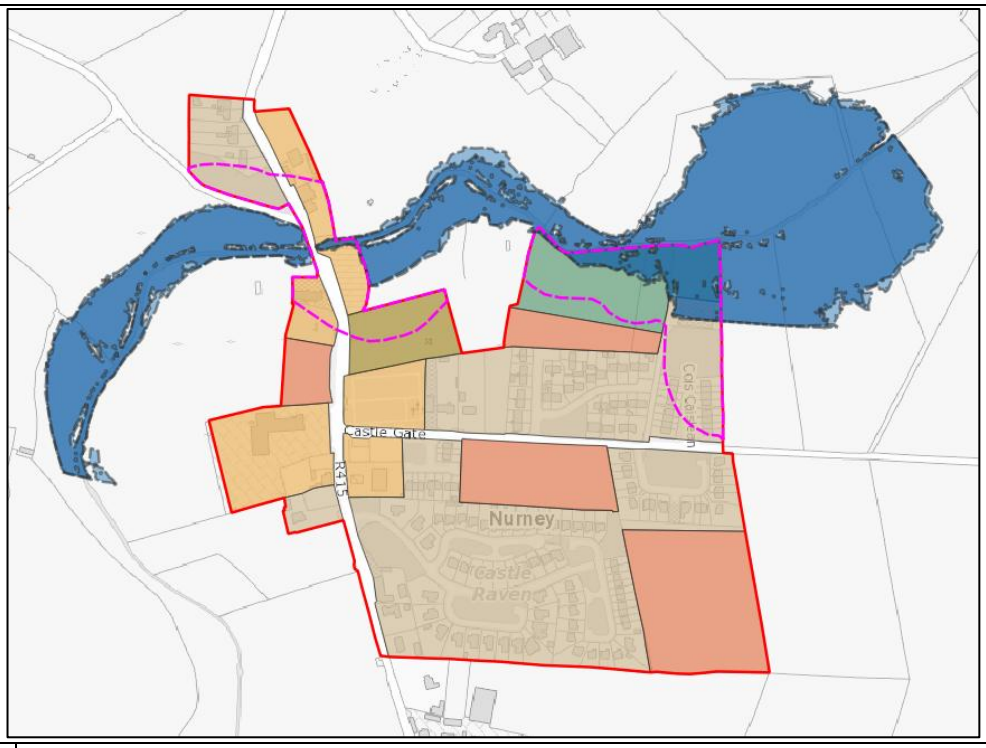
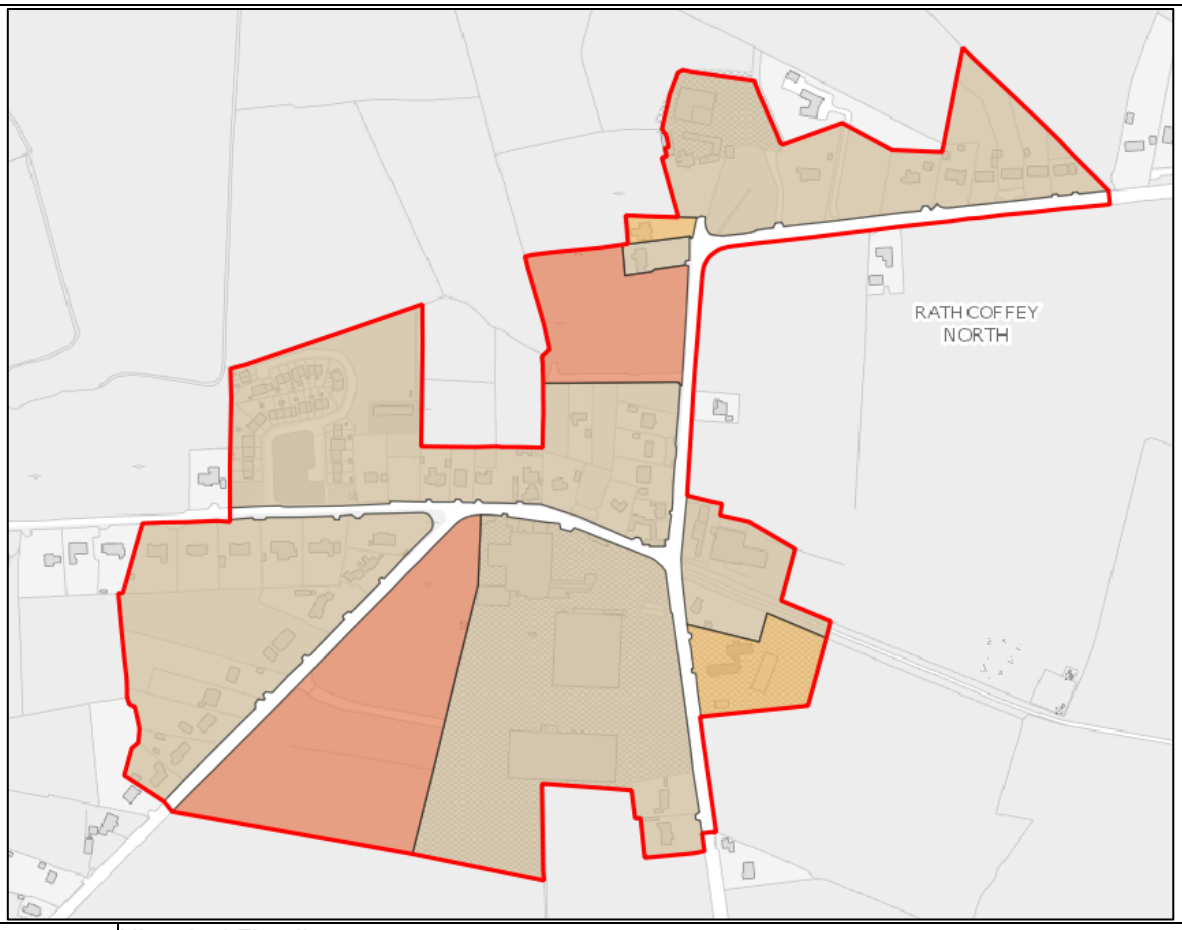
| |  |
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the Nurney village.<br><br>Fluvial Flooding<br>A review of the indicative flood zones in Nurney highlighted a proposed new settlement expansion area overlapping with Flood Zones A and B. The fluvial mapping in Nurney is confined to the extent of the LiDAR and appears to be truncated in the western end of the settlement. A site visit was undertaken to assess the potential for flooding to progress further south in the Justification Test area. The lands in this area begin to rise as they reach the existing residential area. The water depths in this area are quite low and the flood extent is beginning to taper off before it gets truncated. Based on the site visit and water depths from the hydraulic model it was determined that the risk to the residential properties is low.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. Nurney is located in flat lying land and generally slopes west.<br><br>Climate Change<br>The indicative mapping does not indicate any significant increase flood extents from Flood Zone A to Flood Zone B. |
| **Conclusion** | Based on the criteria in the Guidelines the Development Plan Justification Test is required to assess if the Settlement Core is still suitable. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Rathcoffey

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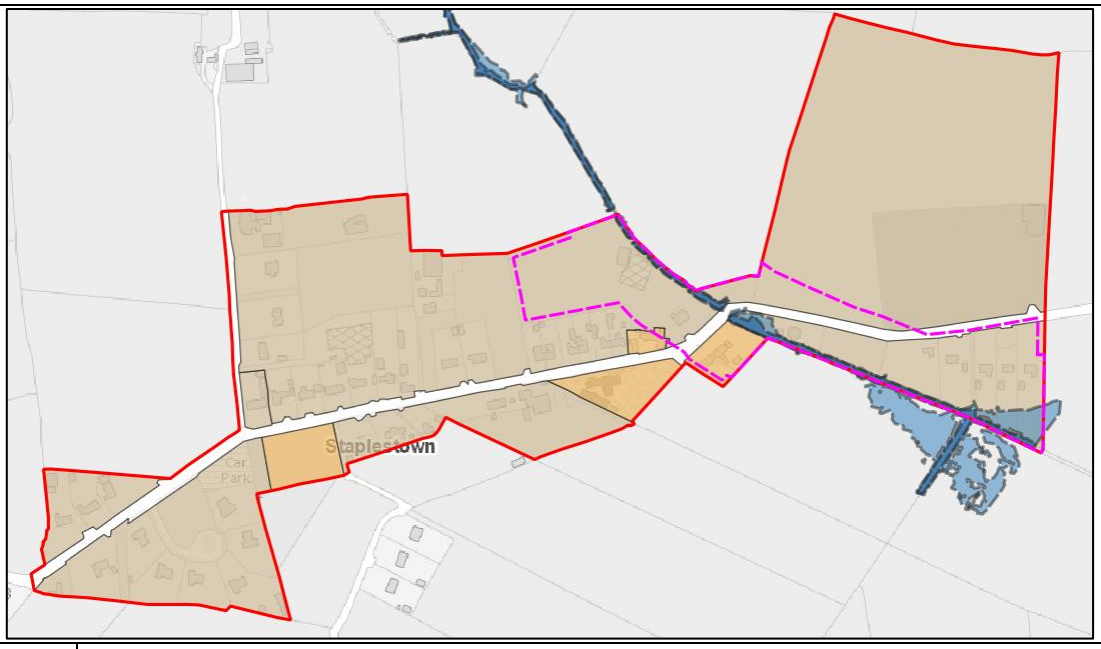
| **Flood Risk Review** | Historical Flooding<br>No historical flooding reported in the area.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping highlights clusters of pluvial risk which agreed with historical flooding records. The settlement generally slopes west.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

## Staplestown

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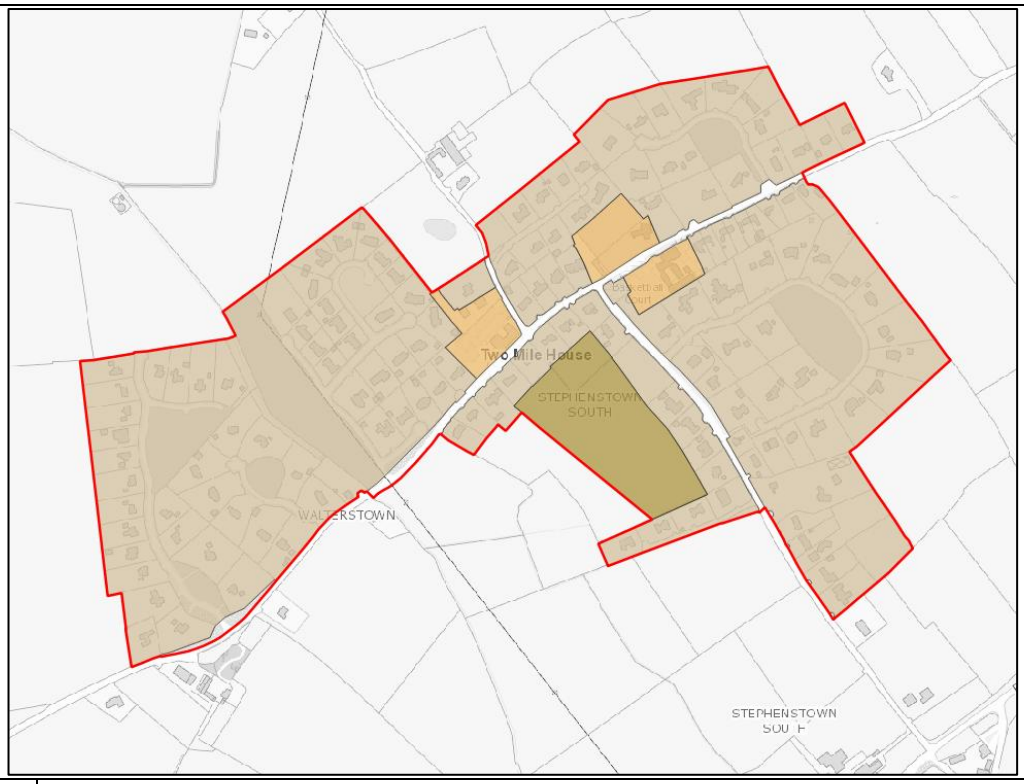
| **Flood Risk Review** | Historical Flooding<br>Road flooding adjacent to the Mill Pond located west of the village due to over flows from the pond after heavy rain. KCC has recently completed infrastructure works along the road adjacent to the pond to alleviate the flooding.<br><br>Fluvial Flooding<br>A review of the indicative flood zones does highlight some very limited existing residential properties at risk from flooding. However the majority of the floodplains contained within open space of the existing settlement.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. The settlement is the valley of two higher ground areas and slopes towards the north west.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little limited flood risk identified in this area to the existing urban development with the majority of the flooding contained with open space, however, therefore, to ensure no future development encroaches on the Derrycrib River floodplain a Justification Test is required. A Justification Test was carried out by KCC and found that it is considered appropriate to retain the existing zonings. The Justification Test is included in **Appendix C**.<br><br>The extent of the areas where an SSFRA must be caried out as part of planning applications has been delineated. FRAs should address all types of flood risk, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk |

## Two Mile House

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| **Flood Risk Review** | Historical Flooding<br>KCC reported flooding to the local road network in the village during heavy rainfall events and subsequent flooding to some local gardens due to runoff from the road.<br><br>Fluvial Flooding<br>The flood zone mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary.<br><br>Pluvial Flooding<br>The PFRA mapping does not highlight any significant pluvial extent. The settlement is built on steep land on the lower slopes of the Dublin / Wicklow Mountains. The village slopes west towards the M7 Motorway.<br><br>Climate Change<br>The climate change mapping does not indicate any fluvial risk in the village. |
| **Conclusion** | There is very little flood risk identified in this area and there is no Justification Test required. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

# 8 FLOOD RISK MANAGEMENT POLICIES AND OBJECTIVES

## 8.1 General Development Plans and Strategies

The CDP outlines surface water and flood risk management policies which have been strengthened and improved upon since the previous Development Plan. These have also been updated based on the information provided in the SFRA process. A summary of relevant policies and are shown in **Table 8-1**, however the CDP should be referred to for the full complement of relevant policies.

**Table 8-1: County Development Plan Flood Risk Management Policies**

| Objective /Policy/ Action Code | Policy Description |
|---|---|
| HO O50 | Require that new dwellings incorporate principles of sustainability and green principles in terms of design, services and amenities with careful consideration in the choice of materials, roof types (i.e. green roofs), taking advantage of solar gain/passive housing and the provision of low-carbon and renewable energy technologies as appropriate to the scale of the development and to support microgeneration in all residential, commercial, agricultural and community development planning. Other sustainable principles could include the use of Sustainable Urban Drainage Systems (such as attenuation ponds and grass lined swales), the use of gravel or grasscrete rather than permanent paving/tarmac for driveways, landscaping and planting for biodiversity/pollinators and adequate waste segregation and storage space, as set out in Section 15.4 of Chapter 15 (Development Management standards) and the Rural House Design Guide contained in Appendix 4. |
| HO P33 | 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. |
| HO O52 | Protect and maintain all surface water drainage at curtilage of site. Where site works impact on surface water drainage effective remedial works will be instated. |
| TM O5 | Encourage the use of materials and engineering solutions that optimise natural surface water drainage as part of Sustainable Urban Drainage Systems (SUDS) with all new active travel, public transport, parking, road and street developments and ensure adequate replacement and additional planting of pollinator-friendly and native species. |
| TM O119 | Ensure car parking particularly parking associated with retail areas is designed in such a manner as to reduce visual impact and promote carbon sequestration, green infrastructure, and nature-based surface water drainage solutions by requiring;<br>The landscape design to include planting of trees and pollinator species to be undertaken by an appropriately qualified Landscape Architect and in collaboration with an appropriately qualified ecologist to ensure the biodiversity in the general area will support European Sites;<br>The construction details for the root zones of the proposed trees in accordance with best practice and to specify which locations utilise systems such as 'root barriers' to avoid future conflict between roots, roads, footpath surfaces and underground utility services;<br>The provision of not more than two parallel or five perpendicular spaces between trees/planting bays; and<br>The use of permeable paving, where appropriate. |
| RD O27 | Support the development of forestry resources with several functions including, flood retention, biodiversity, water quality/catchment management, tourism and recreation in conjunction with Coillte and other relevant stakeholders. |
| IN O3 | Promote water conservation and best practice water conservation in all developments, including rainwater harvesting and grey water recycling. |
| IN O6 | Require an undisturbed edge or buffer zone to be maintained, where appropriate, between new developments and riparian zones of water bodies to maintain the natural function of existing ecosystems associated with water courses and their riparian zones, and to enable sustainable public access. The width of the edge or buffer zone shall be determined during the appropriate environmental assessment such as EcIA or AA. |
| IN O29 | Support the conservation, protection and enhancement of Natural Water Retention Measures (NWRM), as appropriate to the individual catchment. |
| IN O30 | Require all plans and projects to comply with the Best Practice Interim Guidance Document 'Nature-based solutions to the management of rainwater and surface water runoff in Urban Areas (2021)' |

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| | published by the Department of Housing, Local Government and Heritage, or any subsequent updates to same. |
| IN A3 | Develop a 'Sustainable Urban Drainage Systems Guidance Document' for County Kildare within one year of the adoption of the Plan. |
| IN P5 | Ensure adequate surface water drainage systems are in place which meet the requirements of the EU Water Framework Directive and the River Basin Management Plan in order to promote the use of Sustainable Drainage Systems. |
| IN O20 | Maintain, protect and enhance capacity of the existing surface water drainage systems in the county. |
| IN O21 | Facilitate the development of nature based Sustainable Urban Drainage Systems, including the retrofitting of SuDS in established urban areas. Culverting entire drains and streams will generally be prohibited; interference with natural drainage systems is to be minimised and the Council will explore opportunities to remove culverted drainage systems in favour of open, natural drainage systems. |
| IN O22 | Require the implementation of Sustainable Urban Drainage Systems (SuDS) and other nature-based surface water drainage as an integral part of all new development proposals. |
| IN O23 | Require new developments to reduce the generation of storm water runoff and ensure all storm water generated is disposed of on-site OR attenuated and treated prior to discharge to an approved water system, with consideration for the following:<br>The infiltration into the ground through the provision of porous pavement such as permeable paving, swales, and detention basins.<br>The holding of water in storage areas through the construction of green roofs, rainwater harvesting, detention basins, ponds, and wetlands.<br>The slow-down in the movement of water. |
| IN O24 | Only consider underground retention solutions when all other options have been exhausted. Underground tanks and storage systems will not be accepted under public open space, as part of a SuDS solution. |
| IN O25 | Promote the use of green infrastructure (e.g., green roofs, green walls, planting, and green spaces) as natural water retention measures. |
| IN O26 | Ensure as far as practical that the design of SuDS enhances the quality of open spaces. SuDS do not form part of the public open space provision, except where it contributes in a significant and positive way to the design and quality of open space. In instances where the Council determines that SuDS make a significant and positive contribution to open space, a maximum 10% of the open space provision shall be taken up by SuDS. The Council will consider the provision of SuDS on existing open space, where appropriate. The 'Sustainable Urban Drainage Systems Guidance Document' prepared as an action of this plan shall supersede this standard. |
| IN O27 | Ensure that all development, including rural one-off residential developments will maintain existing surface water drainage systems, particularly at access points to the development. |
| IN O28 | Ensure development proposals in rural areas demonstrate compliance with the following:<br>The ability of a site in an un-serviced area to accommodate an on-site wastewater disposal system in accordance with the County Kildare Groundwater Protection Scheme, and any other relevant documents and legislation as may be introduced during the Plan period.<br>The ability of a site in an un-serviced area to accommodate an appropriate on-site surface water management system in accordance with the policies of the Greater Dublin Strategic Drainage Study (2005), in particular those of Sustainable Urban Drainage Systems (SuDS).<br>The need to comply with the requirements of the Planning Systems and Flood Risk Management Guidelines for Planning Authorities, published by the Minister for the Environment, Heritage, and Local Government (2009). |
| IN O38 | Support Inland Fisheries Irelands' pilot projects to investigate the incorporation of habitat restoration measures into flood management schemes on the upper Barrow and its tributaries for native species such as salmon and to address invasive fish species, subject to all necessary planning and environmental assessments. |
| IN P5 | Ensure the continued incorporation of Flood Risk Management and National Flood Risk Policy (2018) into the spatial planning of Kildare, to meet the requirements of the EU Floods Directive and the EU Water Framework Directive and to promote a climate resilient County. |
| IN O31 | Support and co-operate with the Office of Public Works (OPW) in delivering the Flood Relief/Alleviation schemes and measures contained in the Flood Risk Management Plans adopted by the Council in July 2018, and in other flood management works and schemes, as may arise, through the OPW Non-Coastal Minor Works Programme. |

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| IN O32 | Support the implementation of the EU Flood Risk Directive (2007/60/EC) on the assessment and management of flood risks and the Flood Risk Regulations (SI No 122 of 2010). |
| IN O33 | Manage flood risk in the county in accordance with the sequential approach and requirements of the Planning System and Flood Risk Management Guidelines for Planning Authorities, DECLG and OPW (2009) and circular PL02/2014 (August 2014), when preparing plans, programmes, and assessing development proposals. To require, for lands identified in the Strategic Flood Risk Assessment, a site-specific Flood Risk Assessment to an appropriate level of detail, addressing all potential sources of flood risk, demonstrating compliance with the Guidelines or any updated version of these guidelines, paying particular attention to avoidance of known flood risk, residual flood risks and any proposed site-specific flood management measures. |
| IN O34 | Recognise the important role of boglands, rehabilitated peatlands and other wetland areas infiltering water and contributing to sound ecological status in rivers as well as flooding patterns. Development in these areas shall be subject to a Flood Risk Assessment in accordance with the relevant guidelines. |
| IN O35 | Require development proposals which may affect canals and their associated infrastructure to prepare a Flood Risk Assessment in accordance with the relevant guidance. |
| IN O36 | Require that development along urban watercourses comply with the Inland Fisheries Ireland Guidance: Planning for Watercourses in the Urban Environment (2020), including the maintenance of a minimum riparian zone of 35 metres for river channels greater than 10 meters in width, and 20 meters for river channels less than 10 metres in width. Development within this zone will only be considered for water compatible developments as defined in the OPW Planning System and Flood Risk Management Guidelines for Planning Authorities (2009). |
| IN O37 | Protect any implemented/constructed flood relief schemes from inappropriate development or otherwise. |
| IN A4 | Map key flood risk infrastructure in the county where it is not otherwise readily identified or protected from interference or removal and to maintain the details of same on a County Register. |
| IN A5 | Prepare and carry out any identified actions of a maintenance programme for river channels, including those identified as historical drainage districts, the responsibility for which lies with Kildare County Council. Such actions must be subject to Ecological Impact Assessment and Appropriate Assessment in accordance with the EU Habitats Directive. |
| EC O58 | Require the undertaking of a peatland stability assessment, carbon emissions balance assessment and hydrological and ecological impact assessments, as appropriate, when developing project proposals for development on peatlands. |
| LR O26 | Contribute towards the protection of waterbodies and watercourses, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains, from inappropriate development. This will include buffers free of development in riverine and wetland areas, as per chapter 12. |
| LR O29 | Ensure that the Streamside buffer zone (minimum of 10m plus) is kept free from development and existing vegetation is retained undisturbed to contribute to biodiversity and to ensure that bike paths and/or larger footpaths along rivers and streams are provided in the Middle buffer zone (15m-30m), in line with the Inland Fisheries Ireland's publication 'Planning for Watercourses in an Urban Environment – 2020 Update. Planting if required should be in keeping with the recommendations of the All-Ireland Pollinator Plan. |
| LR O34 | Control development that will adversely affect the visual integrity of distinctive linear sections of water corridors and river valleys and open floodplains. |
| BI P7 | Recognise and promote inland waters, natural environmental assets and to protect rivers, streams, and other watercourses and, wherever possible, maintain them in an open state capable of providing suitable habitats for fauna and flora while discouraging culverting or realignment. |
| BI O40 | Support Inland Fisheries Ireland's pilot projects to investigate the incorporation of habitat restoration measures on waters draining the Bog of Allen into flood management schemes. |
| BI O46 | Generally, prohibit infilling of land adjacent to rivers, including natural floodplains, prior to or during any development. This will only be permitted, where, in the opinion of the planning authority, there is an overriding public interest in order to provide a key public infrastructure or to provide a more coherent design approach (in line with an approved urban design strategy) but it will be subject to ensuring that adequate compensatory flood storage (if necessary) is provided elsewhere. |
| BI O47 | Ensure the protection, improvement or restoration of riverine floodplains and to promote strategic measures to accommodate flooding at appropriate locations including nature-based solutions, in order to protect ground and surface water quality and build resilience to climate change. |
| BI O48 | Avoid developing walking/cycling trails through sensitive ecological habitats. A multi-disciplinary team including an ecologist and flood risk expert shall review all riverine sites to determine the appropriate zonation (ref Table 12.4) and permissible uses. |

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| BI P8 | Ensure that Kildare's wetlands and watercourses are retained for their biodiversity and flood protection values and at a minimum to achieve and maintain at least good ecological status for all wetlands and watercourses in the county by, at the latest, 2027 in line with the Water Framework Directive and Ramsar Convention. |
| BI 049 | Protect wetland sites that have been rated A (International), B (National) C+ (County) and C (Local) importance as identified in the County Kildare Wetlands Survey 2012-2014, (See Tables 12.5 & 12.6). Any development within the zone of influence of these listed wetland sites should be subject to EcIA and where appropriate, hydrological impact assessment. |
| BI O50 | Protect and conserve wetlands from infilling, drainage, fragmentation, degradation, and resist development that would destroy, fragment, or degrade any wetland identified as part of the County Kildare Wetland Survey 2012-2014, (See Table 12.6). |
| BI O52 | Require the preparation and submission of a Hydrological Report/Assessment for significant developments within and in close proximity to protected raised bogs and to take account of same in the assessment of impacts on the integrity of peatland ecosystems. |
| BI P15 | Promote and support the development of Sustainable Urban Drainage Systems (SuDS) to ensure surface water is drained in an environmentally friendly way by replicating natural systems. |
| BI O76 | Promote and support the development of Sustainable Urban Drainage Systems (SuDS) such as integrated constructed wetlands, permeable surfaces, filter strips, ponds, swales and basins at a site, district and county level and to maximise the amenity and bio-diversity value of these systems. |
| BI A23 | Showcase good examples of Sustainable Urban Drainage Systems (SuDS) which maximise amenity and biodiversity through the use of systems such as (but not limited to) swales, rain gardens as part of local authority developments. |
| BI P7 | Recognise and promote inland waters, natural environmental assets and to protect rivers, streams and other watercourses and, wherever possible, maintain them in an open state capable of providing suitable habitats for fauna and flora while discouraging culverting or realignment. |
| BI O37 | Ensure the protection of rivers, streams and other watercourses and, wherever possible, maintain them in an open state capable of providing suitable habitats for fauna and flora while discouraging culverting or realignment. Endeavour to re-open previously culverted streams and watercourses through any future development/redevelopment proposals. |
| BI O75 | Require multifunctional open space provision within all new developments; this includes provision for ecology and sustainable water management. |
| BI O78 | Actively promote and encourage nature-based approaches and green infrastructure solutions as viable mitigation and adaptation measures to surface water management. |
| ST KL51 | Ensure all development proposals along the River Liffey Corridor comply with Chapter 12: Biodiversity and Green Infrastructure (notably BI O41 and Table 12.4), The Planning System and Flood Risk Management (OPW, 2009) and 'Planning for Watercourses in the Urban Environment' (Inland Fisheries Ireland, 2020) |
| ST KL52 | Collaborate and support Uisce Éireann and other inter agency service departments with the preparation and implementation of future Storm Water Separation Programs / Drainage Area Plans for Kilcullen where feasible. |
| IEO 3.1 | Manage flood risk in Newbridge in conjunction with the Office of Public Works, and in accordance with the requirements of The Planning System and Flood Risk Management Guidelines for Planning Authorities, DECLG and OPW (2009) and Circular PL02/2014 (August 2014). |
| IEO 3.2 | Ensure development proposals within the areas where Kildare County Council have applied a Justification Test and where residual flood risk remains as outlined on Map 10.2 Strategic Flood Risk Assessment are the subject of a Site-Specific Flood Risk Assessment, appropriate to the nature and scale of the development proposed. |
| IEO 3.3 | Maintain all existing overland flow routes. |
| IEO 3.4 | Support and co-operate with the Office of Public Works in progressing the development of a Flood Relief Scheme for Newbridge which may include physical works, such as a series of hard defences (flood embankments and walls), new or upgraded trash and works to improve channel conveyance including dredging 90m of the Liffey tributary and upgrading two culverts. |

## 8.2 Flood Risk Management Plans

KCC have committed to implementing the recommendations from the FRMPs that fall within County Kildare (adopted by the Council in July 2018) as listed on www.floodinfo.ie/map/floodplans. Similarly, as discussed in previous sections of the SFRA (**Section 5.7**), KCC are working in conjunction with the OPW to progress ongoing flood relief schemes and will also work with the OPW to deliver any future proposed flood alleviation works that are deemed appropriate and viable.

## 8.3 Flood Risk Management Objectives

KCC will implement the proposed flood risk management objectives for each urban area, ensuring planning applications will require an FRA. The level of detail within the FRA will depend on the risks identified and the proposed land use. Applications should demonstrate the use of the sequential approach when presenting the site layout and design and they must satisfy the Justification Test (where required). The proposal must demonstrate that appropriate mitigation and management measures are put in place. For any development in flood risk areas that meet the Development Plan Justification Test, a Development Management Justification Test must then be applied. Development must satisfy all the criteria of the Development Management Justification Test.

# 9 SUMMARY

## 9.1 Overview

The SFRA Report has been prepared in accordance with the requirements of The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014). The SFRA has provided an assessment of all types of flood risk within the County to assist KCC to make informed strategic land-use planning decisions. The flood risk information has enabled KCC to apply the Guidelines sequential approach, and where necessary the Justification Test, to appraise sites for development and identify how flood risk can be reduced as part of the development plan.

## 9.2 Flood Zones and Flood Risk

Kildare is susceptible to several types of flood risk, including:

- Fluvial – Flooding occurs when a river overtops its banks due to a blockage in the channel or the channel capacity is exceeded.
- Pluvial – Flooding occurs when overland flow cannot infiltrate into the ground, when drainage systems exceed their capacity or are blocked and when and when the water cannot discharge due to a high water level in the receiving watercourse.

These types of flood risk act independently or in combination to cause flooding across the County.

The flood zones extents have been prepared in accordance the Planning System and Flood Risk Assessment Guidelines identifying Flood Zones A, B and C. The flood zone maps are largely derived from the CFRAM Studies, NIFM Study and the SFRA indicative flood zone mapping. The Flood Zone mapping is based on the best currently available data and a more detailed, SSFRA may generate localised flood extents. The flood zones only account for inland flooding and are generated without the inclusion of climate change factors. They should not be used to suggest that any areas are free from flood risk as they do not account for potential flooding from pluvial and groundwater flooding. The flood zone maps are shown in **Appendix B**.

All development proposals taking place in areas that KCC have applied a Justification Test, where a residual flood risk remains, should be supported by an appropriately detailed FRA. The level of detail within the FRA will depend on the risks identified and the proposed land use. The FRAs should in general address the site layout with respect to vulnerability of the proposed development type. Finished floor levels should be above the 0.1% or 1% AEP level. Flood resilient construction materials and fittings may be considered and the developments should not impede existing flow paths or cause flood risk impacts to the surrounding areas. It also may be necessary to develop emergency evacuation plans and defined access / egress routes for extreme flood events. The FRAs should also examine climate change impacts.

## 9.3 Flood Management Policies

KCC will manage flood risk in the County in accordance with the requirements of the Planning System and Flood Risk Management Guidelines for Planning Authorities, DECLG and OPW (2009) and circular PL02/2014 (August 2014), in particular when preparing plans and programmes and assessing development proposals. The existing CDP flood risk management policies have been retained and amended as appropriate. The Council has committed to supporting and co-operating with the OPW in delivering the recommendations from the Eastern and South Eastern CFRAM FRMPs. KCC have committed to implementing the recommendations from the FRMPs and will work in conjunction with the OPW to deliver any proposed flood alleviation works that are deemed appropriate and viable. Local flood risk management policies and recommendations will also be implemented based on the findings of the SFRA. The full list of recommendations and mapping are shown in **Appendix A** and **Appendix B.**

## 9.4 SFRA Review and Monitoring

The Kildare SFRA will be reviewed and updated every six years in line the CDP statutory review process. Additionally, outputs from future studies and datasets may trigger a review and update of the SFRA during the lifetime of the 2023-2029 CDP. These include the outputs from the CFRAM FRMPs. Other sources of information may not lead to an update of the SFRA during the lifetime of the plan but they should be retained and collected to supplement the future County SFRAs.

# Appendix A – Area Specific Recommendations of SFRA

The recommendations detailed in **Table A-1** apply to all Town Environs, Towns, Villages and Settlements examined in the SFRA.

Additional bespoke recommendations for individual planning boundaries are outlined in subsequent tables (**Table A-2, Table A-3, Table A-4**) in this Appendix. Bespoke recommendations have not been identified for all areas. They have been identified where a particular flood risk exists or where KCC want to implement specific surface water management criteria.

**Table A-1 Recommendations for all planning areas within the CDP**

| Recommendations for all planning areas within the CDP |
|---|
| 1. To ensure that development proposals for all lands located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Maps in Appendix B of this SFRA are subject to SSFRA appropriate to the type and scale of development being proposed. SSFRAs shall be carried out in accordance with the requirements of The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014). SSFRAs should present in sufficient detail the potential flood risk to a proposed development, the potential increase in flood risk elsewhere, any proposed mitigation measures and proposals for sustainable surface water management. The FRA must demonstrate that there are no adverse impacts to the development itself or the surrounding area. SSFRAs should also address the following:<br><br>a. The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain.<br><br>b. If development cannot be avoided in the floodplain or not substituted for a less vulnerable type then a Justification Test for Development Management must be completed and all criteria of the test must be satisfied for development in a flood risk area to be permitted.<br><br>c. Highly Vulnerable Development shall not be permitted in Flood Zone A or B;<br><br>d. Less vulnerable development proposals should not be considered in Flood Zone A area unless it meets all the criteria of the Development Management Justification Test.<br><br>e. Development in Flood Zone A should only be water compatible.<br><br>f. Existing land uses which are water compatible (e.g. open space, agricultural, car parking) that coincide with floodplains or adjacent to watercourses should be maintained to avoid vulnerable development in these areas.<br><br>g. The minimum finished floor level for Highly Vulnerable Development should be above the Flood Zone B (0.1% AEP) level plus suitable freeboard. The recommended level of freeboard is 500 mm for fluvial flood levels;<br><br>h. The minimum finished floor level for Less Vulnerable Development should be above the Flood Zone A (1% AEP) level plus suitable freeboard. The recommended level of freeboard is 500 mm for fluvial flood levels<br><br>i. Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas.<br><br>j. Applications should outline the emergency procedures that will be applied in the event of a flood. Evacuation routes should be identified but if this is not possible then containment may be considered if it is considered safe and practical to do so.<br><br>k. Compensatory storage for development that results in a loss of floodplain within Flood Zone A must be provided on a level for level basis, the lands should be in close proximity to the area that storage is being lost from, the land must be within the ownership of the developer and the land given to storage must be land which does not flood in the 1% AEP event. Also the compensatory storage area should be constructed before land is raised to facilitate development.<br><br>l. Should address residual risk of culvert blockage (where applicable), increased flood extents under climate change scenarios and pluvial risk which should be aimed at setting finished floor levels. |
| 2. All planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

**Table A-2 – Self-Sustaining Growth Towns**

| Towns | Recommendation |
|---|---|
| Newbridge | The CFRAM flood extent mapping indicates that some areas of Newbridge are particularly sensitive to increases in flood extents due to climate change scenarios. All required FRAs within the planning boundary shall assess and account for climate change scenarios to ascertain the risk to the development and proposed flood mitigations as appropriate.<br><br>Before any proposed development within the planning boundary, the applicant must consult with KCC to determine the most appropriate surface water management solutions. Upgrading the existing drainage infrastructure in the town is essential, as additional inadequate infrastructure could lead to flooding problems. |

**Table A-3 – Small Towns**

| Towns | Recommendation |
|---|---|
| Derrinturn | For any proposed development with the planning boundary, the applicant must consult with KCC engineering departments to identify the most suitable surface water management solutions as the existing drainage infrastructure within the town requires an upgrade and additional inappropriate infrastructure has the potential to cause flooding issues. KCC has identified Derrinturn for an upgraded Surface Water Scheme.<br><br>Potential development of the green area in the town centre should not include any vulnerable land uses until an upgrade of the Derrinturn Surface Water Scheme is completed. |
| Kilcullen | Before any proposed development within the planning boundary, the applicant must consult with KCC to determine the most appropriate surface water management solutions. Upgrading the existing drainage infrastructure in the town is essential, as additional inadequate infrastructure could lead to flooding problems. Kilcullen has been identified for an upgraded Surface Water Scheme. |
| Kill | The equestrian zoning has been retained in the southwest of the planning boundary. This zoning type allows for limited self-catering accommodation, which is a highly vulnerable use, therefore any development proposals shall be subject a SSFRA following the recommendations has shown in Table A-1 above. |
| Rathangan | For any proposed development with the planning boundary, the applicant must consult with KCC engineering departments to identify the most suitable surface water management solutions as the existing drainage infrastructure has poor overall connectivity and adequate discharge to preferred outfalls is currently difficult. |

**Table A-4 – Villages**

| Villages | Recommendation |
|---|---|
| Allenwood | The CFRAM flood extent mapping indicates Allenwood is particularly sensitive to increases in flood extents due to climate change scenarios. All required FRAs within the planning boundary shall assess and account for climate change scenarios to ascertain the risk to the development and proposed flood mitigations as appropriate. |
| Athgarvan | Surface water runoff from development which cannot discharge to the River Liffey shall undertake analysis to identify an alternative appropriate watercourse outfall point or assess if infiltration is appropriate for surface water management. This analysis shall be undertaken in |

| Villages | Recommendation |
|---|---|
| | accordance KCC CDP surface water and drainage policies and outlined in detail in the required Surface Water Management Plan. |
| Caragh | For any proposed development with the planning boundary, the applicant must consult with KCC engineering departments to identify the most suitable surface water management solutions as the existing drainage infrastructure has poor overall connectivity and adequate discharge to preferred outfalls is currently difficult. |
| Coill Dubh / Coolearagh | For any proposed development with the planning boundary, the applicant must consult with KCC engineering departments to identify the most suitable surface water management solutions as the existing drainage infrastructure within the town requires an upgrade and additional inappropriate infrastructure has the potential to cause flooding issues. |
| Johnstown | The CFRAM flood extent mapping indicates Johnstown is particularly sensitive to increases in flood extents due to climate change scenarios. All required FRAs within the planning boundary shall assess and account for climate change scenarios to ascertain the risk to the development and proposed flood mitigations as appropriate. |
| Johnstownbridge | The CFRAM flood extent mapping indicates Johnstownbridge is particularly sensitive to increases in flood extents due to climate change scenarios. All required FRAs within the planning boundary shall assess and account for climate change scenarios to ascertain the risk to the development and proposed flood mitigations as appropriate. |
| Kilmeague | For any proposed development with the planning boundary, the applicant must consult with KCC engineering departments to identify the most suitable surface water management solutions as the existing drainage infrastructure within the town requires an upgrade and additional inappropriate infrastructure has the potential to cause flooding issues. |
| Suncroft | For any proposed development with the planning boundary, the applicant must consult with KCC engineering departments to identify the most suitable surface water management solutions as the existing drainage infrastructure has poor overall connectivity and adequate discharge to preferred outfalls is currently difficult |

**Table A-5 – Rural Settlements**

| Settlements | Recommendation |
|---|---|
| Brownstown | Surface water runoff shall undertake analysis to identify an appropriate watercourse outfall point or assess if infiltration is appropriate for surface water management. This analysis shall be undertaken in accordance KCC CDP surface water and drainage policies and outlined in detail in the required Surface Water Management Plan. |
| Kilberry | The CFRAM flood extent mapping indicates Kilberry is particularly sensitive to increases in flood extents due to climate change scenarios. All required FRAs within the planning boundary shall assess and account for climate change scenarios to ascertain the risk to the development and proposed flood mitigations as appropriate. |
| Milltown | For any proposed development with the planning boundary, the applicant must consult with KCC engineering departments to identify the most suitable surface water management solutions as the existing drainage infrastructure has poor overall connectivity and adequate discharge to preferred outfalls is currently difficult. |
| Two Mile House | For any proposed development with the planning boundary, the applicant must consult with KCC engineering departments to identify the most suitable surface water management solutions as the existing drainage infrastructure has poor overall connectivity and adequate discharge to preferred outfalls is currently difficult. |

# Appendix B – Fluvial Flood Zone Mapping

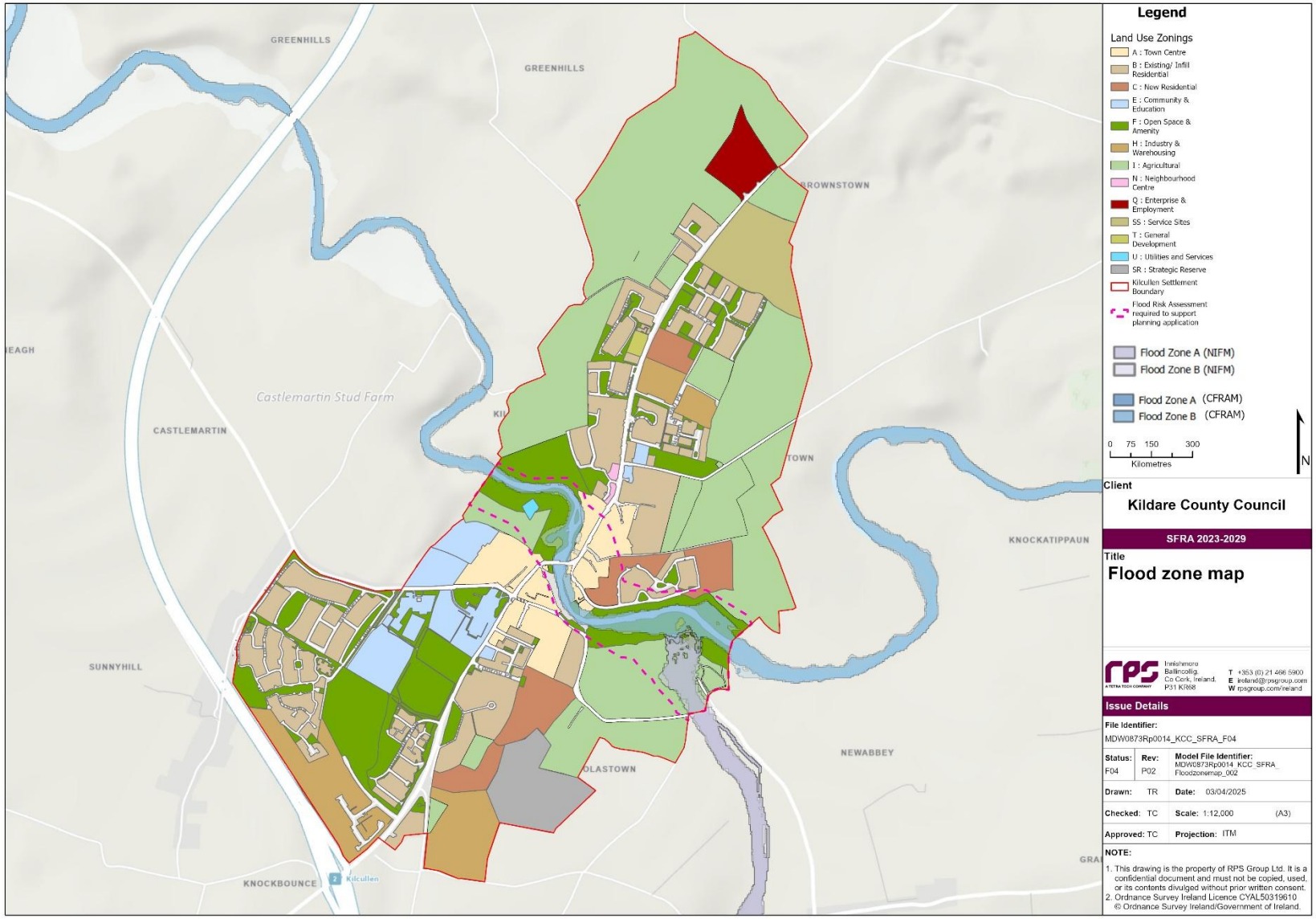



**Figure B 1: SFRA Map of Kilcullen**

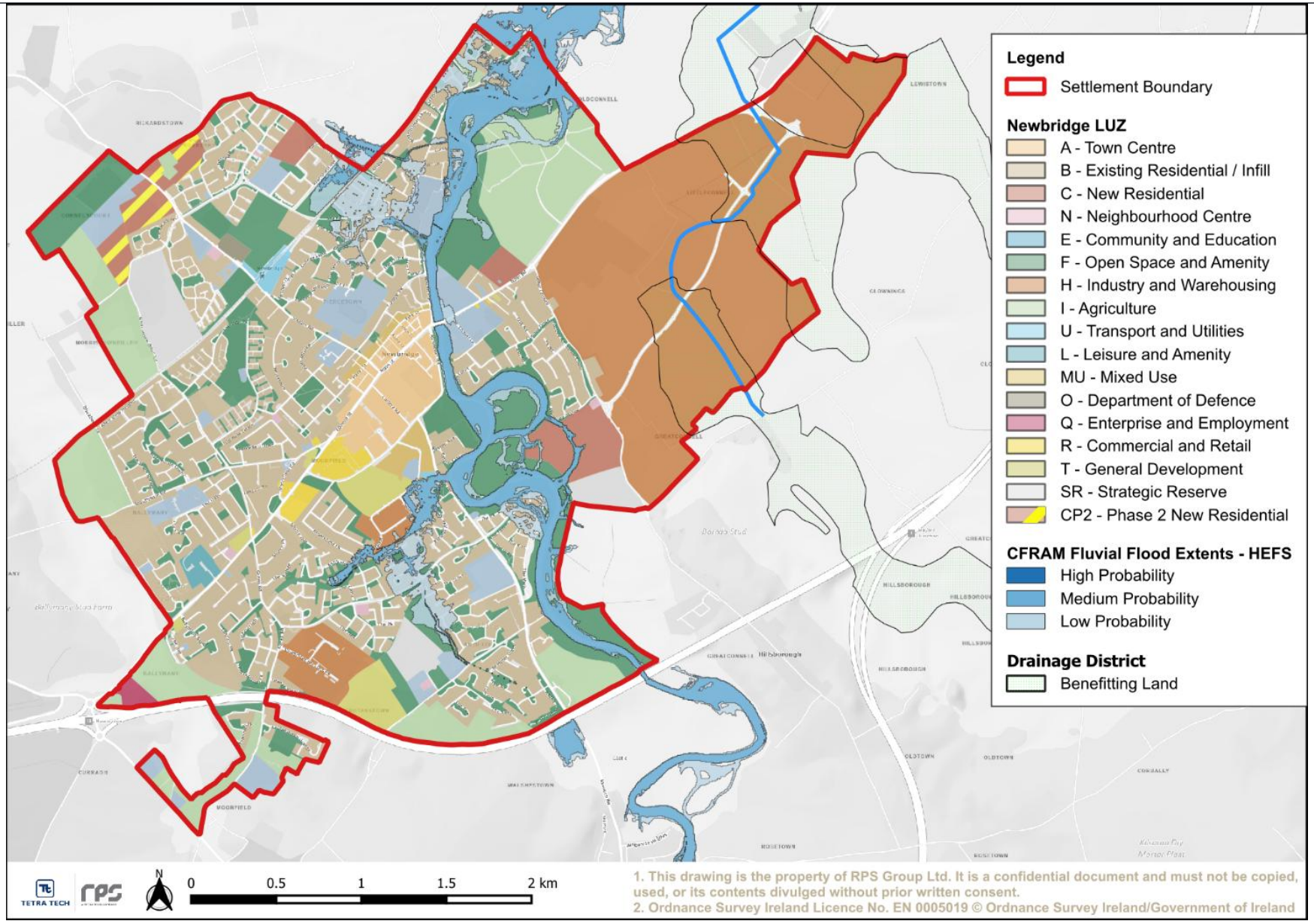
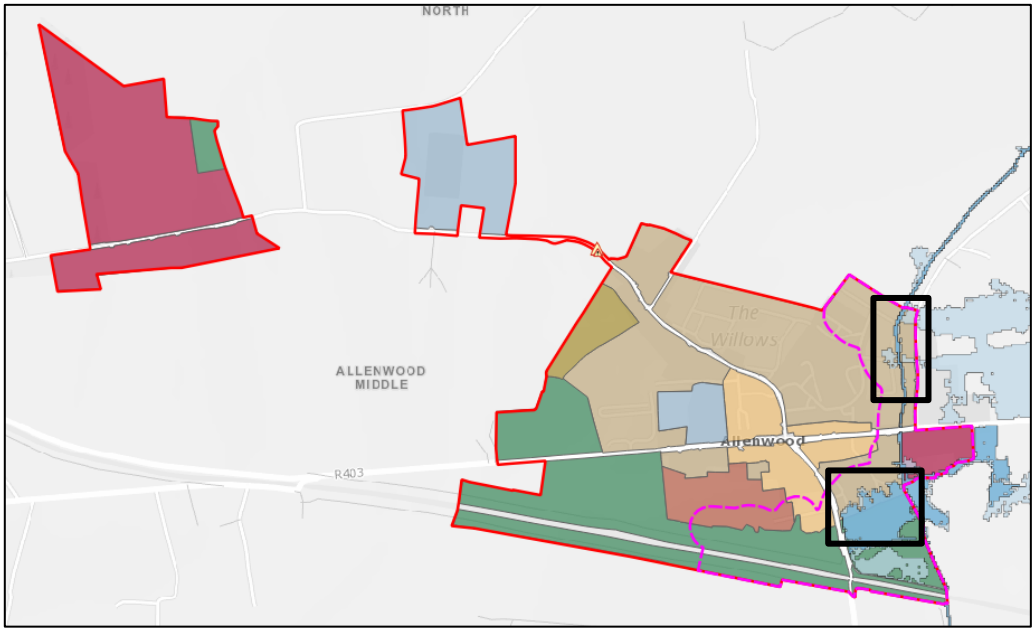



**Figure B 2: Newbridge CFRAM HEFS Fluvial Flooding**

# Appendix C – Justification Test

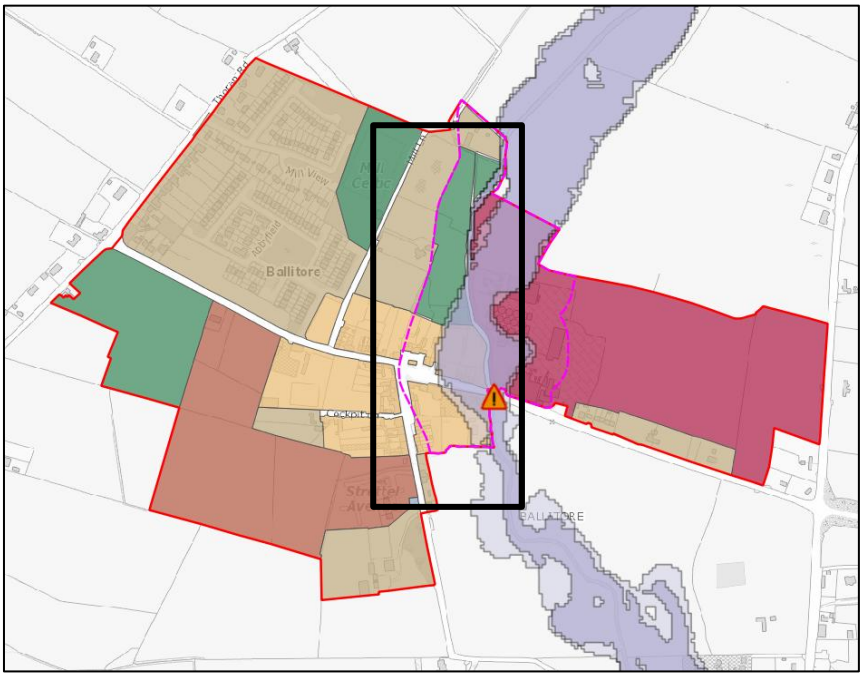
| Kildare County Development Plan 2023-2029 | Allenwood: B – Existing Residential / Infill, Q – Enterprise and Employment |
|---|---|




| | |
|---|---|
| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Allenwood provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029. |
| 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: | Land Zoned: B – Existing Residential / Infill, Q – Enterprise and Employment<br><br>Lands are located adjoining the village centre, zoning is required to maintain the proper planning and sustainable development of Allenwood. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Lands in this area at Derrymullen, Woodlawn and Bluetown have already been developed for residential use. A small portion of the land at the rear of the Allenwood tyre centre also lies within the identified Flood Zones. The zoning of the lands for 'Existing Residential & Infill' and Q – Enterprise & Employment will allow for infill development, where appropriate, to consolidate the urban settlement and prevent urban sprawl. Development will be subject to a detailed site specific Flood Risk Assessment, |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, is within the established designated urban settlement. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Whilst the subject lands are already developed as residential and employment use, the zoning objectives allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| (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 identified areas at Derrymullen, Woodlawn and Bluetown have already been developed as residential use and the small portion of land at the rear of the Allenwood tyre centre is also developed. Having regard to the developed nature of the lands it is considered reasonable to retain the use subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a |

| Kildare County Development Plan 2023-2029 | Allenwood: B – Existing Residential / Infill, Q – Enterprise and Employment |
|---|---|
| | SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. The flood mapping indicates that certain existing residential areas in Allenwood (Derrymullen, Woodlawn, Bluetown) are located within Flood Zones A and B. The rear of the Allenwood tyre centre also lies within Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development, located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA, should carry out a SSFRA as part of their planning application. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br><br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br><br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications (including applications for the proposed Service Site zoning at Allenwood Middle where 1% AEP pluvial risk was identified) are required to be developed in accordance with the KCC Guidance on Sustainable Drainage Systems (2024), KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

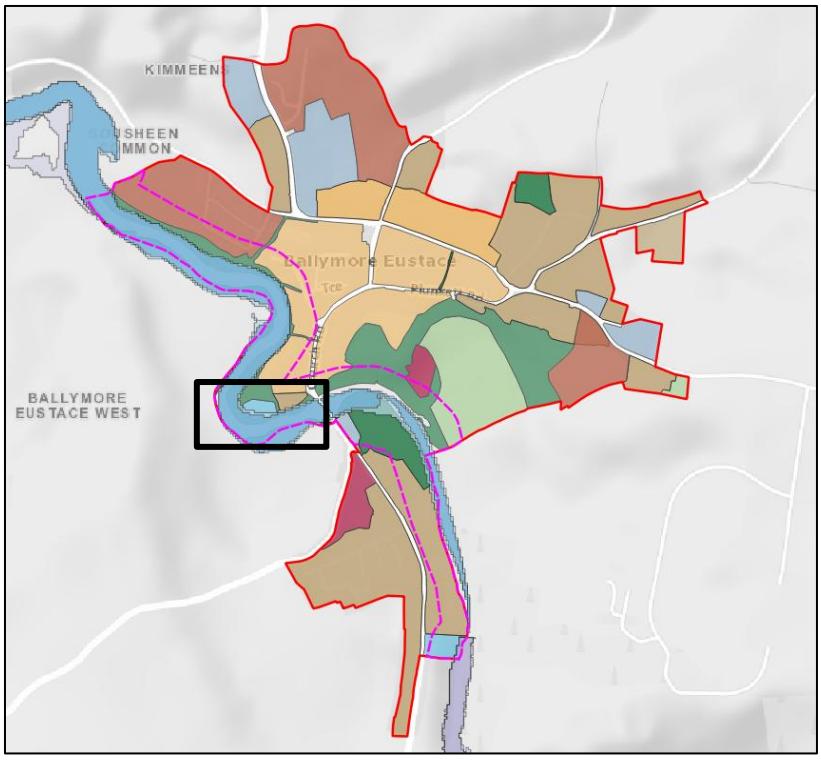
| Kildare County Development Plan 2023-2029 | Ballitore: A – Village Centre, B – Existing Residential / Infill, Q – Enterprise and Employment |
|---|---|




| | | |
|---|---|---|
| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Ballitore provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029. |
| 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: | Land Zoned: A – Village Centre, B – Existing Residential / Infill, Q – Enterprise and Employment,<br><br>Lands are located within and adjoining the village centre, zoning is required to maintain the proper planning and development of Ballitore. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Lands in the existing residential, village centre and employment zonings (Glanbia Site) are already developed for village centre, residential use and employment use. The zonings of the land for Village Centre, Existing Residential & Infill and Enterprise and Employment will allow for infill development, where appropriate and facilitate the continued use of the Glanbia site, which is essential to the vitality of the town centre and overall urban settlement. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, the lands identified are both within and adjoining the village centre of Ballitore. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | The subject lands are already developed as village centre, residential and employment use, The zoning objectives for village centre and existing residential allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| | (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. | Having regard to the developed nature of lands it is considered reasonable to retain the use subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior |

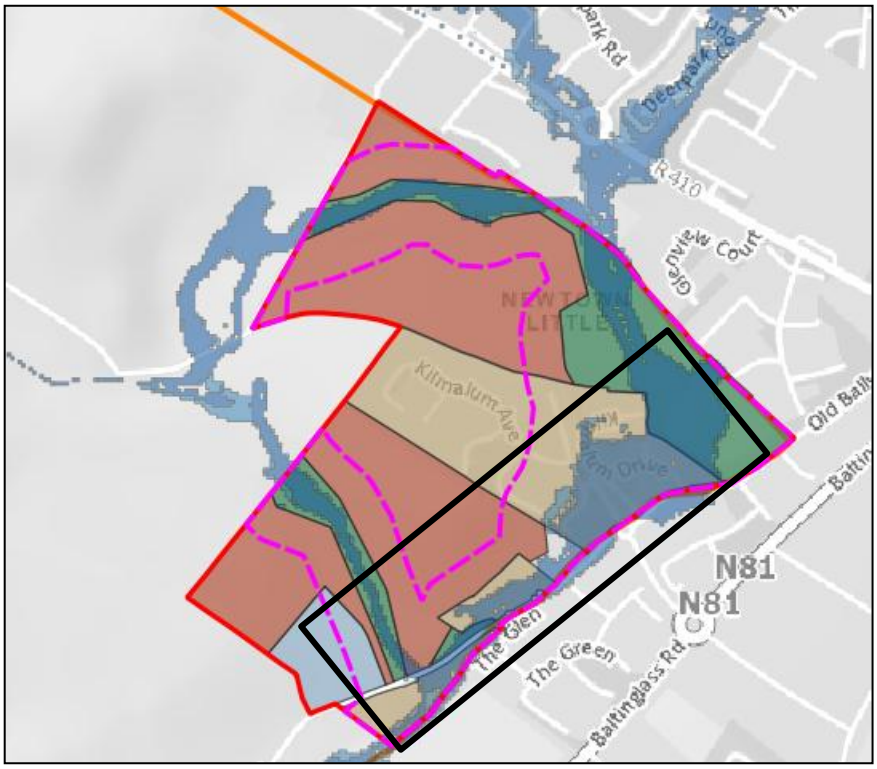
| Kildare County Development Plan 2023-2029 | | Ballitore: A – Village Centre, B – Existing Residential / Infill, Q – Enterprise and Employment |
|---|---|---|
| | | to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 3 | A flood 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the NIFM flood extents in this area highlighted existing residential, village centre and employment zonings (Glanbia Site) either side of the Greese River overlap with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Ballymore Eustace: B – Existing Residential / Infill, U – Utilities / Services |
|---|---|



| | Kildare County Development Plan 2023-2029 | Ballymore Eustace: B – Existing Residential / Infill, U – Utilities / Services |
|---|---|---|
| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Ballymore Eustace provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned: B – Existing Residential / Infill, U – Utilities / Services. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Lands are already zoned and are located within and adjoining the village centre, zoning is required to maintain the proper planning and development of Ballymore Eustace. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes. The subject lands are already developed as a WTP and for residential purposes. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes, the lands identified adjoin the village centre of Ballymore Eustace. |
| | (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. | Yes. The subject lands are already developed as a WTP and for residential purposes. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the CFRAM flood extents in this area highlighted an existing residential and utilities / services zonings (Pumping Station for Ballymore Eustace Sewerage Scheme) adjacent to the River Liffey which overlap with Flood Zones A and B. The flooded area is immediately adjacent to the River Liffey and is largely contained within open space areas of the sites. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Blessington: B – Existing Residential / Infill, C – New Residential, F – Open Space and Amenity, and E – Community and Education. |
|---|---|




| | |
|---|---|
| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 - 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Blessington Environs adjoin the town of Blesington, which is designated in the RSES Settlement Hierarchy as a Level 4 'Moderate Growth Town in the Hinterland' |
| 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: | Land Zoned: B – Existing Residential / Infill, C – New Residential, F – Open Space and Amenity, and E – Community and Education.<br><br>A new road/cycle/pedestrian link route from the Naas Road to the Kilmalum Road is proposed which will run through existing Kilmalum residential area and lands to the north and south.<br><br>Lands are located adjoining existing residential areas in the Blessington LAP and adjacent to employment lands south of the N81. Zoning is required to maintain the proper planning and sustainable development of Blessington Environs. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Lands in the existing residential zoned area (Kilmalum) are already developed. Future development proposals shall be restricted to minor infill proposals as outlined in Section 5.28 of the Flood Risk Management guidelines 2009. .<br><br>Open Space and Amenity lands are zoned as a compatible use that can facilitate and absorb potential future flooding.<br><br>New residential lands are subdivided and zoned open space and amenity to absorb potential flooding issues in the future.<br><br>Additional community facilities are essential to facilitate expansion of the settlement |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significantly previously developed residential lands. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | It is accepted that the site zoned 'Existing Residential' does not adjoin the 'Settlement Core', and development proposals on B: Existing Residential zoned land shall be restricted to minor infill proposals as |

| Kildare County Development Plan 2023-2029 | Blessington: B – Existing Residential / Infill, C – New Residential, F – Open Space and Amenity, and E – Community and Education. |
|---|---|
| | outlined in Section 5.28 of the Flood Risk Management Guidelines 2009. All other identified sites are close to or adjoin the settlement core. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | The subject lands are already developed as an existing residential area. The zoning objectives for C lands allow for appropriate consolidation and infill development, where appropriate. Community facilities (such as a school) will be essential to achieve compact sustainable growth. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| (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 identified area at Kilmalum has already been developed as residential use. Having regard to the developed nature of the lands and potential to consolidate lands to the north with the existing urban area, and with the 'E' zoned lands, it is considered reasonable to retain the use and zoning subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in this area highlighted existing residential areas in Blessington Manor Estate and properties along Kilmalum Road which overlap with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA and be restricted to minor infill proosals. There is also some limited flooding in some areas zoned for New Residential however these aeras should be sublject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Broadford: B – Existing Settlement |
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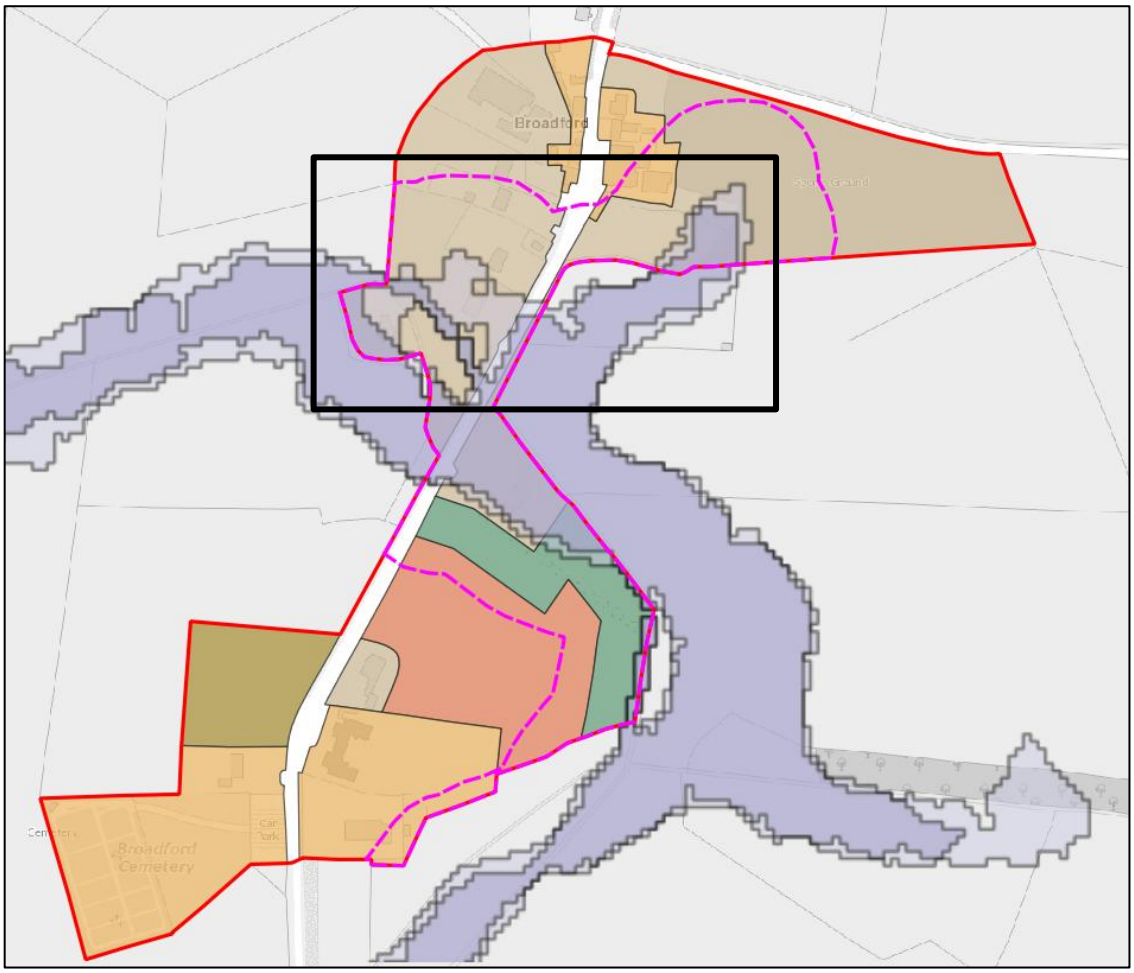


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Broadford provides some local service functions and has accordingly been designated as a rural Settlement under the Kildare County Development Plan 2023-2029. |
| 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: | Land Zoned: Existing Settlement (mainly residential in nature but can also include other uses such as employment and recreation).<br><br>Lands adjoin the settlement core; zoning is required to maintain the proper planning and sustainable development of Broadford. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. Lands are in use as existing residences and amenity lands (playing pitches). |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes. Houses and playing pitches have been developed on these lands. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. Lands adjoin the settlement core. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The subject lands are already developed as part of the existing settlement, but potential exists for other infill uses in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |

| Kildare County Development Plan 2023-2029 | Broadford: B – Existing Settlement |
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| (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. | No. Houses already exist in the flood risk area to the west whilst playing pitches located to the east are low risk as they are less vulnerable in these areas. It is considered reasonable to retain the use and designation subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Broadford highlighted existing residential areas which overlap with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Caragh: B – Existing Residential / Infill, I – Agriculture |
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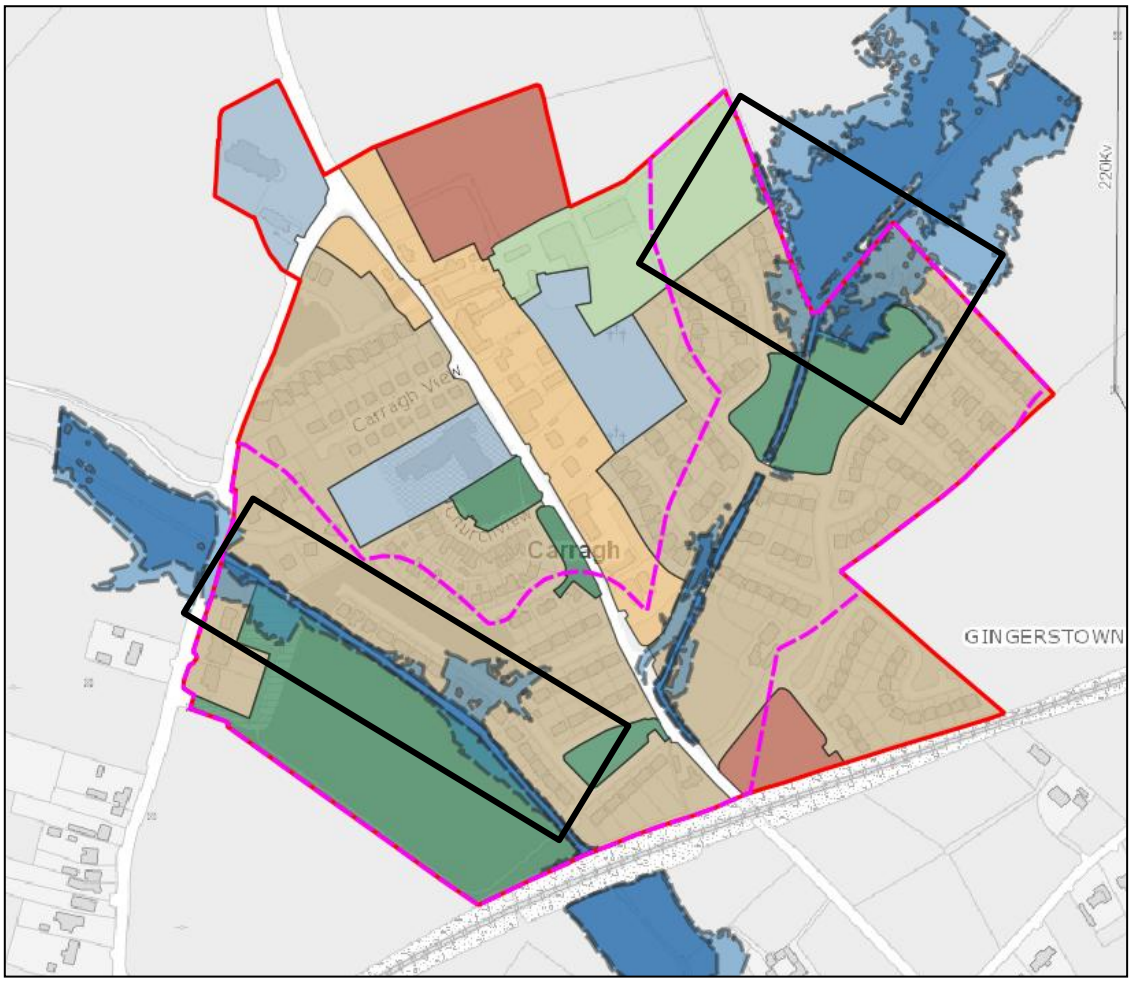


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Caragh provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029, aligning with the RSES settlement hierarchy. |
| 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: | Land Zoned: B – Existing Residential / Infill & I – Agriculture<br><br>Lands are located adjoining the village centre, zoning is required to maintain the proper planning and sustainable development of Caragh. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. Lands are already in use as existing residences, agriculture and amenity / open space. Old Chapel Grove and The Streams residential areas form part of the area at risk from flooding. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes. Old Chapel Grove and The Streams housing developments have been built on these lands. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. Lands adjoin village centre. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The subject lands are already developed as part of the existing settlement, but potential exists for other infill uses in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |

| | Kildare County Development Plan 2023-2029 | Caragh: B – Existing Residential / Infill, I – Agriculture |
|---|---|---|
| | (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. | Houses already exist in the flood risk area to the north and south of the village centre. It is considered reasonable to retain the use and designation subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Caragh highlighted existing residential areas (Old Chapel Grove and The Streams) and to the agricultural zoning in the north of the village boundary which overlap with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Castledermot: A – Town Centre, B – Existing Residential / Infill, C – New Residential, E – Community and Education, I – Agriculture, U – Utilities / Services |
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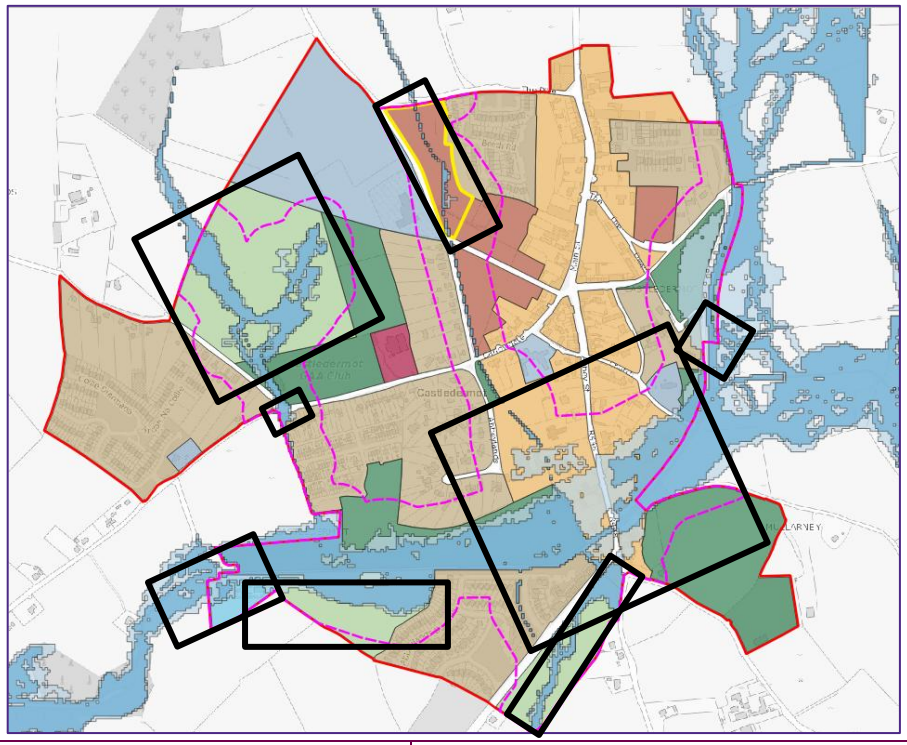

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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Castledermot provides a wide range of local service and employment functions and has accordingly been designated as a Small Town under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned: A – Town Centre, B – Existing Residential / Infill, C – New Residential, E – Community and Education, I – Agriculture, U – Utilities / Services<br><br>Lands are located within and adjoining the town centre, zoning is required to maintain the proper planning and development of Castledermot. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. A large part of the lands identified to the south of the town are zoned town centre lands and comprise of existing town centre uses including a school, housing, and other commercial activities.<br><br>Other locations comprise existing residential areas (Lerr Rd / Lerr View and William Pearse Terrace), and wastewater treatment infrastructure. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes. See (i) above. Most of the lands identified are developed. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. The sites identified are located within and adjacent to the core of the settlement. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Town centre, existing residential areas, and utility lands are already developed. Potential may exist for other infill uses in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |

| Kildare County Development Plan 2023-2029 | Castledermot: A – Town Centre, B – Existing Residential / Infill, C – New Residential, E – Community and Education, I – Agriculture, U – Utilities / Services |
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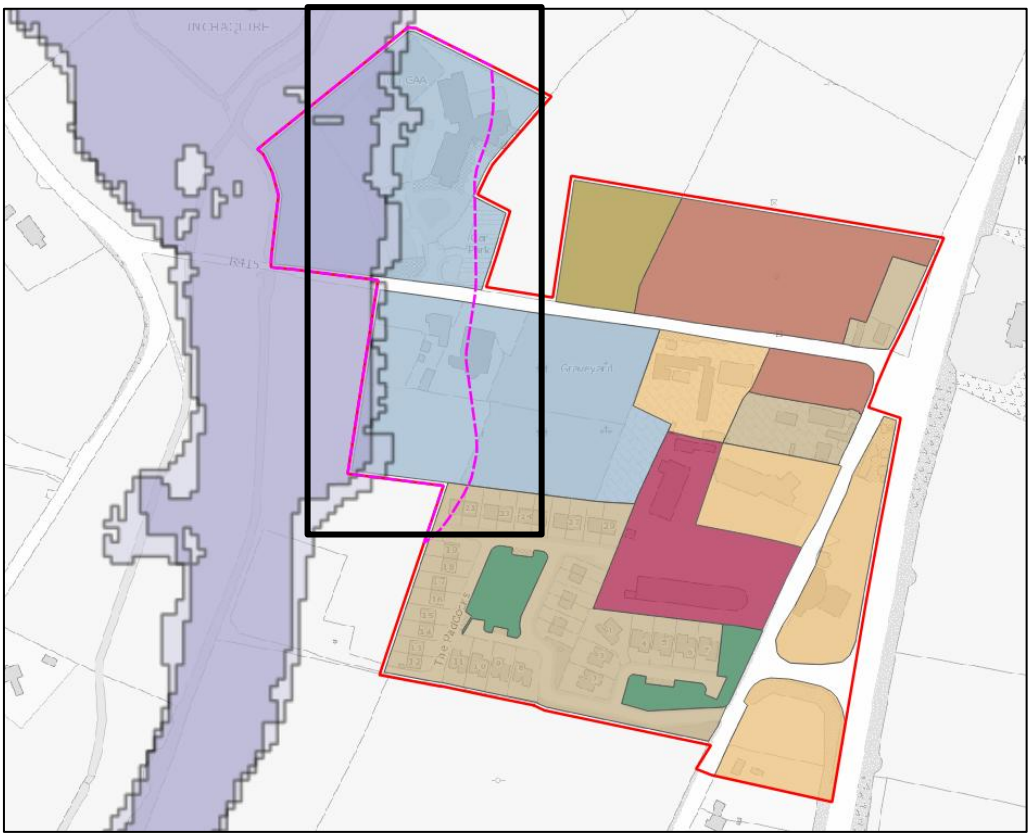
| (v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement. | Town centre lands and existing residential areas are already developed. It is considered reasonable to retain the use and zoning subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Castledermot highlighted multiple areas overlapping with Flood Zones A and B including the Castledermot wastewater treatment plant, community zoning at St. James Church, multiple agricultural zonings within the town boundary along with existing residential and commercial properties in the town centre along Main Street, Hamilton Road and adjacent to Doyle's Bridge. Part of a proposed new residential zoning north of the town centre also falls within Flood Zones A and B, however the flood extents is largely contained within the river channel with more minor flooding adjacent to the riverbank. The pre-existing and proposed zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br>• The FRA for the New Residential Zoning at Garterfarm should in particular examine the residual risk of climate change flooding, as the CFRAM mapping identified part of the site as being susceptible to 0.1 % AEP climate change flooding.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

**Kildare County Development Plan 2023-2029** **Crookstown: E – Community and Education**



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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Crookstown provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029. |
| 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: | Land Zoned: E – Community and Education,<br><br>Lands are located close to the village centre; zoning is required to maintain the proper planning and sustainable development of Crookstown. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. Lands potentially affected by flooding are zoned for community and education. A primary school, a church and a parish office exist on these lands. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes. Primary School, Church, and Parish Office already built. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. Lands adjoin village centre. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Provision for facilities here close to the village centre is essential to achieve compact growth. Potential may exist for other infill uses in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| | (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. | No. Lands are zoned to accommodate expansion and / or other community uses. New facilities should be clustered around existing ones and not encouraged elsewhere. It is considered reasonable to retain the use and zoning subject to a stipulation that any development |

| Kildare County Development Plan 2023-2029 | Crookstown: E – Community and Education |
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| | within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Crookstown shows two community and education sites overlapping with Flood zones A and B. For both sites (St. Laurence's National School and Saints. Mary and Laurence Church) are confined to water compatible uses (car parking and green space. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Derrinturn: A – Town Centre, B – Existing Residential / Infill, E – Community and Education |
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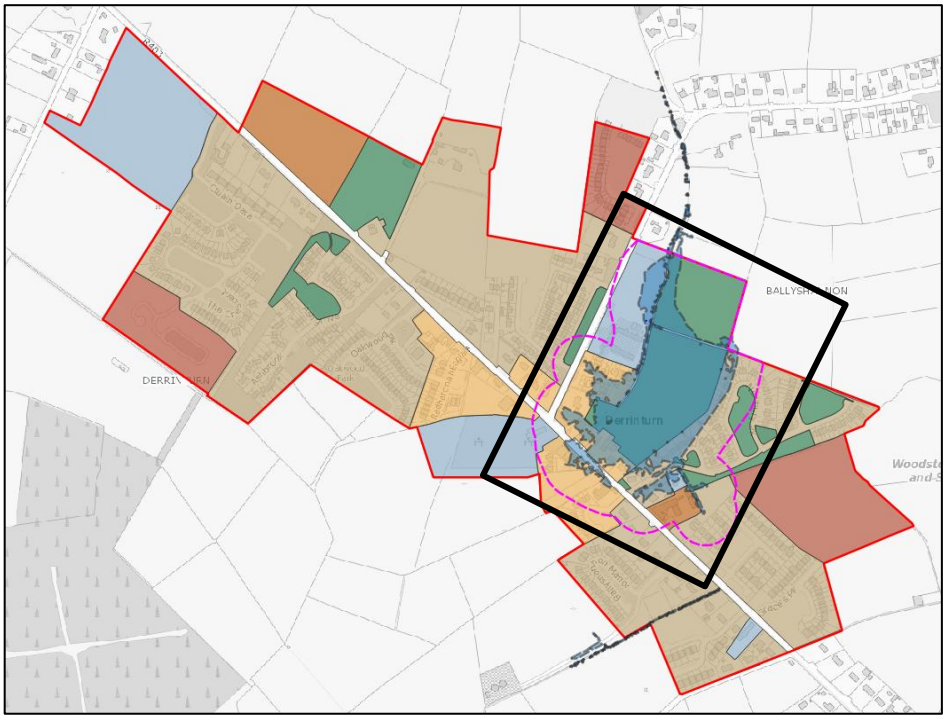


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| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Derrinturn provides a wide range of local service and employment functions and has accordingly been designated as a Small Town under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned: A – Town Centre, B – Existing Residential / Infill, E – Community and Education,<br><br>Lands are in the town centre and adjoin the town centre. Zoning is required to maintain the proper planning and sustainable development of Derrinturn. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. Lands zoned for town centre are essential to facilitate regeneration and / or expansion of the centre of the urban settlement. A large portion of the town centre zoned land is undeveloped and is required for expansion of the town centre.<br><br>Community and Education lands adjoining the town centre consist of a primary school and a local garda station which are essential to facilitate regeneration and expansion of the centre of the urban settlement.<br><br>Existing residential lands consist of Newbury Park and Oak Grove. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. A significant part of the town centre land is already developed and comprises retail and residential units (recently built residential development known as Oak Grove).<br><br>Community and education land consists of a primary school and a garda station. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. All lands identified are either in the town centre or adjoin the town centre. |

| Kildare County Development Plan 2023-2029 | Derrinturn: A – Town Centre, B – Existing Residential / Infill, E – Community and Education |
|---|---|
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Given, the proximity of the lands close to the town centre they will be essential in achieving compact and sustainable urban growth. Potential may exist for other infill uses in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| (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. | No. Part of the lands are already developed while the remaining is zoned to accommodate expansion of the town centre and the primary school to encourage compact growth. Potential exists for other infill uses in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the indicative flood zone mapping for Derrinturn highlighted multiple areas overlapping with Flood Zone B including existing residential and commercial properties in the town centre along Main Street (R403), Newbury Park and Oak Grove. They also highlighted Flood Zone B overlapping with community & education zonings namely the local primary school and garda station (flooding is contained to open space areas). The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Johnstown: A – Village Centre, B – Existing Residential / Infill, Q – Enterprise and Employment, C – New Residential, U – Utilities / Services |
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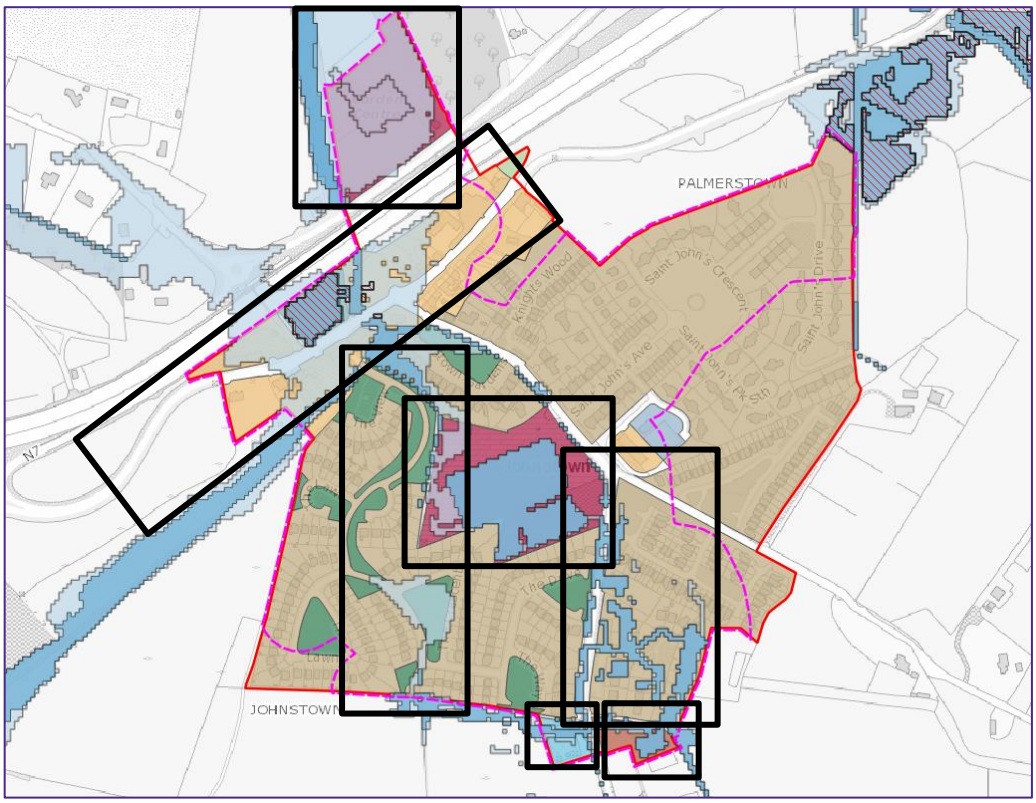


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap.. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Johnstown provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029. |
| 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: | Land Zoned: A – Village Centre, B – Existing Residential / Infill, Q – Enterprise and Employment, U – Utilities / Services, C – New Residential.<br><br>All lands have been developed or are underutilised in their current use and the zonings are required to maintain the proper planning and sustainable development of Johnstown. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. All lands within the identified sites have been developed or are underutilised in their current use and the proposed zonings would facilitate the regeneration of the urban settlement. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes. All lands within the identified sites have been developed. Q lands include Johnstown Garden Centre, indoor activity centre and a warehouse and distribution centre.<br><br>Existing Residential areas include Johnstown Gardens, Johnstown Manor, Furness Manor, among others. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | The 'New Residential' zoning in the southeast does not adjoin the village centre. All other identified sites are close to or adjoin the village centre. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Lands are already developed or are underutilised commercial uses within the urban settlement. Potential may exist for infill uses and new residential development in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with |

| Kildare County Development Plan 2023-2029 | Johnstown: A – Village Centre, B – Existing Residential / Infill, Q – Enterprise and Employment, C – New Residential, U – Utilities / Services |
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| | achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| (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. | No. Lands are already built out or are underutilised in their current use. Potential may exist for infill uses and new residential in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping highlighted multiple areas overlapping with Flood Zones A and B. Areas potentially impacted include existing residential and commercial properties in the village centre, existing residential estates in Johnstown Gardens and Furness Manor along with enterprise businesses and a substation along the L6035. The pre-existing zonings should be retained but any future development should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Johnstownbridge: B – Existing Residential / Infill, C- New Residential |
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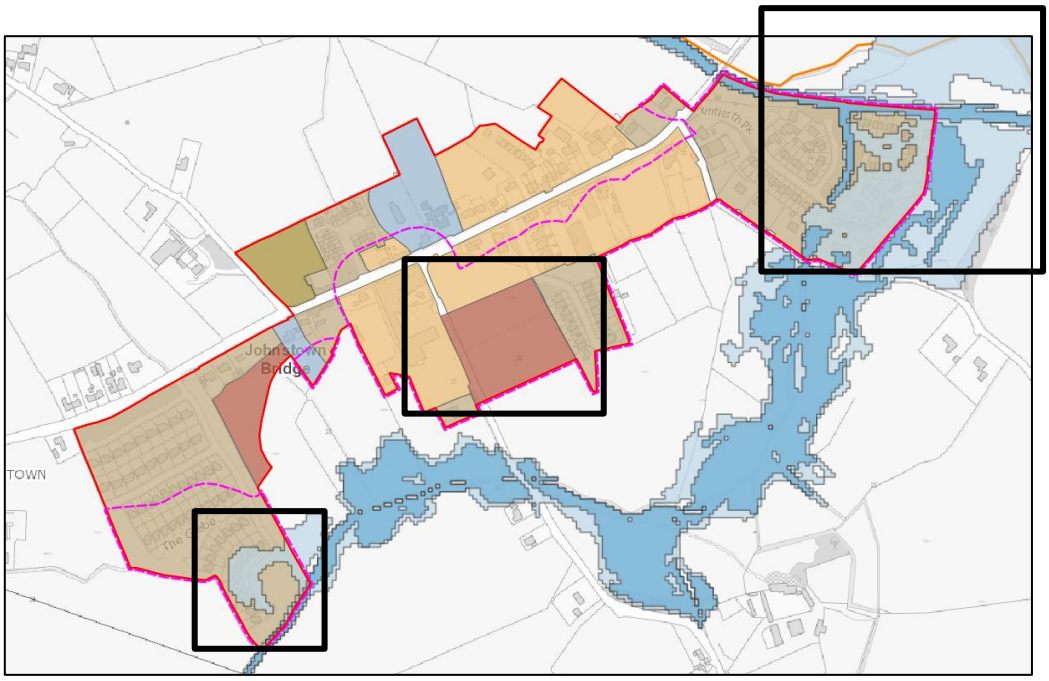


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Johnstownbridge provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029. |
| 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: | Land Zoned: B – Existing Residential / Infill, C- New Residential<br><br>The larger site adjoins the village centre and consists of an existing residential development known as Dunfierth Park while the smaller site to the south is close to the village centre and consist of an existing residential development known as the Glebe.<br><br>All lands have been developed and zoning is required to maintain the proper planning and sustainable development of Johnstownbridge. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. Lands in the existing residential zoned area are already developed. The zoning will allow for infill development where appropriate. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes. Both sites are developed and contain housing units. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. Larger site adjoins village centre while the smaller site is close to the village centre and adjoins other local amenities (e.g., Health Centre) |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Already built out. |
| | (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. | No. Both sites are developed and can facilitate infill development where appropriate. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping highlighted existing residential areas (The Glebe and Dunfierth Park) overlapping with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The |

| Kildare County Development Plan 2023-2029 | Johnstownbridge: B – Existing Residential / Infill, C- New Residential |
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| 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 | requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>The proposed new zoning at Gorteen is not located in the flood zones, however the site is potentially significantly inundated during the HEFS 0.1% AEP flooding event. The site has been zoned as New Residential and any planning application for the site should carry out a SSFRA that examines the HEFS climate change flooding scenario to examine the risk and see if development on the site is achievable. |

| Kildare County Development Plan 2023-2029 | Kilberry: Existing Settlement, Settlement Core, Settlement Expansion |
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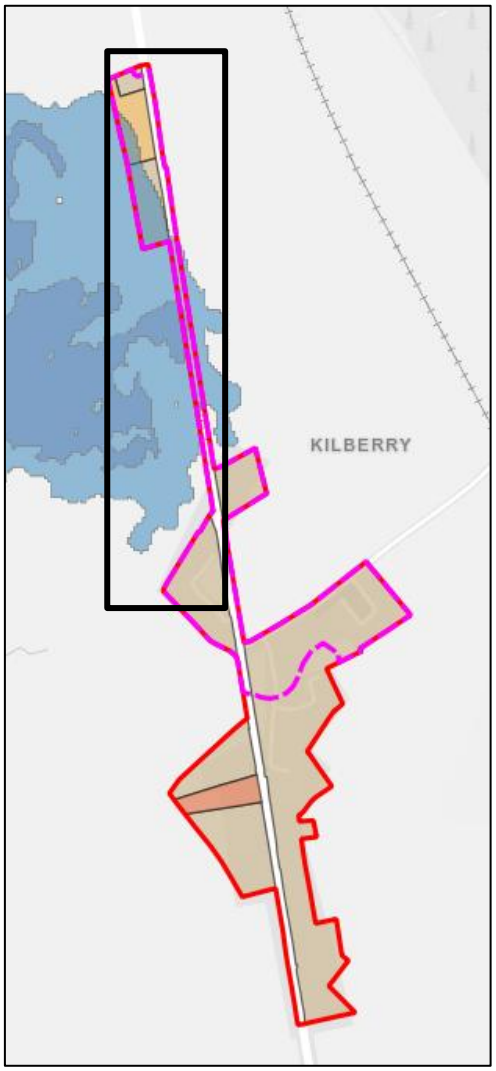


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| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Kilberry provides some local service functions and has accordingly been designated as a Settlement under the Kildare County Development Plan 2023-2029. |
| 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: | Land Designated: Existing Settlement, Settlement Core, Settlement Expansion<br><br>The settlement core consists of a school, while the adjoining settlement core consist of several one-off individual houses.<br><br>All lands have been developed and the current designations are required to maintain the proper planning and sustainable development of Kilberry. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The existing school is the settlement core with no other facilities or services located in this area. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. All lands are developed in the identified area and consist of a primary school and several existing houses. |

| Kildare County Development Plan 2023-2029 | Kilberry: Existing Settlement, Settlement Core, Settlement Expansion |
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| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. The existing school is the settlement core with no other facilities or services located in the settlement. The one-off individual houses adjoin the settlement core. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. This is the settlement core with adjoining residential use. |
| (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. | No. Lands are developed and can facilitate infill development / expansion where appropriate. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping for Kilberry highlighted existing zoned areas and the proposed settlement expansion areas (residential properties and the Kilberry National school) along the R417 overlapping with Flood Zones A and B. The pre-existing zonings and proposed should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>The proposed new settlement expansion area is also potentially significantly inundated during the HEFS 0.1% AEP flooding event. However, any planning application on the proposed settlement expansion sites should carry out a SSFRA that examines the climate change flooding scenarios to examine the risk and see if development on the sites are achievable. |

| Kildare County Development Plan 2023-2029 | Kilcullen: A-Town Centre/Settlement core |
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| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Kilcullen provides a wide range of local service and employment functions and has accordingly been designated as a Small Town under the Kildare County Development Plan 2023-2029, aligning with the RSES settlement hierarchy. |
| 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: | Land Designated: Town centre/Settlement core, Agriculture, and open space/amenities.<br><br>Lands are located within and adjoining the town centre, zoning is required to maintain the proper planning and development of Kilcullen. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Lands in the existing town centre zonings are already developed for town centre. The zonings of the land for town Centre will allow for infill development, where appropriate and facilitate the continued use of this site, which is essential to the vitality of the town centre and overall urban settlement. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. All lands are developed in the identified area and consist of apartments. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. All lands identified are either in the town centre or adjoin the town centre. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Town centre is already developed. Potential may exist for other infill uses in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| (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. | No. Lands are developed and can facilitate infill development / expansion where appropriate. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. The flood mapping indicates that a small part of town centre, agriculture, and open areas and amenities are located within Flood Zones A and B. The pre- |

| Kildare County Development Plan 2023-2029 | Kilcullen: A-Town Centre/Settlement core |
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| 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 | existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. Additionally, any future development within flood inundated areas predicted by the DAMBRK model for a natural 10,000-year flood, as well as potential dam breaches at Poulaphuca and Golden Falls and CFRAM climate change scenarios should also be subject to a SSFRA. The area where an SSFRA is required to support planning application considering the flood inundated area predicted by the DAMBRK model for a natural 10,000-year flood, as well as potential dam breaches at Poulaphuca and Golden Falls, and CFRAM climate change scenarios is depicted in Appendix B. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Kildangan: B – Existing Residential / Infill, E – Community and Education |
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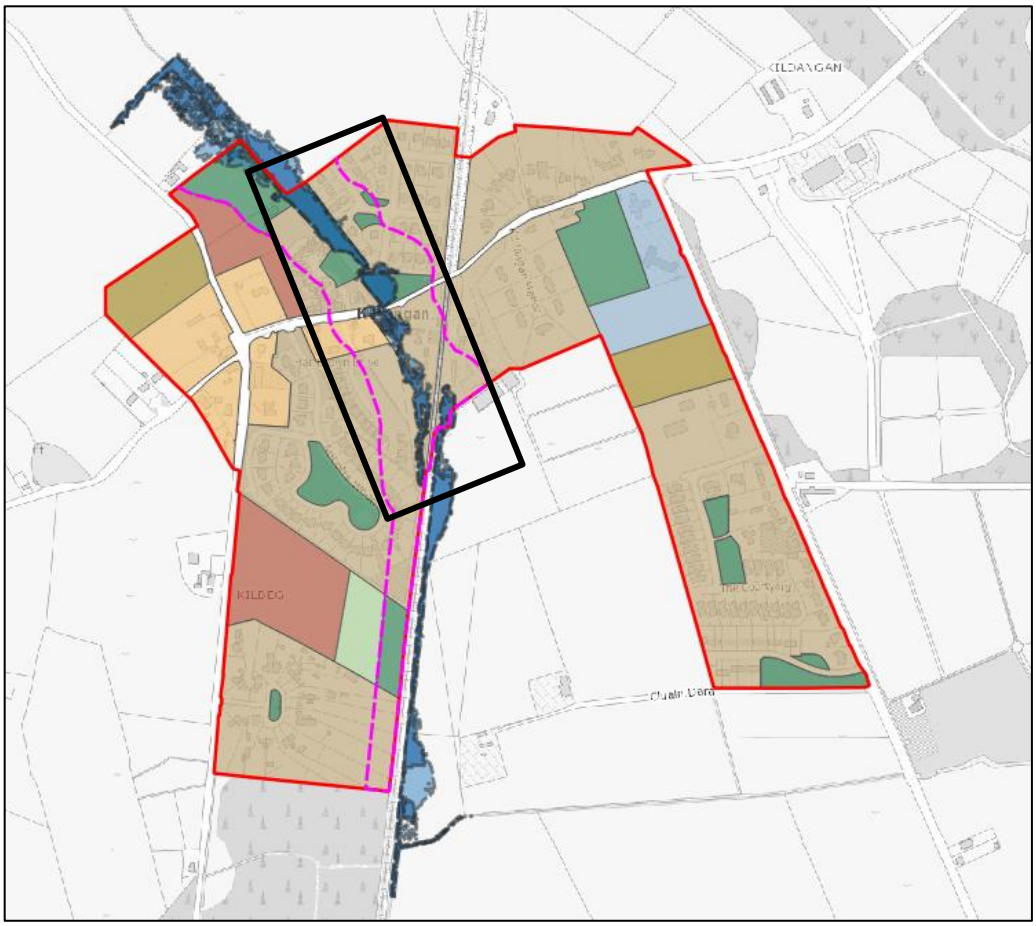


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| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Kildangan provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029. |
| 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: | Land Zoned: B – Existing Residential / Infill, E – Community and Education.<br><br>The sites identified include the local community hall, and existing residential developments known as Castlepark and the Paddocks.<br><br>All lands have been developed and zoning is required to maintain the proper planning and sustainable development of Kildangan. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The residential areas and community hall are essential to facilitate expansion of the centre of the urban settlement. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. The lands contain existing residential units and a community hall. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. The residential and community uses adjoin the 'Village Centre'. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Whilst the subject lands have already been zoned Existing Residential / Infill and Community and Education, the objectives allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the |

| Kildare County Development Plan 2023-2029 | Kildangan: B – Existing Residential / Infill, E – Community and Education |
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| | urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF |
| (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. | No. As outlined a large portion of the lands identified are already developed. Potential may exist for other infill uses in the future where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the indicative flood zone mapping for Kildangan highlights existing residential areas and the local community centre site overlapping with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Kilkea: Existing Residential |
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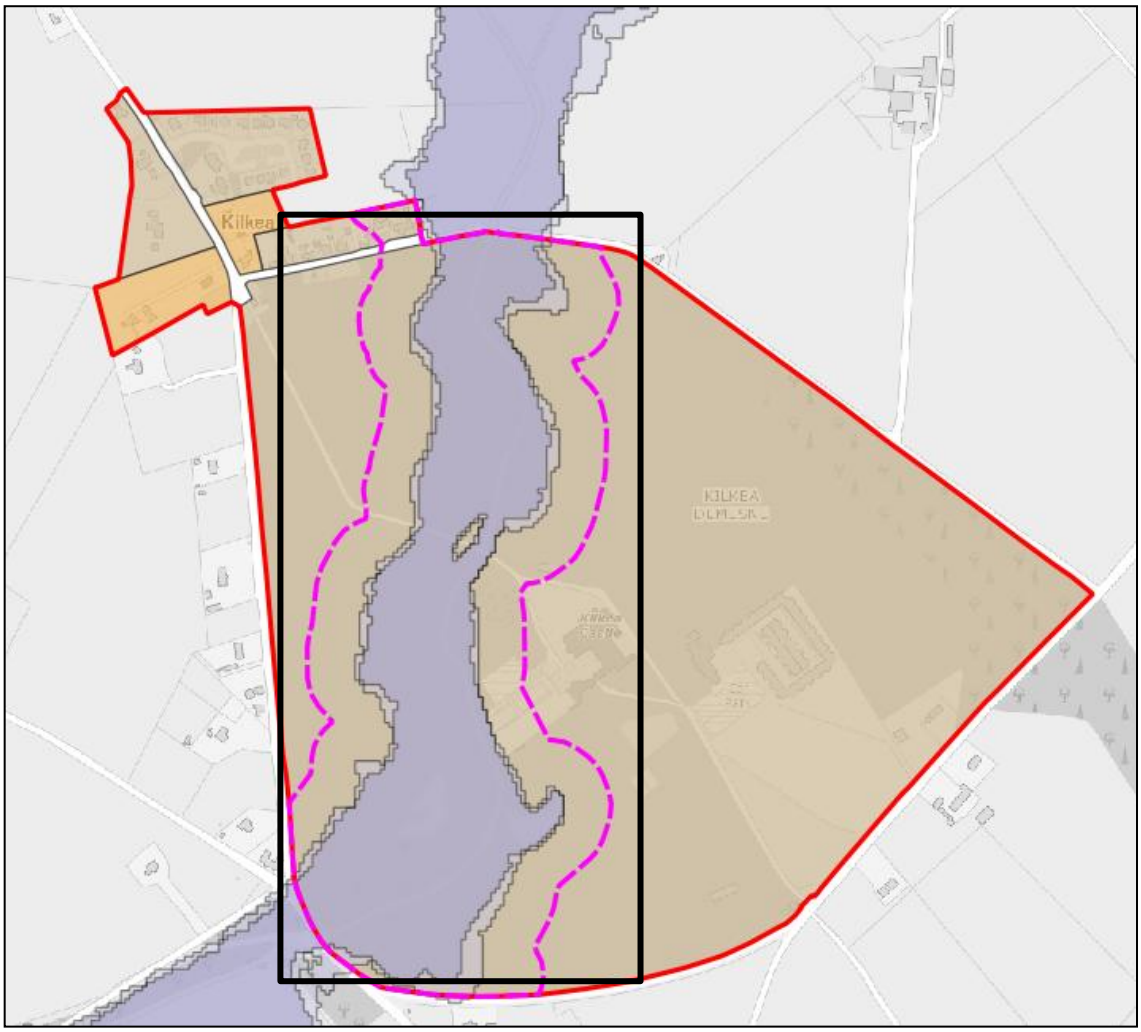


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Kilkea provides some local service functions and has accordingly been designated as a rural Settlement under the Kildare County Development Plan 2023-2029. |
| 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: | Land Designated: Existing Settlement<br><br>The subject lands comprise of the demesne of Kilkea Castle, which are designated as 'existing settlement' and overlap with Flood Zones A and B. The current designation of these lands is reflective of an existing, historic land use with respect to Kilkea. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. Kilkea Demesne is intrinsically linked to the settlement core, historically and economically. The Castle is in use as a hotel. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | The lands surrounding the castle comprise of a mature demesne landscape, forming an intrinsic part of the hotel and castle setting, which is in active use. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, is within the established designated rural settlement. The lands have been designated 'existing settlement'. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Kilkea Castle is a Protected Structure and there are a number of RMPs in the vicinity also. There are policies and objectives in place to protect the special character of the structure and its curtilage, in addition to protection of archaeology where identified. The designation |

| Kildare County Development Plan 2023-2029 | Kilkea: Existing Residential |
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| | of the lands will be essential in consolidating the growth of the core, which is adjacent to the Castle grounds. |
| (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. | Kilkea Castle is a unique employment and economic anchor in this rural settlement and there are no alternatives for this particular land use in proximity to the core. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping highlights the existing settlement zoning containing the Kilkea Castle Hotel has a large flood extents. The pre-existing zoning should be retained and while the Flood Zones are contained to open space the SFRA recommends future development in this area should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Kill: A – Town Centre & V – Equestrian |
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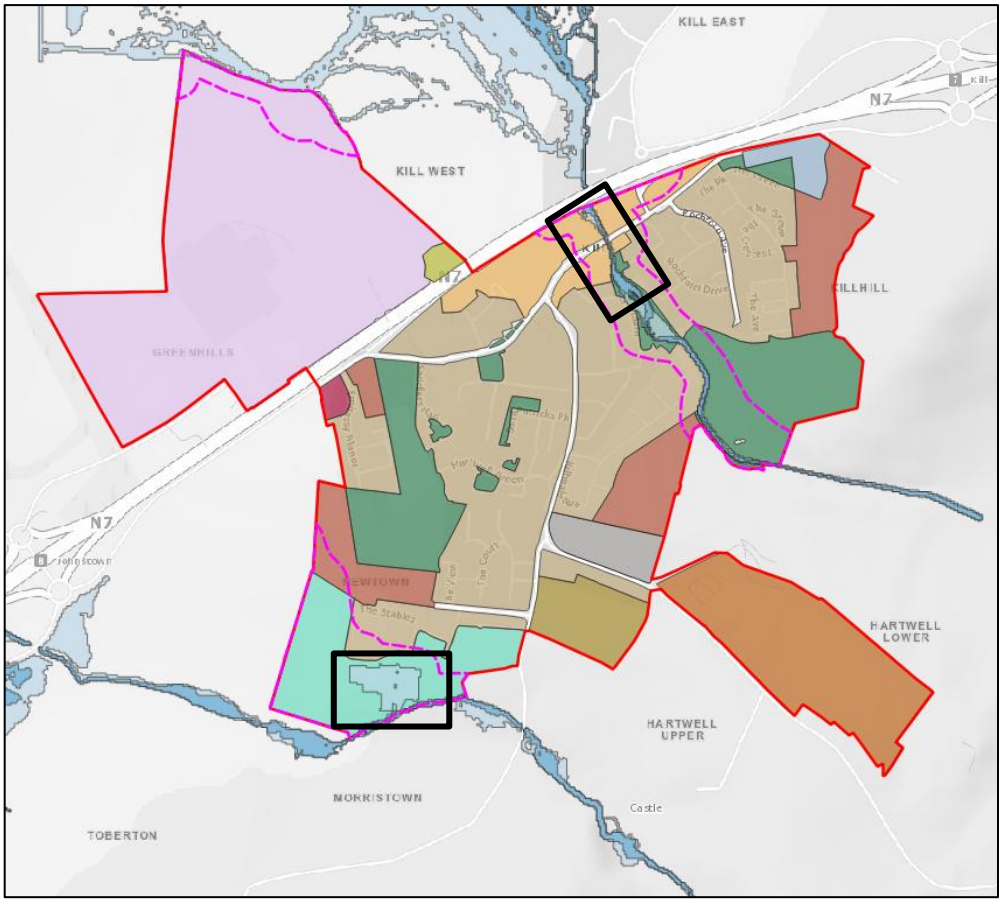


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| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 – 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Kill provides a wide range of local service and employment functions and has accordingly been designated as a Small Town under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned:<br><br>A - Town Centre (right) consists of commercial and residential properties<br><br>B - Existing Residential (right) - predominantly developed.<br><br>V - Equestrian (left) - Part of the Equestrian zoning overlaps with Flood Zone B. The flooding is contained to indoor and outdoor arenas.<br><br>The current zoning of these lands is required to maintain the proper planning and sustainable development of Kill. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The lands zoned town centre and existing residential have already been developed. The zoning of these lands will allow for infill development, where appropriate, to consolidate the urban settlement at a location that is within (and adjacent to) the designated town centre and prevent urban sprawl. The proximity of the Equestrian Centre to Kill has benefits to the town. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. Whilst the Equestrian site is not adjacent to the core, it is an important part of the settlement. |

| Kildare County Development Plan 2023-2029 | Kill: A – Town Centre & V – Equestrian |
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| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The zoning objectives allow for consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. With respect to the flood risk area identified on the V; Equine zoned lands, these have been assessed and are considered to be a compatible and non-vulnerable use, as the flood risk area is an outdoor exercising arena. |
| (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. | There are no suitable alternative lands for this use within the settlement. Having regard to the developed nature of the lands it is considered reasonable to retain the uses subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping highlights a small area of the town centre with residential properties overlapping with Flood Zones A and B. The mapping also shows that the equestrian zoning overlaps with Flood Zone B. The flooding is largely contained with indoor and outdoor arenas. The equestrian centre is not currently in use however the zoning does allow for a limited self-catering accommodation.<br><br>The pre-existing and proposed zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Maganey / Levitstown: Settlement Core, Settlement Expansion & Existing Settlement |
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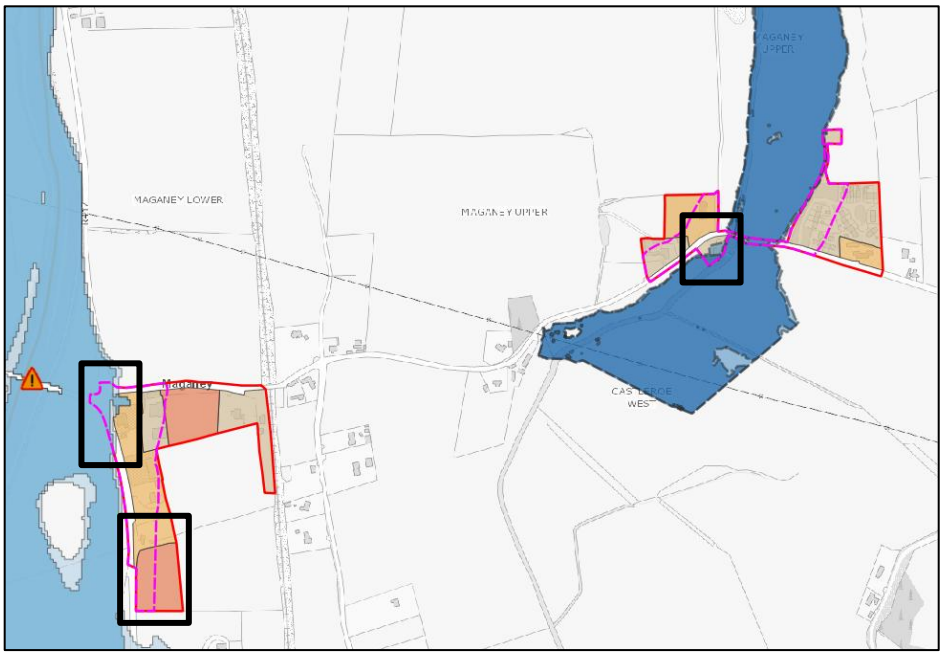


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| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 - 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Maganey / Levitstown provides some local service functions and has accordingly been designated as a rural Settlement under the Kildare County Development Plan 2023-2029. |
| 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: | Land Designated (not zoned):<br><br>Settlement Core (left and centre in image above) – there is a commercial development at the western location and a church and graveyard at the central location.<br><br>Existing Settlement (right) – there are existing dwellings at this location.<br><br>The current designation of these lands is required to maintain the proper planning and sustainable development of Maganey / Levitstown. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The designation of lands as 'Settlement Core' and 'Existing Settlement' will provide for infill development, where appropriate, to consolidate and regenerate the settlement and help reverse rural decline in the core, as provided for by NPO 16. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, is within the established designated settlement. The lands have been designated 'Settlement Core' and 'Existing Settlement' |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The objectives of the Plan allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| (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. | Having regard to the developed nature of the lands it is considered reasonable to retain the uses subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council |

| Kildare County Development Plan 2023-2029 | Maganey / Levitstown: Settlement Core, Settlement Expansion & Existing Settlement |
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| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping highlights a small area of the settlement core with a mixed-use property and exiting development which is the car park for the local church overlapping with Flood Zones A and B. The pre-existing and proposed zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>The proposed new settlement expansion along the R417 is not located in the flood zones, however the entrance to site is potentially significantly inundated during climate change flooding scenarios. Therefore any planning application for the site should carry out a SSFRA that examines the flooding scenarios to examine the risk and see if emergency access to the site can be achieved during a flooding event. |

| Kildare County Development Plan 2023-2029 | Newbridge: B – Existing Residential / Infill |
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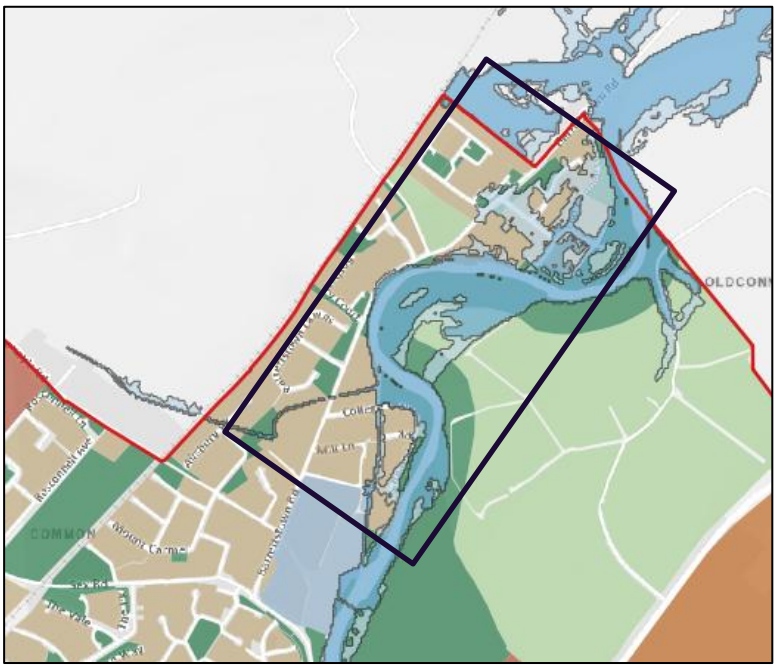

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| The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Newbridge provides a wide range of local service and employment functions and has accordingly been designated as a Self-Sustaining Growth Town under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned:<br>- B – Existing Residential / Infill,<br><br>Zoning is required to maintain the proper planning and development of Newbridge. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The land in the north of Newbridge zoned as existing residential / infill, comprises of the existing Old Connell Weir, Barrettstown Meadows, Riverside Park, Mill Lane, College Grove, Barrettstown Lawns, Barrettstown Roads, Ring of Roseberry, Ailesbury Park, and Abbey Manor residential estates. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. See (i) above. The lands identified are significantly previously developed. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | No. The land zoned as existing residential / infill in the north of Newbridge is not located within or adjacent to the core of the settlement. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The existing residential / infill lands are already developed. |
| (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 existing residential areas, community and education lands, industry and warehousing, and transport and utilities lands are already developed. It is considered reasonable to retain the use and zoning subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |

| Kildare County Development Plan 2023-2029 | Newbridge: B – Existing Residential / Infill |
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| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Newbridge highlighted multiple areas overlapping with Flood Zones A and B including multiple existing residential zonings, industry and warehousing zoning at Newbridge Industrial Estate, educational zoning at Newbridge College, Patrician Secondary School and Patrician Primary School, and transport and utilities zoning within the town boundary. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The delineated area requiring SSFRA includes all lands predicted to flood within the 0.1%AEP High-End Future Scenario. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>In accordance with Section 4.27a of the Planning Guidelines Circular PL 2-2014, existing land use which is categorised as a “highly vulnerable development” such as housing and is zoned for residential purposes, can also be located in Flood Zones A and B. Additional development such as small scale infill housing, extensions, or changes of use that could increase the risk or number of people in the flood-prone area can be expected in such a zone into the future.<br><br>Furthermore, in accordance with Section 5.28 of the FRM Planning Guidelines, the Justification Test does not apply for minor developments which cannot be located in lower-risk areas. However, an SSFRA should accompany such applications to demonstrate that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities. In accordance with Appendix B of the FRM Guidelines Technical Appendices, the SSFRA should include assessment of residual risk, exceedance, access and egress, flood resistant construction, flood resilient construction, raising floor levels, adapted internal layout, and emergency response planning.<br><br>The SSFRA should also address all types of mitigation measures to inform the assignment of appropriate land use with respect to vulnerability of the proposed development type.<br><br>The zoning has been considered as part of the development plan preparation, including the use of the Justification Test as appropriate. It is considered that the existing use zoning is still appropriate in accordance with Section 4.27a of the Planning Guidelines Circular PL 2/2014. No new ‘highly vulnerable development’ can be located within Flood Zone A or B or ‘less vulnerable development’ within Flood A with exception of Minor Development in accordance with Revised Section 5.28 of the Planning Guidelines for Flood Risk Management. The nature and design of structural or non-structural flood risk management measures required prior to future development in this area are provided in Section 7.1.2. |

| Kildare County Development Plan 2023-2029 | Newbridge: B – Existing Residential / Infill |
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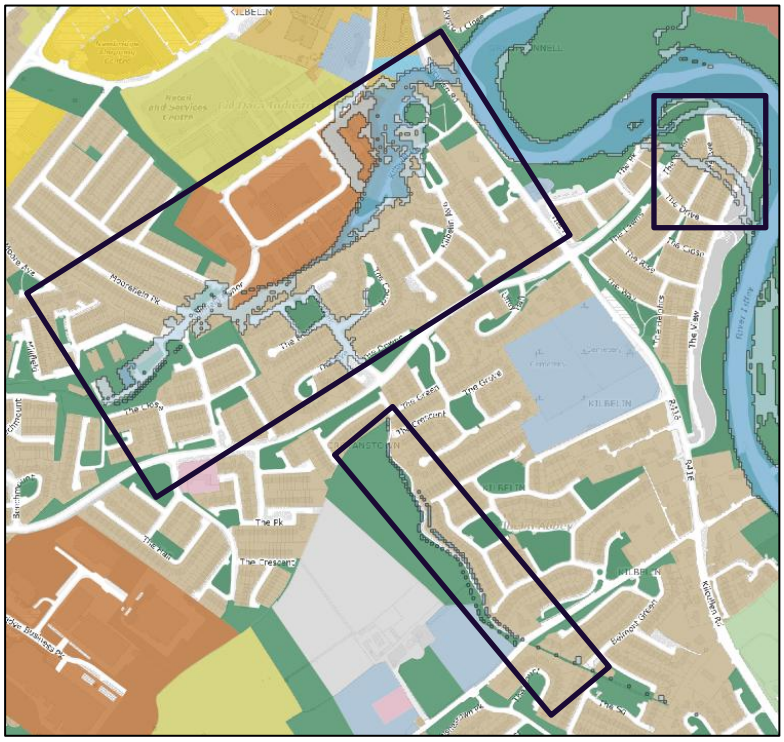

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| The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Newbridge provides a wide range of local service and employment functions and has accordingly been designated as a Self-Sustaining Growth Town under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned:<br>- B – Existing Residential / Infill,<br><br>Zoning is required to maintain the proper planning and development of Newbridge. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The land in the south of Newbridge zoned as existing residential / infill comprises of the existing Belin Wood, Kilbelin Park, Liffey Hall, Moorefield Park, Millfield, Curragh Grange, Kilbelin Abbey, Belmont Green, Walshestown Abbey, Walshestown Park, and Walshestown Crossroads residential estates. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. See (i) above. The lands identified are significantly previously developed. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | No. The land zoned as existing residential / infill in the south of Newbridge is not located within or adjacent to the core of the settlement. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The existing residential / infill lands are already developed. |
| (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 existing residential / infill zoned land is already developed. It is considered reasonable to retain the use and zoning subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |

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| 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. | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Newbridge highlighted multiple areas overlapping with Flood Zones A and B including multiple existing residential zonings, industry and warehousing zoning at Newbridge Industrial Estate, educational zoning at Newbridge College, Patrician Secondary School and Patrician Primary School, and transport and utilities zoning within the town boundary. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The delineated area requiring SSFRA includes all lands predicted to flood within the 0.1%AEP High-End Future Scenario. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>In accordance with Section 4.27a of the Planning Guidelines Circular PL 2-2014, existing land use which is categorised as a “highly vulnerable development” such as housing and is zoned for residential purposes, can also be located in Flood Zones A and B. Additional development such as small scale infill housing, extensions, or changes of use that could increase the risk or number of people in the flood-prone area can be expected in such a zone into the future.<br><br>Furthermore, in accordance with Section 5.28 of the FRM Planning Guidelines, the Justification Test does not apply for minor developments which cannot be located in lower-risk areas. However, an SSFRA should accompany such applications to demonstrate that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities. In accordance with Appendix B of the FRM Guidelines Technical Appendices, the SSFRA should include assessment of residual risk, exceedance, access and egress, flood resistant construction, flood resilient construction, raising floor levels, adapted internal layout, and emergency response planning.<br><br>The SSFRA should also address all types of mitigation measures to inform the assignment of appropriate land use with respect to vulnerability of the proposed development type.<br><br>The zoning has been considered as part of the development plan preparation, including the use of the Justification Test as appropriate. It is considered that the existing use zoning is still appropriate in accordance with Section 4.27a of the Planning Guidelines Circular PL 2/2014. No new ‘highly vulnerable development’ can be located within Flood Zone A or B or ‘less vulnerable development’ within Flood A with exception of Minor Development in accordance with Revised Section 5.28 of the Planning Guidelines for Flood Risk Management. The nature and design of structural or non-structural flood risk management measures required prior to future development in this area are provided in Section 7.1.2. |

| Kildare County Development Plan 2023-2029 | Newbridge: H – Industry and Warehousing, |
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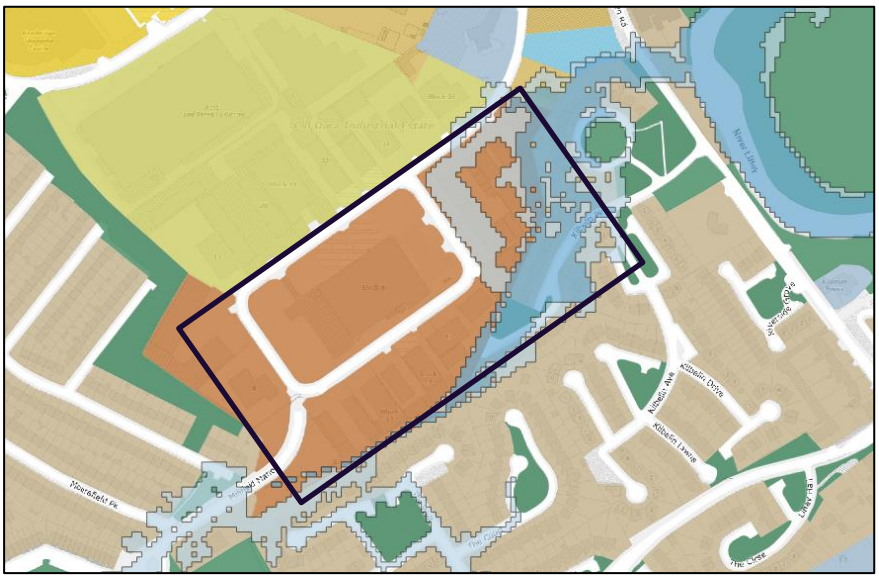

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| The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Newbridge provides a wide range of local service and employment functions and has accordingly been designated as a Self-Sustaining Growth Town under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned:<br>- H – Industry and Warehousing,<br><br>Zoning is required to maintain the proper planning and development of Newbridge. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The land in the south of Newbridge zoned as industry and warehousing, comprises of the Newbridge Industrial Estate. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. See (i) above. The lands identified are significantly previously developed. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | No. The land zoned as Industry and Warehousing in the south of Newbridge is not located within or adjacent to the core of the settlement. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The existing industry and warehousing lands are already developed. |
| (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 industry and warehousing zoned land is already developed. It is considered reasonable to retain the use and zoning subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Newbridge highlighted multiple areas overlapping with Flood Zones A and B including multiple existing residential zonings, industry and warehousing zoning at Newbridge Industrial Estate, educational zoning at Newbridge College, Patrician Secondary School and Patrician Primary School, and transport and utilities zoning within the town boundary. The pre-existing zonings should be retained but the SFRA recommends future development in |

| Kildare County Development Plan 2023-2029 | Newbridge: H – Industry and Warehousing, |
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| development and the local context and should be described in the relevant flood risk assessment. | these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The delineated area requiring SSFRA includes all lands predicted to flood within the 0.1%AEP High-End Future Scenario. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>In accordance with Section 4.27a of the Planning Guidelines Circular PL 2-2014, existing land use which is categorised as a “highly vulnerable development” such as housing and is zoned for residential purposes, can also be located in Flood Zones A and B. Additional development such as small scale infill housing, extensions, or changes of use that could increase the risk or number of people in the flood-prone area can be expected in such a zone into the future.<br><br>Furthermore, in accordance with Section 5.28 of the FRM Planning Guidelines, the Justification Test does not apply for minor developments which cannot be located in lower-risk areas. However, an SSFRA should accompany such applications to demonstrate that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities. In accordance with Appendix B of the FRM Guidelines Technical Appendices, the SSFRA should include assessment of residual risk, exceedance, access and egress, flood resistant construction, flood resilient construction, raising floor levels, adapted internal layout, and emergency response planning.<br><br>The SSFRA should also address all types of mitigation measures to inform the assignment of appropriate land use with respect to vulnerability of the proposed development type.<br><br>The zoning has been considered as part of the development plan preparation, including the use of the Justification Test as appropriate. It is considered that the existing use zoning is still appropriate in accordance with Section 4.27a of the Planning Guidelines Circular PL 2/2014. No new ‘highly vulnerable development’ can be located within Flood Zone A or B or ‘less vulnerable development’ within Flood A with exception of Minor Development in accordance with Revised Section 5.28 of the Planning Guidelines for Flood Risk Management. The nature and design of structural or non-structural flood risk management measures required prior to future development in this area are provided in Section 7.1.2. |

| Kildare County Development Plan 2023-2029 | Newbridge: U – Transport and Utilities, |
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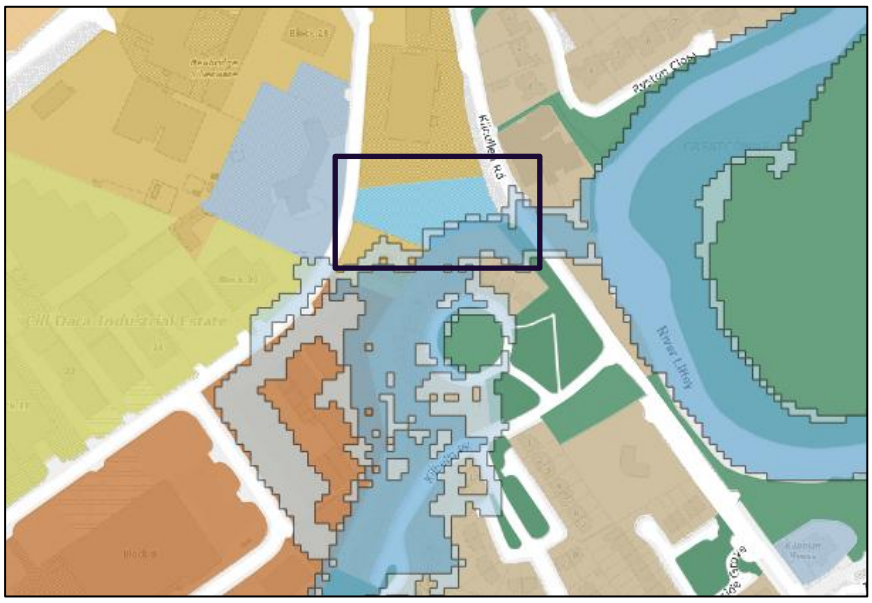

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| The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Newbridge provides a wide range of local service and employment functions and has accordingly been designated as a Self-Sustaining Growth Town under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned:<br>- U – Transport and Utilities,<br><br>Zoning is required to maintain the proper planning and development of Newbridge. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The land in the south of Newbridge zoned as transport and utilities comprises of a wastewater pumping station by the Newbridge Industrial Estate. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. See (i) above. The lands identified are significantly previously developed. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | No. The land zoned as transport and utilities in the east of Newbridge is not located within or adjacent to the core of the settlement. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The existing transport and utilities lands are already developed. |
| (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 transport and utilities zoned land is already developed. It is considered reasonable to retain the use and zoning subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Newbridge highlighted multiple areas overlapping with Flood Zones A and B including multiple existing residential zonings, industry and warehousing zoning at Newbridge Industrial Estate, educational zoning at Newbridge College, Patrician Secondary School and Patrician Primary School, and transport and utilities zoning within the town boundary. The pre-existing zonings should be retained but the SFRA recommends future development in |

| Kildare County Development Plan 2023-2029 | Newbridge: U – Transport and Utilities, |
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| development and the local context and should be described in the relevant flood risk assessment. | these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The delineated area requiring SSFRA includes all lands predicted to flood within the 0.1%AEP High-End Future Scenario. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>In accordance with Section 4.27a of the Planning Guidelines Circular PL 2-2014, existing land use which is categorised as a “highly vulnerable development” such as housing and is zoned for residential purposes, can also be located in Flood Zones A and B. Additional development such as small scale infill housing, extensions, or changes of use that could increase the risk or number of people in the flood-prone area can be expected in such a zone into the future.<br><br>Furthermore, in accordance with Section 5.28 of the FRM Planning Guidelines, the Justification Test does not apply for minor developments which cannot be located in lower-risk areas. However, an SSFRA should accompany such applications to demonstrate that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities. In accordance with Appendix B of the FRM Guidelines Technical Appendices, the SSFRA should include assessment of residual risk, exceedance, access and egress, flood resistant construction, flood resilient construction, raising floor levels, adapted internal layout, and emergency response planning.<br><br>The SSFRA should also address all types of mitigation measures to inform the assignment of appropriate land use with respect to vulnerability of the proposed development type.<br><br>The zoning has been considered as part of the development plan preparation, including the use of the Justification Test as appropriate. It is considered that the existing use zoning is still appropriate in accordance with Section 4.27a of the Planning Guidelines Circular PL 2/2014. No new ‘highly vulnerable development’ can be located within Flood Zone A or B or ‘less vulnerable development’ within Flood A with exception of Minor Development in accordance with Revised Section 5.28 of the Planning Guidelines for Flood Risk Management. The nature and design of structural or non-structural flood risk management measures required prior to future development in this area are provided in Section 7.1.2. |

| Kildare County Development Plan 2023-2029 | Newbridge: E – Community and Education |
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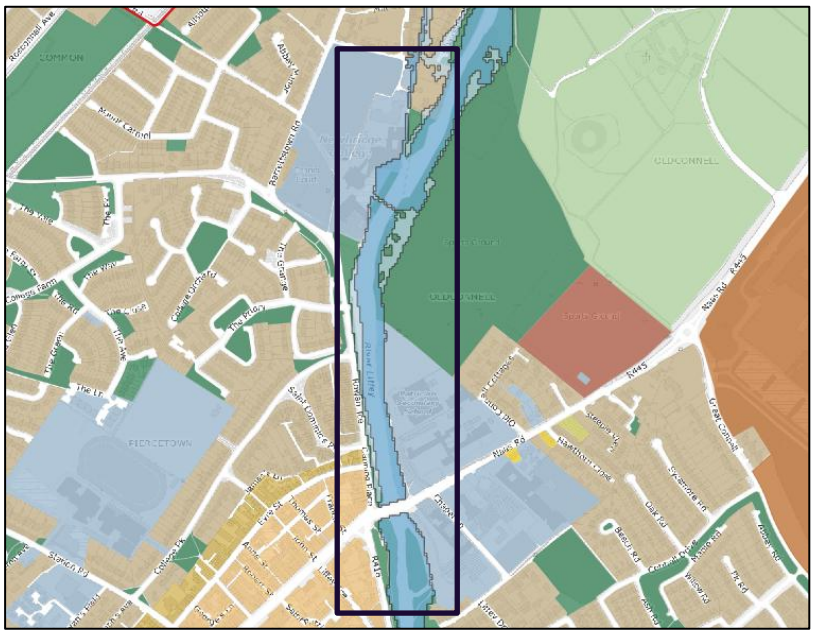

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| The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Newbridge provides a wide range of local service and employment functions and has accordingly been designated as a Self-Sustaining Growth Town under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned:<br>- E – Community and Education,<br><br>Zoning is required to maintain the proper planning and development of Newbridge. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The land zoned as community and education in the north of Newbridge comprises of the existing Newbridge College, Patrician Primary School, and Patrician Secondary School. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes. See (i) above. The lands identified are significantly previously developed. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes. The land zoned as Community and Education in the north of Newbridge is located adjacent to the core of the settlement. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. The existing community and education lands are already developed. |
| (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 community and education zoned land is already developed. It is considered reasonable to retain the use and zoning subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Newbridge highlighted multiple areas overlapping with Flood Zones A and B including multiple existing residential zonings, industry and warehousing zoning at Newbridge Industrial Estate, educational zoning at Newbridge College, Patrician Secondary School and Patrician Primary School, and transport and utilities zoning within the town boundary. The pre-existing zonings |

| Kildare County Development Plan 2023-2029 | Newbridge: E – Community and Education |
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| should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment. | should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The delineated area requiring SSFRA includes all lands predicted to flood within the 0.1%AEP High-End Future Scenario. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk.<br><br>In accordance with Section 4.27a of the Planning Guidelines Circular PL 2-2014, existing land use which is categorised as a “highly vulnerable development” such as housing and is zoned for residential purposes, can also be located in Flood Zones A and B. Additional development such as small scale infill housing, extensions, or changes of use that could increase the risk or number of people in the flood-prone area can be expected in such a zone into the future.<br><br>Furthermore, in accordance with Section 5.28 of the FRM Planning Guidelines, the Justification Test does not apply for minor developments which cannot be located in lower-risk areas. However, an SSFRA should accompany such applications to demonstrate that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities. In accordance with Appendix B of the FRM Guidelines Technical Appendices, the SSFRA should include assessment of residual risk, exceedance, access and egress, flood resistant construction, flood resilient construction, raising floor levels, adapted internal layout, and emergency response planning.<br><br>The SSFRA should also address all types of mitigation measures to inform the assignment of appropriate land use with respect to vulnerability of the proposed development type. Mitigation measures as included in Section 7.1.2 – Flood Risk Mitigation demonstrate this and as such the Justification Test is passed. |

| Kildare County Development Plan 2023-2029 | Nurney: Existing Settlement, Settlement Core |
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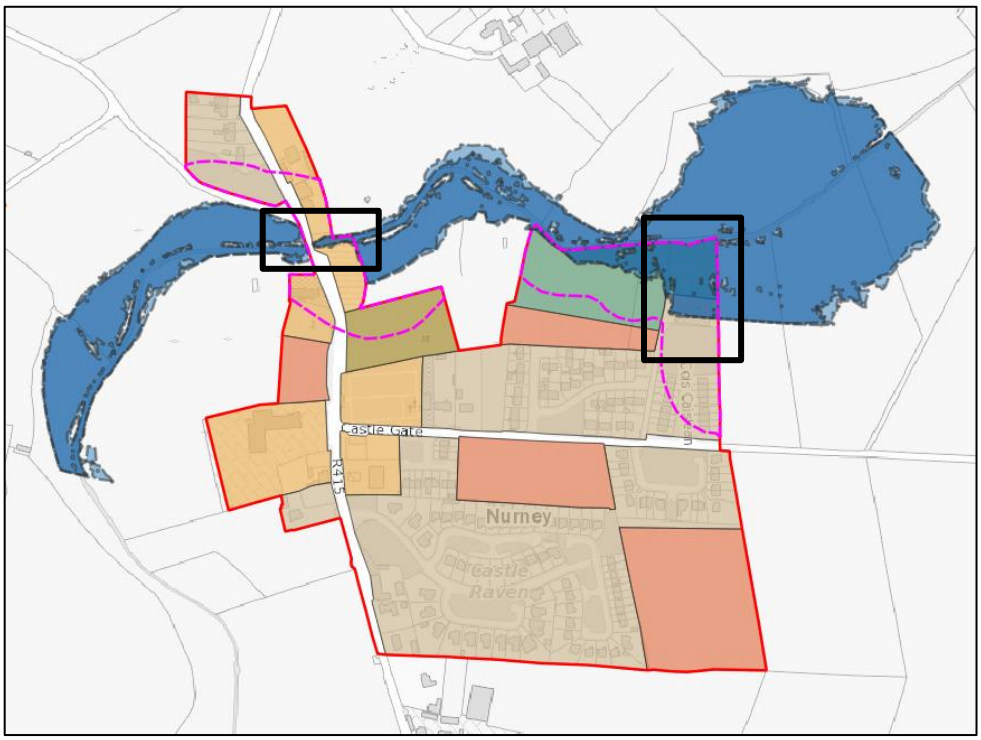


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 - 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Nurney provides some local service functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029. |
| 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: | Land Zoned: Existing Settlement, Settlement Core<br><br>The subject lands consist of a small area of the 'settlement core' along with lands at Cois Caisléan, which are designated as 'existing settlement' and overlap with Flood Zones A and B. The current designation of these lands is required to maintain the proper planning and sustainable development of Nurney. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | The small area within the 'settlement core' and the lands at Cois Caisléan residential development have already been developed.<br><br>The designation of lands as 'Settlement Core' and 'Existing Settlement' will allow for infill development, where appropriate, consolidate the urban settlement at a location that is within the settlement core and residential development in close proximity to the core of the settlement and prevent urban sprawl. Development will be subject to a detailed site specific Flood Risk Assessment |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, is within the established designated urban settlement. The subject lands are within and in close proximity to lands that have been designated 'settlement core'. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Whilst the subject lands have already been designated as settlement core and developed as residential use, the objectives allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF |

| Kildare County Development Plan 2023-2029 | Nurney: Existing Settlement, Settlement Core |
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| (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. | Having regard to the developed nature of the lands it is considered reasonable to retain the uses subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the indicative flood zone mapping highlights a small area of the centre core along with residential zonings at Cois Caisléan overlapping with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Prosperous: SS-Serviced Sites, A-Town Centre and B- Existing Residential |
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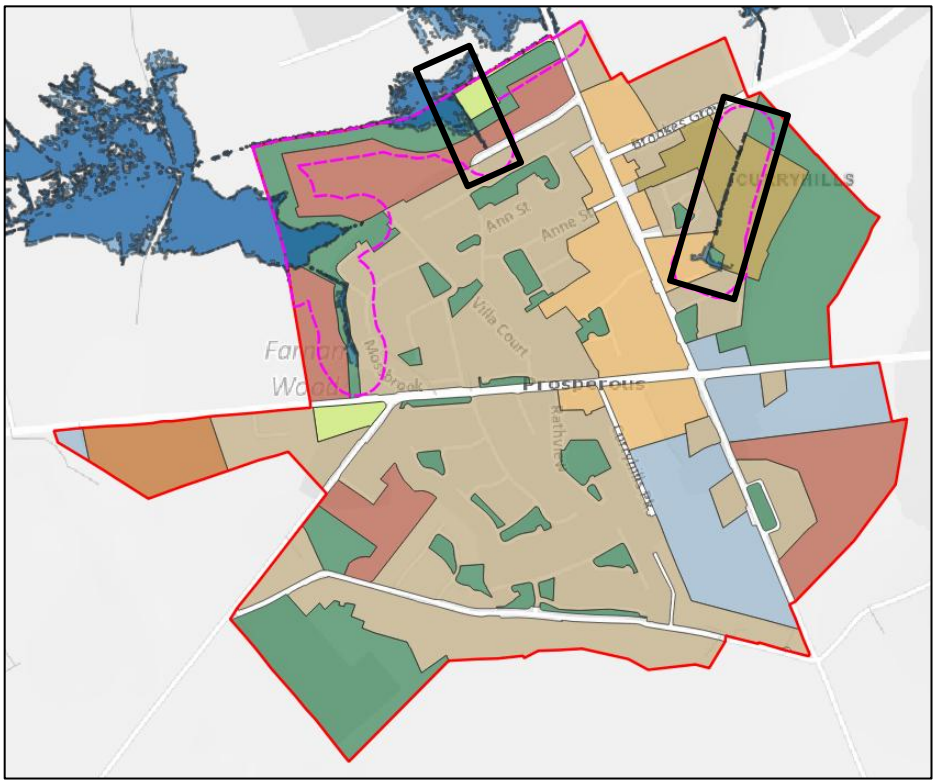


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 - 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Prosperous provides a wide range of local service and employment functions and has accordingly been designated as a Small Town under the Kildare County Development Plan 2023-2029, aligning with the RSES settlement hierarchy. |
| 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: | The following zonings overlap with Flood Zones A and B as follows:<br>SS: Serviced Sites<br>A: Town Centre<br>B: Existing Residential |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The 'B: Existing Residential lands are already built out. The 'SS: Serviced Sites' are located proximate to the town centre and are underutilized. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, all are close to the core and within the settlement boundary. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes, will be essential in facilitating compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. The 'I' lands are already in agricultural use. |
| | (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. | It is considered reasonable to retain the uses subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council |

| Kildare County Development Plan 2023-2029 | Prosperous: SS-Serviced Sites, A-Town Centre and B- Existing Residential |
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| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping in Prosperous highlighted some potential flooding in the northern part of the small town adjacent to the River Slate and its tributaries. KCC have followed the sequential approach to zone floodplains associated with these watercourses as open space. There is some minor predicted flooding overlapping with undeveloped land zoned as town centre and the centreline of drainage ditches (which are field boundaries) that are zoned as New Residential and Serviced Sites. The zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Rathangan: A – Town Centre, B – Existing Residential / Infill, I – Agriculture |
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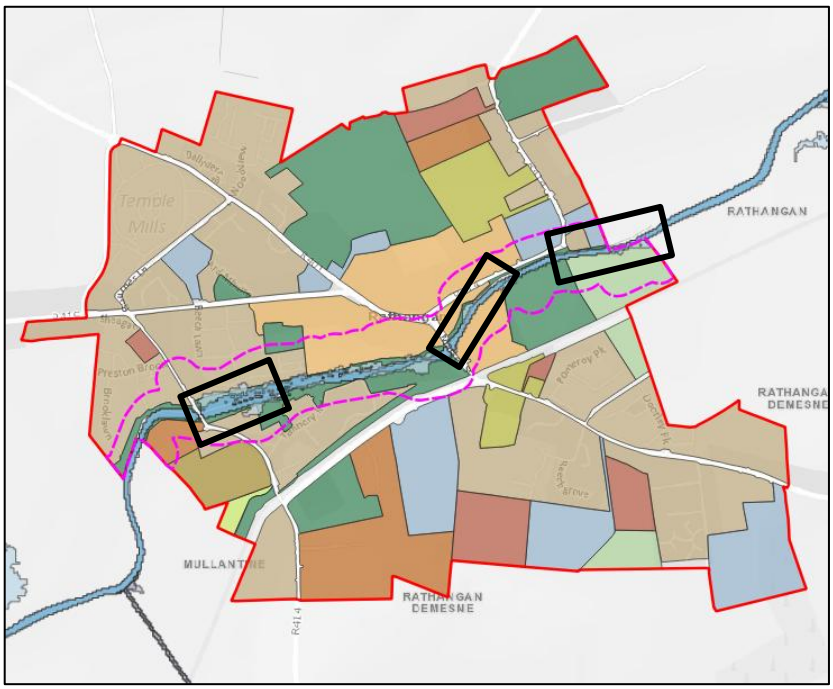


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 - 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Rathangan provides a wide range of local service and employment functions and has accordingly been designated as a Small Town under the Kildare County Development Plan 2023-2029, aligning with the RSES settlement hierarchy. |
| 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: | Three zonings which overlaps with Flood Zones A and B as follows:<br><br>B – Existing Residential / Infill (left, in image above) - The Tannery residential development),<br><br>A – Town Centre, (centre) - identified as an Opportunity Site.<br><br>I – Agriculture, (right) reflects existing land use. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. Lands at the Tannery residential development have already been developed for residential use. The zoning of the lands for 'B - Existing / Infill Residential will allow for infill development, where appropriate, to consolidate the urban settlement at a location that is in close proximity to the town centre and prevent urban sprawl. It is however considered appropriate to zone the areas of open space within the estate located within the flood zones as 'Open Space'.<br><br>The lands zoned 'A-Town Centre' present well sequentially in terms of compact growth, particularly having regard to the objectives contained within the plan. Existing structures on this site are of heritage importance and their regeneration and reuse will have significant beneficial impacts on the settlement. |
| | (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands. The Agriculture zoning reflects existing use at that location. |
| | (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, all are close to the core and within the settlement boundary. |
| | (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Whilst the 'B' lands are already developed as residential use, the zoning objectives allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. The 'A' lands, given their prominent |

| Kildare County Development Plan 2023-2029 | Rathangan: A – Town Centre, B – Existing Residential / Infill, I – Agriculture |
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| | location in the centre of the core, between the Grand Canal and River Slate, will be essential in facilitating compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. The 'I' lands are already in agricultural use. |
| (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. | Having regard to the developed nature and location of the lands (B, A and I) it is considered reasonable to retain the uses subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping highlights a small area of the existing residential zoning at The Tannery overlapping with Flood Zones A and B. There is also areas with open spaces zoned as town centre and agricultural overlapping with Flood Zone B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>It is also noted that the Newbridge flood relief scheme is to be progressed in the future and will be funded under the OPW's flood relief capital works programme.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Staplestown: Existing Settlement, Settlement Core |
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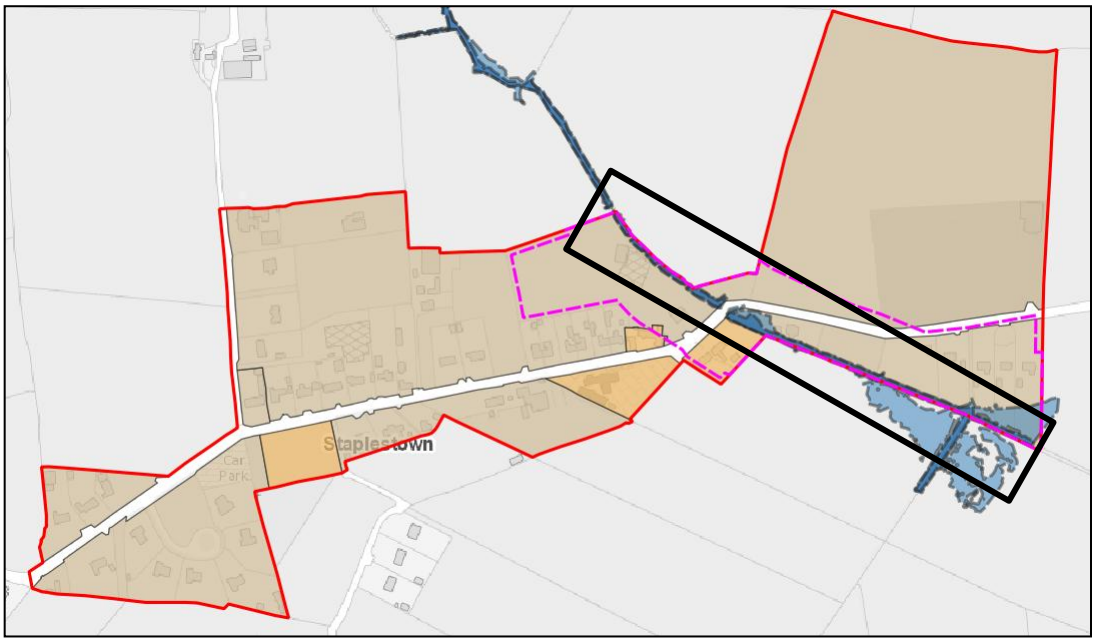


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| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 - 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Staplestown provides some local service functions and has accordingly been designated as a Rural Settlement under the Kildare County Development Plan 2023-2029. |
| 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: | Land is designated as 'Existing Settlement', 'Settlement Core'.<br><br>The subject lands consist of a small area of the 'settlement core' along with landsat Clogheraun Brook, which are designated as 'existing settlement' and overlap with Flood Zones A and B. The current designation of these lands is required to maintain the proper planning and sustainable development of Staplestown. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The small area within the 'settlement core' and the lands at Clogheraun Brook residential development have already been developed.<br><br>The designation of lands as 'Settlement Core' and 'Existing Settlement' will allow for infill development, where appropriate, consolidate the settlement and prevent sprawl. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, is within the established designated settlement. The subject lands are within and in close proximity to lands that have been designated 'settlement core'. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Whilst the subject lands have already been designated as settlement core and partially developed as residential use, the objectives allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable growth within the settlement, in accordance with NSO 1 'Compact Growth' of the NPF |
| (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. | Having regard to the existing uses on these lands it is considered reasonable to retain the designation subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council, as indicated on the Staplestown Rural Settlement Map. |

| Kildare County Development Plan 2023-2029 | Staplestown: Existing Settlement, Settlement Core |
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| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the indicative flood zone mapping highlights some limited flooding along the banks of the Derrycrib River overlapping with the Settlement Core and Existing Settlement zonings. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Suncroft: B – Existing Residential / Infill, E – Community and Education |
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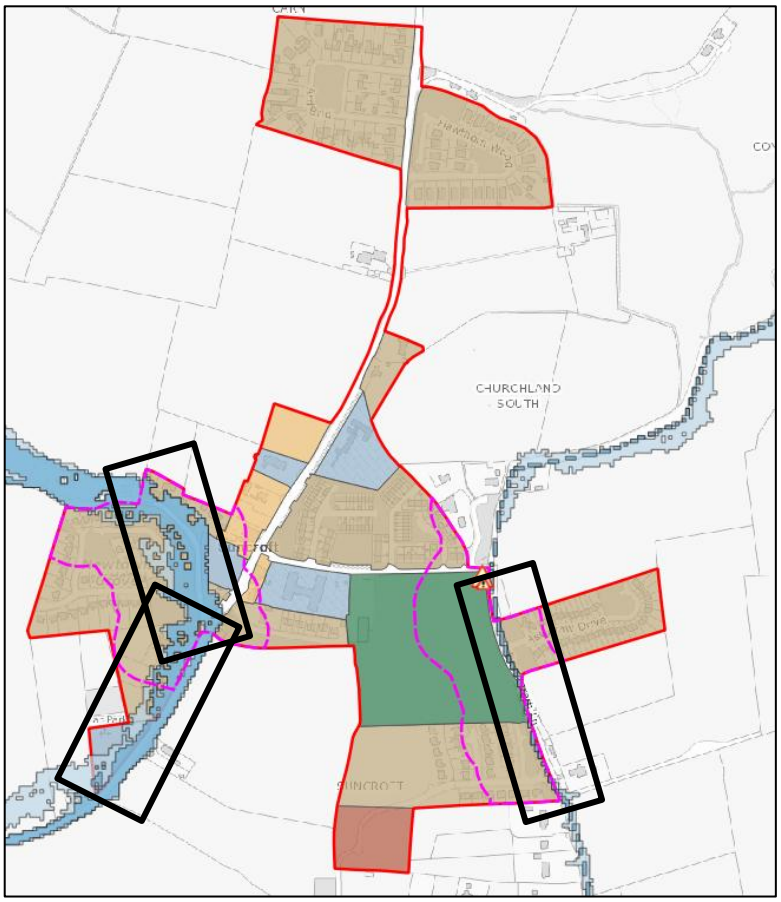


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| 1 | The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 - 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Suncroft provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned: B – Existing Residential / Infill, E – Community and Education (and small section of A: Village Centre)<br><br>The subject lands consist of Newtown Grove, Askinraw Lane, Eascanrath Brook housing estates and properties along the L3007, and the local cemetery. These lands overlap with Flood Zones A and B. The current zoning of these lands is required to maintain the proper planning and sustainable development of Suncroft. |
| | (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. Lands along the L3007 and the Newtown Grove Housing Askinraw Lane and Eascanrath Brook Estates have already been developed for residential use and the local cemetery is already in use. These locations will facilitate regeneration within the settlement and prevent sprawl.<br><br>The zoning of the lands for 'B - Existing / Infill Residential and E – Community & Education will allow for infill development, where appropriate, consolidate the urban settlement at a location that is adjacent to the village centre and prevent urban sprawl. Development will be subject to a detailed site specific Flood Risk Assessment |

| Kildare County Development Plan 2023-2029 | Suncroft: B – Existing Residential / Infill, E – Community and Education |
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| (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands. |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, is within the established designated urban settlement. The lands in the western section are adjacent to Village Centre zoned lands. The lands in the eastern section are within the settlement boundary and present well for infill opportunity to facilitate compact growth. |
| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Whilst the subject lands are already developed as residential and community use, the zoning objectives allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF |
| (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. | Having regard to the developed nature of the lands it is considered reasonable to retain the uses subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. This is indicated on the Land Use Zoning map. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the flood zone mapping for Suncroft highlights existing residential areas (Newtown Grove, Askinraw Lane, Eascanrath Brook housing estates and properties along the L3007) and the local cemetery overlapping with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |

| Kildare County Development Plan 2023-2029 | Timolin: A – Town Centre, B – Existing Residential / Infill, E – Community and Education |
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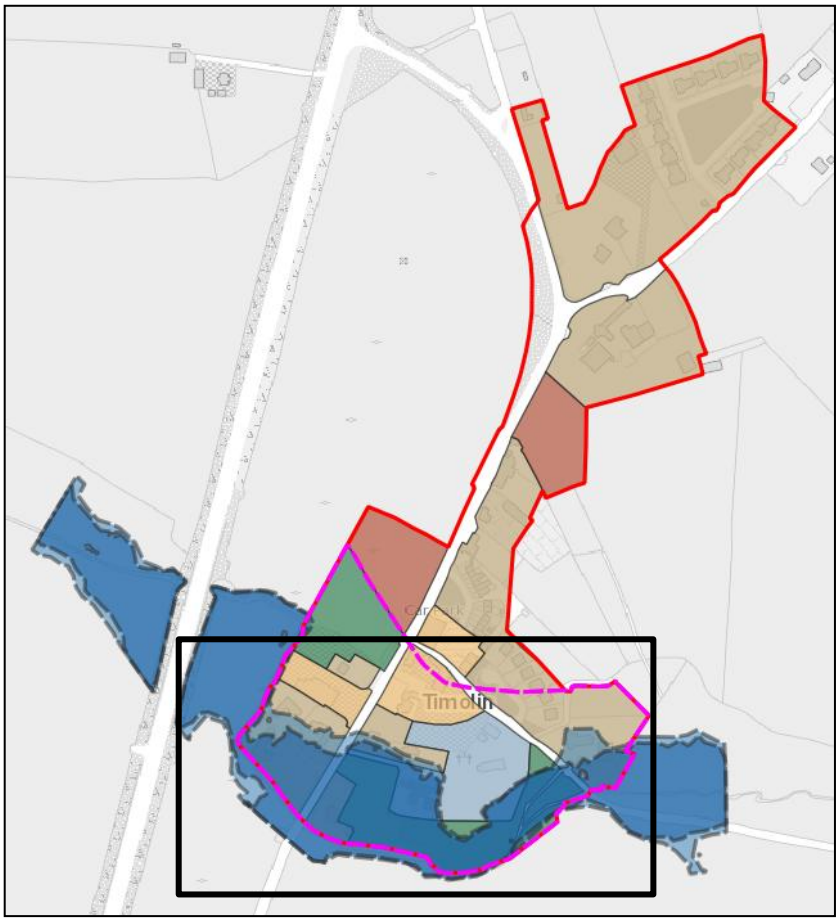


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| 1 The Regional Spatial Economic Strategy for the Eastern Midlands Region 2019 - 2031 sets out the planned direction for growth within the Greater Dublin Area up to 2031 by giving regional effect to national planning policy under Project Ireland 2040; the National Planning Framework & its Implementation Roadmap. | The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031 sets out the planned direction for sustainable growth within the Eastern and Midland Region up to 2031. The RSES provides regional level strategic planning and economic policy in support of the implementation of the National Planning Framework (NPF) and provides a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.<br><br>Timolin provides local service and employment functions and has accordingly been designated as a Village under the Kildare County Development Plan 2023-2029, aligning with the RSES Settlement Hierarchy. |
| 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: | Land Zoned: A- Village Centre, B – Existing Residential / Infill, E – Community and Education.<br><br>The subject lands consist of existing residential and village centre areas along the L8037 and the grounds around Saint Mullin's Church. The current zoning of these lands is required to maintain the proper planning and sustainable development of Timolin. |
| (i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement, | Yes. The lands along the L8037 and the grounds around Saint Mullin's Church have already been developed for residential use, village centre and community use. The zoning of the lands for 'B - Existing / Infill Residential, A- Village Centre and E – Community & Education will allow for infill development, where appropriate, consolidate the settlement at a location that is adjacent to the village centre and prevent urban sprawl. Development will be subject to a detailed site specific Flood Risk Assessment. |
| (ii) Comprises significant previously developed and / or underutilized lands, | Yes, comprises significant previously developed lands |
| (iii) Is within or adjoining the core of an established or designated urban settlement, | Yes, is within the established designated urban settlement. The subject lands are within or adjacent to lands that have been zoned A; Village Centre. |

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| (iv) Will be essential in achieving compact and sustainable urban growth, and | Yes. Whilst the subject lands are already developed in part as residential, village centre and community use, the zoning objectives allow for appropriate consolidation and infill development, where appropriate and subject to normal planning assessments including SSFRA. This aligns with achieving compact and sustainable urban growth within the urban settlement, in accordance with NSO 1 'Compact Growth' of the NPF. |
| (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 are best located within the settlement for village centre and community purposes, which is reflected in the proposed zoning. Having regard to the developed nature of the lands it is considered reasonable to retain the uses subject to a stipulation that the areas within the flood risk zone include measures to mitigate against flooding. Prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council. This is indicated on the Land Use Zoning Map. |
| 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 | A SFRA was completed as part of the CDP 2023-2029. A review of the indicative flood zone mapping for Timolin highlights existing residential areas in the town centre and along the L8037 along with the grounds around Saint Mullin's Church overlapping with Flood Zones A and B. The pre-existing zonings should be retained but the SFRA recommends future development in these areas should be subject to a SSFRA. The requirements for SSFRAs are outlined in Table A-1 of Appendix A of the SFRA.<br><br>All proposed development located within the delineated Flood Risk Assessment boundaries as shown on the Flood Zone Map in Appendix B of the CDP SFRA should carry out a SSFRA as part of their planning application. The SSFRAs should be carried out in accordance with the following:<br><br>• The Planning System and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014);<br>• The flood risk management policies outlined in the KCC CDP 2023-2029; and<br>• The recommendations and observations in Chapter 4, Chapter 7 and Appendix A of the CDP SFRA.<br><br>Also, all planning applications are required to be developed in accordance with the KCC CDP surface water and drainage policies and to undertake a Surface Water Management Plan to mitigate any potential pluvial flood risk. |