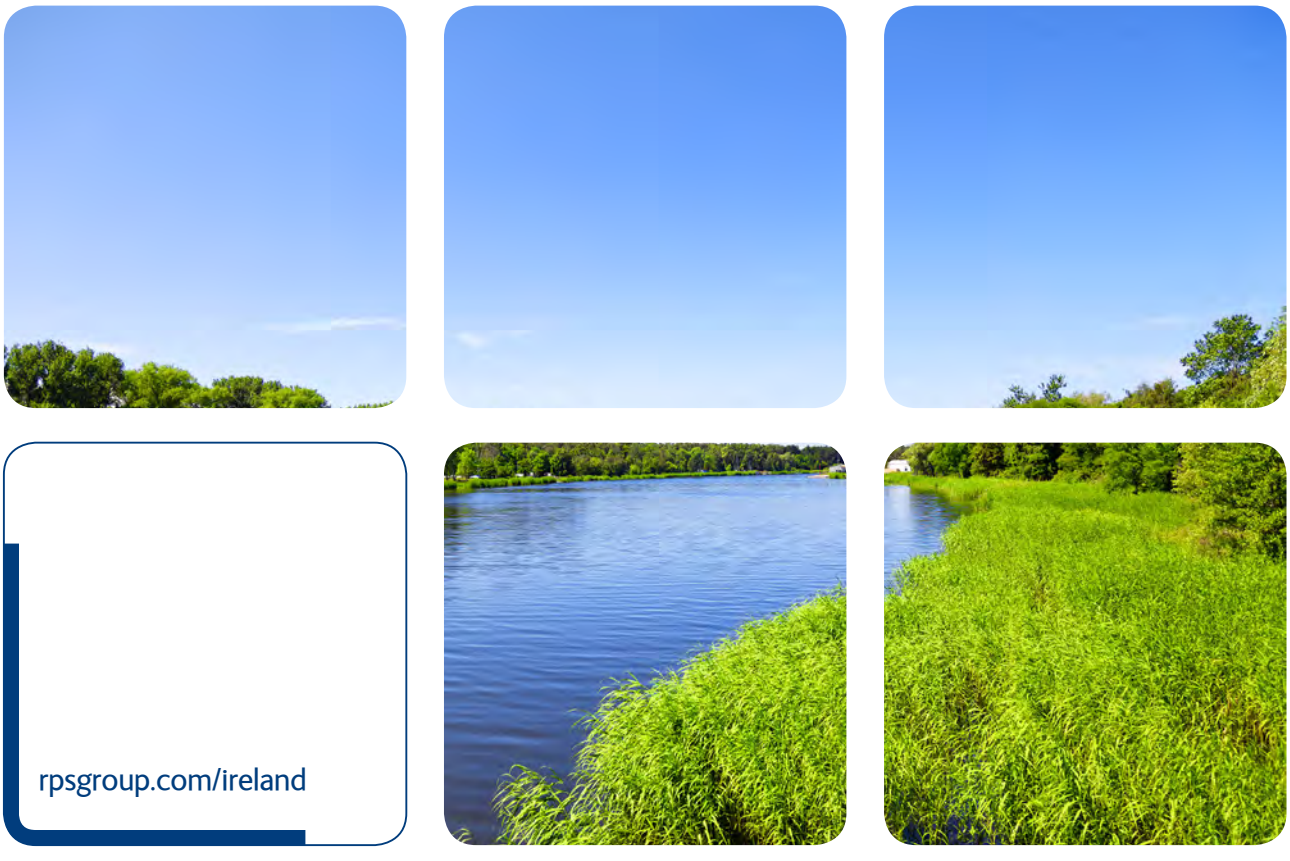
Strategic Flood Risk Assessment of the Kildare County Development Plan 2017-2023

MDW0710Rp0004 September 2016



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1 INTRODUCTION

1.1 BACKGROUND

In compliance with the Directive and the Planning and Development (Strategic Environmental Assessment) Regulations 2004-2011, Kildare County Council (KCC) has carried out a Strategic Environmental Assessment (SEA) of the Kildare County Development Plan for the period 2017–2023 and has prepared an Environmental Report of the likely significant effects on the environment of implementing the new Plan.

The Environmental Protection Agency (EPA) SEA Scoping Guidance Document 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 Strategic Flood Risk Assessment (SFRA) Report be undertaken to support the SEA of proposed development plans. As recommended, KCC commissioned a SFRA to inform the policy and land use decisions in areas at risk of flooding within the County.

A Draft SFRA was completed in February 2016 and was presented with the Draft County Development Plan to Elected Members of KCC on 1st March 2016. The Members of KCC had 8 weeks to consider the proposed Draft County Development Plan and the Draft Plan was adopted on the 20th April 2016. The Draft Plan entered a statutory consultation period from 4th May to July 13th 2016. Following this consultation period, submissions on the SFRA were reviewed and the SFRA has been amended accordingly.

1.2 REPORT OBJECTIVES

The objective of this report is to prepare a SFRA for the Kildare County Development Plan 2017-2023. The Report was 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 provides an assessment of all types of flood risk within the County and assisted KCC to make informed strategic land-use planning decisions and formulate flood risk policies. A review of available flood risk information was undertaken to identify any flooding or surface water management issues related to the County that may warrant further investigation. The best available data at the time of preparation was acquired from the Office of Public Works (OPW) Eastern and South Eastern Catchment Flood Risk Assessment Management (CFRAM) Studies. The CFRAM Studies generated draft flood zone mapping and the indicative flood mapping generated for the SFRA has enabled 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.

1.3 DISCLAIMER

The SFRA has been prepared in compliance with the Guidelines. However it should be noted that the SFRA remains a living 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 County Development Plan. All information in relation to flood risk is provided for general policy guidance only. All landowners and developers are instructed that Kildare County Council 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 CFRAM mapping used to define the flood zones for this SFRA are at Draft Final stage and are subject to change following a stakeholder and public consultation process. However the CFRAM mapping is the most comprehensive flood zone mapping available for the County and is considered appropriate for use as a strategic overview of flood risk within the County. Further information on the Eastern and South Eastern CFRAM studies is available at www.cfram.ie. 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 below), rather than information for floods that have occurred in the past.

CFRAM mapping is not available for all zoned locations and land use maps within the County Development Plan. For the areas where CFRAM mapping was not available, Indicative flood zones were generated using 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. It should be noted that the analysis is not as robust the CFRAM mapping but does represent a significant increase in the confidence of the Flood Zones compared to OPW Preliminary Flood Risk Assessment (PFRA) mapping which is deemed unsuitable to be used for land use zoning. All areas where a flood risk has been identified using this flood mapping analysis shall be subject a to site specific flood risk assessment to confirm the extent of flooding on the site.

Kildare County Council makes no representations, warranties or undertakings about any of the information provided on these draft 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, Kildare County Council 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 draft 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 Kildare County Council has been advised of the possibility of such loss or damages, or such loss or damages were reasonably foreseeable.

Kildare County Council reserves the right to change the content and / or presentation of any of the information provided on the draft flood maps at its sole discretion, including these notes and disclaimer. This disclaimer, guidance notes and conditions of use shall be governed by, and

construed in accordance with, the laws of the Republic of Ireland. If any provision of these disclaimer, guidance notes and conditions of use shall be unlawful, void or for any reason unenforceable, that provision shall be deemed severable and shall not affect the validity and enforceability of the remaining provisions.

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 available flood risk information used to identify the flood risk zones is discussed in **Section 5**. Potential zoning areas at risk from flooding are examined and recommendations for Flood Risk Assessments are made in **Section 6**. **Section 7** details the flood risk management policies and objectives being brought forward to the County Development Plan and lastly **Section 8** provides a summary.

2 STUDY AREA

2.1 INTRODUCTION

The County Kildare administrative area is shown **Figure 2.1** KCC Extent and Watercourses below. The County has an extent of approximately 1688 km^2. The County extends east to west from the foothills of the Wicklow Mountains to the River Barrow and north to south from the River Liffey to County Carlow (as shown in Figure 2.1 below). The 2011 Census shows the County has a population of 210,312 and the Regional Planning Guidelines population target is 252,640 by 2022. The preliminary results for the 2016 Census published in July 2016 show that the population of Kildare has grown to 222,130. The SFRA for the County Development Plan 2017-2023 examined flood risk in the Town Environs, Towns, Villages and Settlements as identified in Table 2.1. Larger towns within the County are subject to their own Local Area Plans and SFRAs.

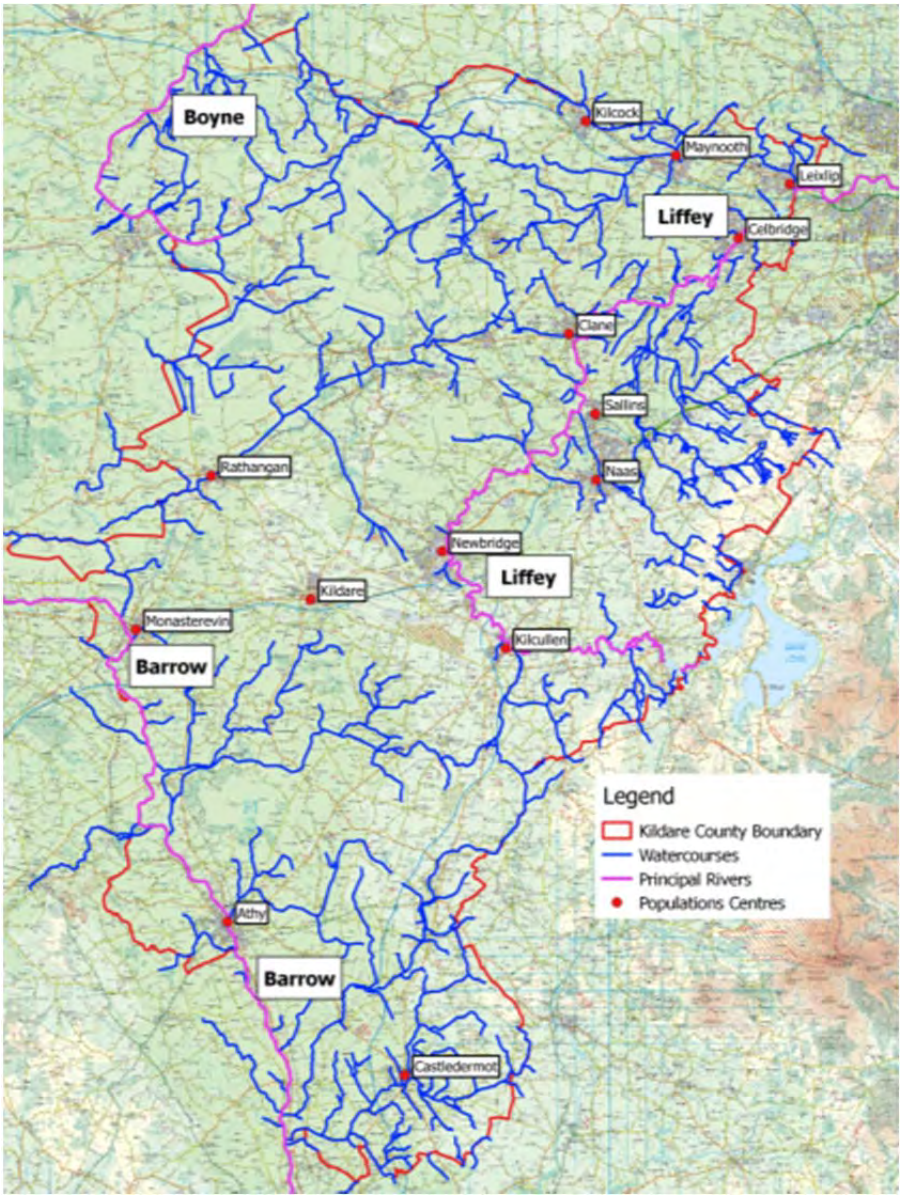

Figure 2.1 County Kildare Extent and Watercourses

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 above shows the watercourses and principal rivers in the County. All of the watercourses lie within Hydrometric Area (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).

Table 2.1 Town Environs, Towns, Villages and Settlements examined in the SFRA

Environs Plans	Small Towns	Villages	Rural Settlements
▪ Blessington ▪ Kilcock ▪ Ladytown	▪ Athgarvan ▪ Castledermot ▪ Derrinturn ▪ Kill ▪ Prosperous ▪ Rathangan	▪ Allenwood ▪ Ballitore ▪ Ballymore Eustace ▪ Caragh ▪ Coill Dubh / Cooleragh ▪ Crookstown ▪ Johnstown ▪ Johnstownbridge ▪ Kildangan ▪ Kilmeague ▪ Moone ▪ Robertstown ▪ Straffan ▪ Suncroft ▪ Timolin	▪ Allen ▪ Ardclough ▪ Brannockstown ▪ Broadford ▪ Brownstown ▪ Calverstown ▪ Cutbush ▪ Kilberry ▪ Kilmead ▪ Kilteel ▪ Maddenstown ▪ Maganey / Levitstown ▪ Milltown ▪ Narraghmore ▪ Nurney ▪ Rathcoffey ▪ Staplestown ▪ Twomilehouse

2.3 NON COUNTY DEVELOPMENT PLAN AREAS

While the Kildare County Development Plan 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 County Development Plan: Athy, Celbridge, Clane, Kilcock, Kilcullen, Kildare, Leixlip, Maynooth, Monasterevin, Naas, Newbridge 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 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 and Management (CFRAM) Studies).

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 Flood Risk Assessments (FRA) 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)** – a broad overview of flood risk issues across a region to influence spatial allocations for growth in housing and employment as well as to identify where flood risk management measures may be required at a regional level to support the proposed growth. This is currently being undertaken by the OPW through the CFRAM process.
- **Strategic Flood Risk Assessment (SFRA)** – an assessment of all types of flood risk informing land use planning decisions. This will enable the Planning Authority to allocate appropriate sites for development, whilst identifying opportunities for reducing flood risk. This SFRA will revisit and develop the flood risk identification undertaken in the RFRA, and give consideration to a range of potential sources of flooding. An initial flood risk assessment, based on the identification of Flood Zones, will also be carried out for those areas, which will be zoned for development. Where the initial flood risk assessment highlights the potential for a significant level of flood risk, or there is conflict with the proposed vulnerability of development, then a site specific FRA will be recommended, which will necessitate a detailed flood risk assessment.
- **Site Specific Flood Risk Assessment (FRA)** – site or project specific flood risk assessment to consider all types of flood risk associated with the site and propose appropriate site management and mitigation measures to reduce flood risk to and from.

3.2 FLOOD RISK ASSESSMENT

3.2.1 Flood Risk Assessment Approach

The Guidelines recommend that Flood Risk Assessments (FRA) 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. Figure 3.1 shows the SPR model that should be adopted in FRAs.

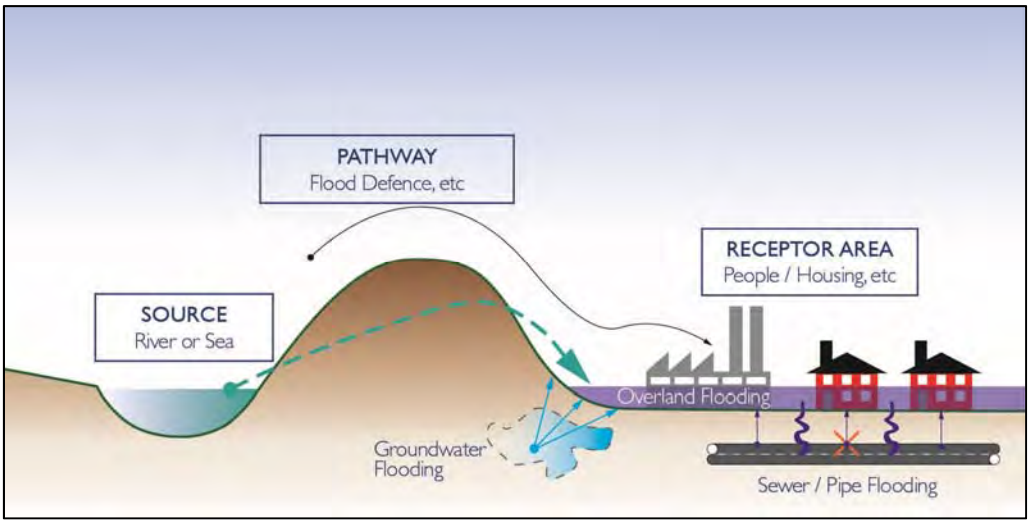

Figure 3.1 Flood Risk Assessment Source - Pathway - Receptor Model

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.
- **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. Coastal flooding is not a concern for KCC as it is a landlocked County however a

combination of high flow in rivers and a high tide may prevent the river from discharging into the sea thus increasing water levels inland causing rivers to overtop their banks.

- 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.
- 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

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 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).
- 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 are still carry a residual risk of flooding from overtopping, failure of the defences and deterioration due to lack of maintenance. Figure 3.2 shows a typical flood zone map.

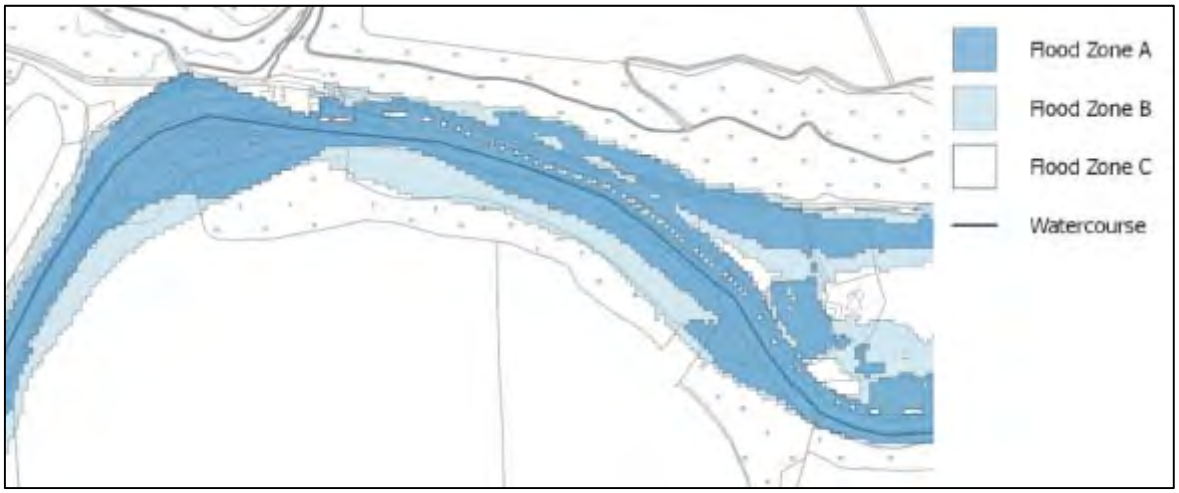

Figure 3.2 Typical Flood Zone Map

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.
- 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 Kildare but also to assess particular areas of interest at town / environ scale. The Guidelines recommend a series of outputs for a SFRA. These outputs in board 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 site-specific FRA 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. 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. Figure 3.3 shows the sequential approach principles in flood risk management. 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.

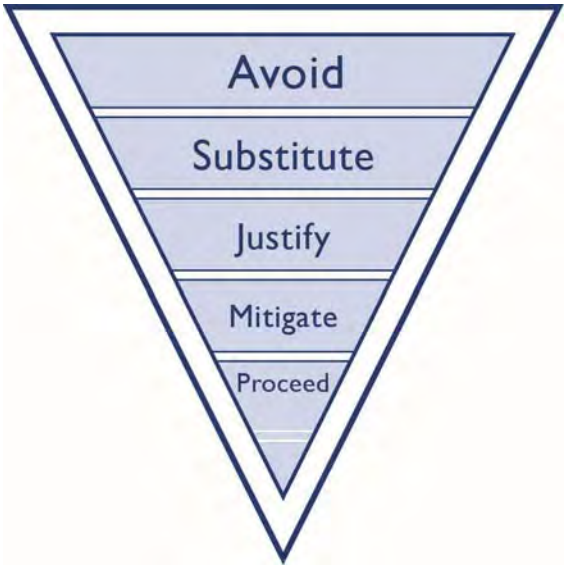

Figure 3.3 Sequential approach principles in flood risk management

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; ▪ Hospitals; ▪ Emergency access and egress points; ▪ Schools;

Vulnerability Class	Land uses and types of development which include*:
	▪ Dwelling houses, student halls of residence and hostels; ▪ Residential institutions such as residential care homes, children's homes and social services homes; ▪ Caravans and mobile home parks; ▪ Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and ▪ Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less vulnerable development	▪ Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions; ▪ Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans; ▪ Land and buildings used for agriculture and forestry ▪ Waste treatment (except landfill and hazardous waste); ▪ Mineral working and processing; and ▪ Local transport infrastructure.
Water-compatible development	▪ Flood control infrastructure; ▪ Docks, marinas and wharves; ▪ Navigation facilities; ▪ Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; ▪ Water-based recreation and tourism (excluding sleeping accommodation); ▪ Lifeguard and coastguard stations; ▪ Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and ▪ Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan).
*Uses not listed here should be considered on their own 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. It applies where land zonings have been reviewed with respect to the need for development of areas at a high or moderate risk of flooding for uses which are vulnerable to flooding and which would generally be inappropriate, as set out in Table 3.2, and where avoidance or substitution is not appropriate. Where land use zoning objectives are being retained, they must satisfy all of the following criteria as per **Table 3.4**.

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: i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement; ii. Comprises significant previously developed and/or under-utilised lands; iii. Is within or adjoining the core[3] of an established or designated urban settlement; iv. Will be essential in achieving compact and sustainable urban growth; and v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.
3. A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment

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 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; and/or
- Replace the existing zoning with a zoning or a specific objective for less vulnerable uses;
- Prepare a local area plan informed by a detailed flood risk assessment to address zoning and development issues in more detail and prior to any development; and/or
- If the criteria of the Justification Test have been met, design of structural or non-structural flood risk management measures as prerequisites to development in specific areas, ensuring that flood hazard and risk to other locations will not be increased or, if practicable, will be reduced. The mitigation measures are required prior to development taking place.

Records of Justification Tests are shown in Appendix C.

4 DEVELOPMENT MANAGEMENT AND FLOOD RISK

4.1 OVERVIEW

All development proposals regardless of which flood zone they are within should be supported by an appropriately detailed Flood Risk Assessment (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 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. 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 of the criteria of the Development Management Justification Test as per Table 4.1 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: i. The development proposed will not increase flood risk elsewhere and, if practicable, will reduce overall flood risk; ii. The development proposal includes measures to minimise flood risk to people, property, the economy and the environment as far as reasonably possible; 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 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. 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 SURFACE WATER AND DRAINAGE

All development proposals shall carry out a surface water and drainage assessment and shall be compliant with the Greater Dublin Strategic Drainage Study (GDSDS) (2005) and the Greater Dublin Regional Code of Practice for Drainage Works (2012) to ensure that drainage from the site is managed sustainably. The requirements below provide an overview of drainage requirements for

development in Kildare. It is noted that the GDSDS and Code of Practice remain the overriding policy documents.

4.2.1 Drainage

1. Proposed development shall be drained on a completely separate system. All new developments must incorporate Sustainable Drainage Systems (SuDS). In the unlikely event of this not being feasible the Developer must provide alternative means of dealing with pollutants. Rainwater should be infiltrated to the ground and/or discharged via a SuDS system to a surface water drain or watercourse. Other effluent, including wastewater, shall discharge to the foul drainage systems.

2. In general, watercourses are not to be culverted or piped. They should remain open in their natural valley, which should be incorporated into the public open space. Culverting should be confined to road crossings and should be sufficiently large to prevent blockage, allow runoff from a one in a hundred rain event and to allow for man entry for maintenance purposes. Permission must be obtained from the OPW (under a section 50 licence) to construct any culvert or bridge.

3. All proposed structures must be set back from the edge of any watercourse to allow access for channel cleaning/maintenance. A 15 meters wide riparian buffer strip each side of the watercourse is recommended. In dense urban areas the width of the riparian buffer strip is to be agreed with KCC.

4. All new development must allow for climate change as set out in the GDSDS Technical Document, Volume 5, Climate Change
   i. River flows 20% increase in flows for all return periods up to 100 years
   ii. Rainfall 10% increase intensity (factor all intensities by 1.1)

5. Surface water outfalls to streams, rivers, etc. should be unobtrusive and not cause erosion of the bed and banks. A suitable non-return device should be fitted on the outfall pipeline. KCC must approve all design details.

Further guidance on the use of SuDS is given in the GDSDS Technical Documents Vol. 2 New Development and Vol. 3 Environmental Management and in the Design and Best Practice manuals produced by CIRIA in the UK.

4.2.2 Storm Water Management

1. Development shall comply with the Greater Dublin Strategic Drainage Study, Volume 2, New Development Policy.

2. The maximum permitted surface water outflow from any new development is to be restricted to that of a Greenfield site before any development took place.

3. All new development must allow for climate change as set out in the GDSDS Technical Document, Volume 5, Climate Change.

4. In general, all new developments must incorporate Sustainable Drainage Systems (SuDS).

5. Sustainable Drainage Systems include devices such as: Swales, Permeable Pavements, Filter Drains, Storage Ponds, Constructed Wetlands, Soakaways, etc. SuDS devices such as permeable paving or swales/ ponds etc. may require the approval of KCC.

6. In some exceptional cases it may not be feasible to use the above devices and at the discretion of the KCC, approval may be given to install underground attenuation tanks or enlarged pipes in conjunction with other devices to achieve the required water quality. These should only be considered as a last resort where it can be shown that SuDS measures are not achievable

7. Attenuation tanks shall normally be located in green areas; any other location requires the approval from KCC.

8. Where a tank is to be constructed in a trafficked area, a standard minimum depth of cover from road level to top of the roof of the tank should be 1.2m.

9. All enlarged pipes and associated manholes must comply with the GDSDS and the Code of Practice.

10. In order to isolate and carry out maintenance of the flow control device a penstock valve (or similar approved) shall be installed within the outfall manhole, on the upstream end of the manhole.

11. For gravity systems a Hydrobrake (or similar approved flow control device) shall be installed in the last manhole.

4.3 RESIDUAL RISK

As well as assessing the surface water management risk for a site, all development including that in Flood Zone C, should consider residual risk factors should 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.

4.4 DEVELOPMENT PROPOSALS IN FLOOD ZONES

4.4.1 Overview

It is recommended that any planning applications in flood risk areas are accompanied by a supporting appropriately detailed flood risk assessment. 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 detailed assessment 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.

Detailed FRAs should be carried out in accordance with the Guidelines and 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 surface water drainage must be compliant with the GDSDS and the Code of Practice. 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.

4.4.2 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.

4.4.3 Assessment of Proposals for Highly Vulnerable Development

Highly vulnerable development proposals should not be considered in flood risk areas unless supplemented by an appropriately detailed FRA and meets the criteria for the criteria of the Development Management Justification Test. 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 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 placed in the flood zones.
- 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.

4.4.4 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.

4.4.5 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 conform to The Guidelines then the application should be refused on flood risk grounds and a new application submitted, allowing for appropriate design and FRA.

5 FLOOD RISK

5.1 INTRODUCTION

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. Recommendations for area specific objectives and fluvial flood zone mapping are shown in Appendix A and Appendix B respectively. Figure 5.1 below shows an overview of the draft CFRAM flood zones, the indicative OPW Preliminary Flood Risk Assessment (PFRA) flood zones, indicative flood zones generated for the SFRA and historical flooding areas.

5.2 HISTORICAL FLOODING

A review of historical flood data was carried out for the Eastern and South Eastern CFRAM Studies (See Section 5.3 below for more information on the CFRAM Studies) using information provided on floodmaps.ie and in consultation with KCC area offices. 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. Kildare County Council has been one of the most proactive local authorities in the provision of flood alleviation schemes with many of these areas having had schemes put in place.

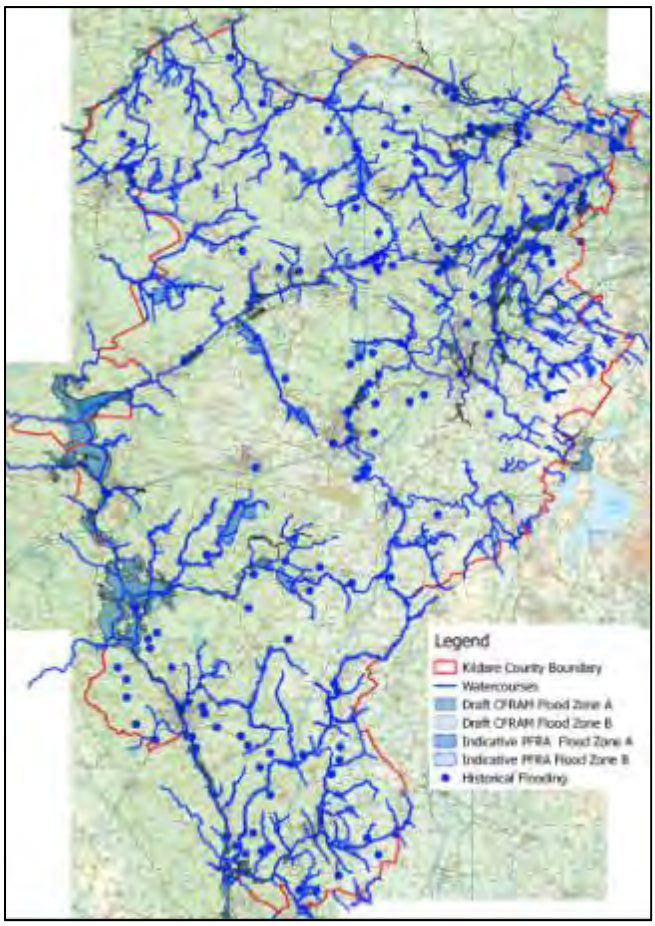

Figure 5.1 Flood Risk Overview for Kildare

5.3 CFRAM STUDIES

5.3.1 Background

The OPW is currently leading the development of Catchment Flood Risk Assessment and Management (CFRAM) Studies. The aim of these studies is to assess flood risk, through the identification of flood hazard areas and the associated impacts of flooding. The flood hazard areas have been identified as being potentially at risk from significant flooding, including areas that have experienced significant flooding in the past. They will also take account of 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 will establish long-term Flood Risk Management Plans (FRMP) to manage flood risk within the relevant river catchment. Flood maps are one of the main outputs of the studies. The maps indicate modelled flood extents for flood events of a range of annual exceedance probabilities (AEP). County Kildare falls within two CFRAM Studies, the Eastern CFRAM and the South Eastern CFRAM. The two CFRAM Studies identified areas for further assessment (AFAs), as shown in Table 5.1, which through the National CFRAM Programme will be assessed by a flood risk management plan.

Table 5.1 County Kildare CFRAM Areas for Further Assessment

CFRAM Study	AFAs
Allenwood	South East
Athy	South East
Blessington	East
Castledermot	South East
Celbridge	East
Clane	East
Hazelhatch	East
Johnstownbridge	East
Kilcock	East
Leixlip	East
Maynooth	East
Monasterevin	South East
Naas	East
Newbridge	East
Rathangan	South East
Suncroft	South East
Turnings/Killeenmore	East

5.3.2 Flood Risk Management Plans

The Eastern and South Eastern CFRAM Flood Risk Management Plans (FRMP) are ongoing and if it is deemed necessary, flood risk management objectives, options and plans will be developed for the AFAs in County Kildare. KCC have committed to implementing any recommendations from the FRMPs and will work in conjunction with the OPW to deliver any proposed flood alleviation schemes that are deemed appropriate and viable.

The draft South Eastern CFRAM FRMP was published in August 2016 and outlined a series of proposed flood risk policy measures for the local authorities but also specific measures for the County Kildare AFAs. These are outlined in Table 5.2 below. At the time of drafting of this SFRA the draft Eastern CFRAM FRMP had not yet been published. A Disclaimer and Conditions of Use for flood maps and flood risk management plans are available at the following website www.opw.ie/floodplans.

Table 5.2 South Eastern CFRAM Draft FRMP proposed flood risk management measures

CFRAM Recommendation Code	Measure
Regional Measures	
IE14-UoM-9011-M22	Application of the Guidelines on the Planning System and Flood Risk Management (DECLG/OPW, 2009)
IE14-UoM-9012-M34	Implementation of Sustainable Urban Drainage Systems (SUDS)
IE14-UoM-9013-M24	Consideration of Flood Risk in local adaptation planning.
IE14-UoM-9023-M33	Ongoing Maintenance of Drainage Districts
IE14-UoM-9031-M41	Establishment of a National Flood Forecasting and Warning Service
IE14-UoM-9032-M42	Ongoing Appraisal of Flood Event Emergency Response Plans and Management Activities
IE14-UoM-9033-M51	Individual Action to Build Resilience
IE14-UoM-9041-M61	Flood-Related Data Collection
IE14-UoM-9051-M61	Minor Works Scheme
Athy AFA	
IE14-140150-0114-M33	Athy Flood Relief Scheme: Hard defences - Progression of the Athy Flood Relief Scheme, comprising a series of hard defences consisting of flood embankments and walls, to project level development and assessment for refinement and preparation for planning / exhibition and, as appropriate, implementation.
Castledermot AFA	
IE14-140150-0114-M33	Castledermot Flood Relief Scheme: Hard defences - Progression of the Castledermot Flood Relief Scheme, comprising a series of Hard Defences consisting of flood embankments and walls, to project-level development and assessment for refinement and preparation for planning / exhibition and, as appropriate, implementation.

CFRAM Recommendation Code	Measure
Suncroft AFA	
IE14-140178-0814-M61	Suncroft Flood Relief Scheme: Storage, Improvement of Channel Conveyance and Hard Defences - Progression of the Suncroft Flood Relief Scheme, comprising upstream storage on the Common North watercourse, channel modification, replacement of critical structures combined with walls and embankments, to project-level development and assessment for refinement and preparation for planning / exhibition and, as appropriate, implementation.

5.3.3 CFRAM Fluvial Flood Zone Mapping

The CFRAM studies are currently ongoing and at the time of compiling this SFRA the outputs remain as Draft Final status. They have been released as part of a statutory consultation process for the National CFRAM Programme. The draft CFRAM flood maps may be amended following the consultation process due to observations, technical objections and appeals from the local authorities and the public. It should be acknowledged however, that the CFRAM mapping is the most comprehensive flood zone mapping available for the County and is considered appropriate for use as a strategic overview of flood risk within the County. The draft 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 draft CFRAM flood mapping is not available for all zoned land and land use plans within the County. Flood risk locations which are outside of the scope of the CFRAM mapping have been identified using indicative flood mapping generated using a simplified hydraulic model as discussed further in Section 5.6. This mapping is considered appropriate as Stage 2 FRA flood mapping to allow KCC to follow the sequential approach.

It should be noted that the CFRAM mapping used to define the flood zones for this SFRA are at Draft Final stage and are subject to change following a stakeholder and public consultation process. However the CFRAM mapping is the most comprehensive flood zone mapping available for the County and is considered appropriate for use as a strategic overview of flood risk within the County. Further information on the CFRAM studies is available at www.cfram.ie.

5.4 FLOOD DEFENCE WORKS

5.4.1 Flood Defence Schemes

To counteract the known flood risk in the County, river/stream improvement works have been carried out in the last 20 years. These are outlined in Table 5.3 below.

Table 5.3 Flood Relief Works carried out in Kildare in the recent past

Location	Description of Works
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.
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
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 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. Silleachain Other work included 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
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
River Morrell	Upgrade of culverts, construction of embankments and maintenance of the river. A full flood management scheme is currently being considered for the Morrell catchment from the townland of Turnings to the N7 Naas Road.

Any planning decisions should also be cognisant of future works in the County. Current proposals include:

- Morrell River Flood Management Scheme – Will comprise a series of flood embankments and walls to alleviate flooding in the Killeenmore, Sherlockstown and Tuckmilltown areas;
- Newbridge – Will include improvements to surface water drainage network to alleviate flooding in Dara Park;
- Ballymore Eustace – Upgrading of the culvert near the National School to alleviate flooding within the school grounds.

5.4.2 Flood Zone Mapping for Flood Defence Schemes

The Guidelines state that the effect of flood defences should be ignored when determining flood zones as defended areas still carry a residual risk from overtopping and failure of the defences. Because this residual risk of flooding remains, the sequential approach and the Justification Test apply to such defended locations. Under the Guidelines from a planning perspective to be considered a defended area the design standard of the scheme must protect that area for a 1% AEP flood event.

In the CFRAM Studies flood defences are defined as structures or features that were constructed to provide a formal flood defence function ('formal flood defences'), including those that may be in poor condition, and also those that may have been built for other purposes but that, in the opinion of a Consultant, would provide a flood defence function ('informal effective flood defences'). They do NOT include structures that were not constructed to provide a formal flood defence function and that, in the opinion of a Consultant/ Expert/suitably qualified Engineer , would fail to provide a flood defence function due to structural weakness, porosity or other such reasons ('informal ineffective flood defences'), such as garden walls or embankments perforated by uncontrolled culverts.

Only one location examined for the SFRA, the village of Johnstown, has been identified in the Eastern CFRAM Study as having formal defences. A defended area has been delineated on the appropriate SFRA fluvial flood zone map. Maynooth, Leixlip and areas along the Morrell River also have defended areas but they are outside the scope of this SFRA.

5.5 LIFFEY FLOOD CONTROLS

The river flows along the Liffey are greatly influenced by the dams and reservoirs operated by ESB at Pollaphuca, Golden Falls and Leixlip. In particular the Pollaphuca reservoir is capable of storing large volumes of runoff and acts a flood relief reservoir for the Liffey. The dams at Golden Falls and at Leixlip are significantly smaller and have limited storage capacity but they still have some attenuating effect on the middle and lower reaches of the Liffey. The ESB operates the three reservoirs and hydro-electric plants based on: 'Regulations and Guidelines for the control of the River Liffey, Water Management Document, February 2006, ESBI'. The three main considerations for the operation of the dams are Dam safety (designed to safely store a 1 in 10,000 year or 0.01% AEP rainfall event), Efficiency of electric power generation and Flood management.

Flood management procedures for the three dams begin when thresholds for water levels or inflows are reached or predicted to occur. These operation procedures ensure that the Liffey dams are capable of dealing safely with floods having an expected annual probability of occurrence of 1:10,000. The CFRAM hydrology and hydraulic modelling has accounted for the discharges from the Liffey reservoirs within the generation of the flood maps within the limits of the ESB operation guidelines. They also account for discharges downstream of the Leixlip reservoir where levels in the Liffey can cause backing up of the Rye water raising water levels upstream.

5.6 OPW PRELIMINARY FLOOD RISK ASSESSMENT INDICATIVE FLUVIAL FLOOD MAPS

The Preliminary Flood Risk Assessment (PFRA) is a national screening exercise completed by the OPW in 2012 based on available and readily-derivable information. The PFRA aimed to identify areas where there may be a significant risk associated with flooding. Indicative fluvial flood maps where produced to help identify these areas. The mapping did not account for flood defences, channel structures or channel works. Areas where the risks associated with flooding might be significant were identified and are referred to as Areas for Further Assessment, or 'AFAs'. More detailed assessment of the AFA's is being undertaken through the CFRAM Studies to more accurately assess the extent and degree of flood risk, and, where the risk is significant, to develop where possible measures to manage and reduce the risk.

The PFRA mapping should be treated with caution due to the limited nature of the analysis. The PFRA mapping has been used in conjunction with other information sources to assess flood risk in the locations as shown in Table 2.1. The PFRA mapping has been used in conjunction with historical flooding records coupled with the CFRAM mapping to identify in places outside of the scope of the CFRAM studies which required more accurate flood mapping.

5.7 INDICATIVE SFRA FLOOD MAPPING

Some areas which were not within the scope of the CFRAM mapping but where the PFRA mapping indicated a potential flood risk, required updated flood zone mapping to be generated for this SFRA. As discussed in section 5.5 above, PFRA mapping is not deemed suitable to justifiably zone land with consideration for flood risk therefore a review of the zoned areas (including the Rural Settlement maps) was carried out and eight (8) areas where 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 PFRA mapping.

It should be noted that for all areas where flood risk has been identified, these should still be subject to a site specific FRA 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.

5.8 FLUVIAL FLOOD ZONE MAPPING REVIEW

The flood zones are largely derived from the Draft Final Eastern and South Eastern CFRAM maps. These maps are the most comprehensive flood maps produced for Kildare since the introduction of the Guidelines and the Floods Directive. Flood extents for areas that are outside of the scope of CFRAMs are supplemented by fluvial flood mapping from the earlier OPW Preliminary Flood Risk Assessment (PFRA) Report and the indicative (Stage 2) SFRA mapping generated for this report.

The flood zones only account for inland flooding. The flood zone maps are shown in Appendix B. As described in Section 5.3.3 the Eastern CFRAM mapping is at Draft Final stage. Further information on the Eastern CFRAM study is available at www.cfram.ie. Table 5.4 highlights the adequacy and confidence of the information used in the Flood Zone mapping review. Table 5.5 shows the type of fluvial flood mapping which is applicable to the Environs, Small Towns, Villages and Rural Settlements discussed in the SFRA.

Table 5.4 Adequacy of information for flood zone mapping review

Flood Zone Mapping Source	Confidence	Comments
Eastern CFRAM	High / Moderate	The maps are still at draft final stage and subject to change following a public consultation process. More recent updates to flood defences, channel structures or channel works may not be accounted for.
South Eastern CFRAM	High / Moderate	The maps are still at draft final stage and subject to change following a public consultation process. More recent updates to flood defences, channel structures or channel works may not be accounted for.
OPW PFRA	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 site specific FRAs to accurately define the flood zones.

Table 5.5 Type of Fluvial Flood Mapping used for each area

Location	Location Type	Fluvial Flood Mapping Type
Allen	Settlement	No fluvial risk indicated
Allenwood	Village	Draft CFRAM mapping
Ardclough	Settlement	No fluvial risk indicated
Athgarvan	Town	Draft CFRAM mapping
Ballitore	Village	PFRA Mapping
Ballymore Eustace	Village	Draft CFRAM mapping
Blessington Environs	Environs	Draft CFRAM mapping
Brannockstown	Settlement	No fluvial risk indicated
Broadford	Settlement	PFRA Mapping
Brownstown	Settlement	No fluvial risk indicated
Calverstown	Settlement	No fluvial risk indicated
Caragh	Village	SFRA Indicative Mapping
Castledermot	Town	Draft CFRAM mapping
Coill Dubh /Cooleragh	Village	No fluvial risk indicated
Crookstown	Village	PFRA Mapping
Cutbush	Settlement	No fluvial risk indicated
Derrinturn	Town	SFRA Indicative Mapping
Johnstown	Village	Draft CFRAM mapping
Johnstownbridge	Village	Draft CFRAM mapping
Kilberry	Settlement	Draft CFRAM mapping
Kilcock Environs	Environs	Draft CFRAM mapping
Kildangan	Village	SFRA Indicative Mapping
Kill	Town	Draft CFRAM mapping

Location	Location Type	Fluvial Flood Mapping Type
Kilmead	Settlement	No fluvial risk indicated
Kilmeague	Village	No fluvial risk indicated
Kilteel	Settlement	No fluvial risk indicated
Maddenstown	Settlement	No fluvial risk indicated
Maganey / Levitstown	Settlement	CFRAM and SFRA Indicative Mapping
Milltown	Settlement	No fluvial risk indicated
Moone	Village	PFRA Mapping
Narraghmore	Settlement	No fluvial risk indicated
Nurney	Settlement	SFRA Indicative Mapping
Prosperous	Town	SFRA Indicative Mapping
Rathangan	Town	Draft CFRAM mapping
Rathcoffey	Settlement	No fluvial risk indicated
Robertstown	Village	No fluvial risk indicated
Staplestown	Settlement	SFRA Indicative Mapping
Straffan	Village	Draft CFRAM mapping
Suncroft	Village	Draft CFRAM mapping
Timolin	Village	SFRA Indicative Mapping
Twomilehouse	Settlement	No fluvial risk indicated

5.9 OTHER SOURCES OF FLOODING

5.9.1 Overview

The flood zones only account for inland flooding. However they should not be used to suggest that any areas are free from flood risk as they do not account for potential flooding from other sources. Hence a review of other sources of flooding was carried out to identify potential areas of risk.

5.9.2 Coastal Flooding

Coastal flooding is not a concern for KCC as it is a landlocked County however a combination of high flow in rivers and a high tide may prevent the river from discharging into the sea thus increasing water levels inland causing rivers to overtop their banks. This has been incorporated in the draft CFRAM mapping, reviewed as part of the SFRA, using joint probability analysis, hence any impact coastal influences may have upstream along the Liffey or the Barrow is accounted for.

5.9.3 Groundwater Flooding

The OPW PFRA carried out a national scale a Groundwater Flooding Report which concludes that ground water flooding is largely confined to the West Coast of Ireland due to the hydrogeology of the area. Therefore ground water flooding is not a significant risk for Kildare but should still be examined at detailed FRA level particularly if the development includes proposals for basements.

5.9.4 Pluvial Flooding

The OPW Pluvial Flooding Risk Assessment (PFRA) study provides a national level pluvial screening of areas that are at potential risk of pluvial flooding. For a thorough assessment of pluvial risk in Kildare a more detailed assessment at a Countywide scale (taking into consideration of local factors and parameters) would need to be carried out. Nonetheless, the national PFRA maps can be used to identify areas that may be at risk and that may require a pluvial flooding assessment to be carried out for planning applications.

Table 5.6 below highlights areas where a more detailed FRA maybe required addressing pluvial flood risk. Recommendations and guidelines from the GDSDS should be implemented in these areas to reduce the risk of pluvial flooding. The other SFRA areas as listed in Table 2.1 shows a minimum pluvial flood risk within the extents of the lands and surface water but drainage should still be addressed in site specific FRAs.

Table 5.6 Locations with an indication of Pluvial Risk

Town / Village / Settlement	Indicative Pluvial Risk Assessment
Allen	Pluvial Extents to the east of the of the main village crossroads. Surface water and drainage should be addressed in site specific FRAs.
Ardclough	Clusters of pluvial risk which agreed with historical flooding records. Surface water and drainage should be addressed in site specific FRAs.
Athgarvan	Pluvial Extents in town centre which correlates with historical flooding. Surface water and drainage should be addressed in site specific FRAs.
Brannockstown	Clusters of pluvial risk which agreed with historical flooding records. Surface water and drainage should be addressed in site specific FRAs.
Calverstown	Clusters of pluvial risk which agreed with historical flooding records. Surface water and drainage should be addressed in site specific FRAs.
Crookstown	Pluvial Extents to the west of the village but area not zoned. Surface water and drainage should be addressed in site specific FRAs.
Derrinturn	Pluvial Extents in town centre. Surface water and drainage should be addressed in site specific FRAs.
Kilberry	Clusters of pluvial risk which agreed with historical flooding records. Surface water and drainage should be addressed in site specific FRAs.
Maddenstown	Clusters of pluvial risk which agreed with historical flooding records. Surface water and drainage should be addressed in site specific FRAs.
Milltown	Pluvial Extents to the north of the village but area not zoned. Surface water and drainage should be addressed in site specific FRAs.
Robertstown	Pluvial Extents to the east alongside the canal but area not zoned. Surface water and drainage should be addressed in site specific FRAs.

5.10 CLIMATE CHANGE SENSITIVE AREAS

5.10.1 Overview

The Guidelines state that flood zones should be generated without the inclusion of climate change factors. Due to the uncertainty surrounding the potential effects of climate change a precautionary approach is recommended.

5.10.2 Draft CFRAM Flood Extents

As recommended by the Guidelines when hydraulic models are not available which include the effects of climate change the current scenario 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. Hence the draft CFRAM current scenario flood extents were reviewed as part of the SFRA to establish an indication of future risk in areas using the difference between the Flood Zones A and B. Table 5.7 outlines areas that are potentially sensitive to climate change impacts. Site specific FRAs should address climate change scenarios in relation to finished flood levels (FFLs) and potential mitigation measures in these areas.

Table 5.7 Areas sensitive to climate change flood risk using Flood Zone B as an indicator

Town / Village / Settlement	Indicative Fluvial Climate Change Sensitivity
Allenwood	Relative to Flood Zone A, there is an increase in Flood Zone B in Allenwood
Castledermot	Relative to Flood Zone A, there is an increase in Flood Zone B on the eastern side and in the town centre.
Johnstown	Relative to Flood Zone A, there is an increase in Flood Zone B on the eastern side and in the town centre.
Johnstownbridge	Relative to Flood Zone A, there is an increase in Flood Zone B on the eastern side of the town.
Kilberry	No significant changes to the west of the village between Flood zones A and Flood Zone B in current scenario hydraulic modelling
Suncroft	Relative to Flood Zone A, there is an increase in Flood Zone B on the western side of the town.

5.10.3 SFRA Indicative Flood Zone Maps

The SFRA indicative flood zone maps include an allowance for climate change with respect to increased watercourse flows. However factors such as changes in land type, population and forestation have not been accounted for. Therefore the effects of climate change have been reviewed in the same manner as discussed in 5.10.2 above, i.e. where Flood Zone B was used a surrogate of Flood Zone A to assess the possible impacts. Table 5.8 outlines areas that are potentially sensitive to climate change impacts. Site specific FRAs should address climate change scenarios in relation to FFLs and potential mitigation measures in these areas.

Table 5.8 Areas sensitive to climate change using the indicative Flood Zone B as an indicator

Town / Village / Settlement	Indicative Fluvial Climate Change Sensitivity
Prosperous	Relative to Flood Zone A, there is an increase in Flood Zone B on the northern side of the village.
Derrinturn	Relative to Flood Zone A, there is an increase in Flood Zone B in the centre of the village where it is planned to expand the core settlement. However this increase is largely due to the capacity of the existing drainage infrastructure. If the drainage infrastructure was upgraded this extent significantly decreases.
Caragh	Relative to Flood Zone A, there is an increase in Flood Zone B in The Streams estate, Old Chapel Grove, Old Chapel Wood and adjacent the bridge on Caragh View.
Staplestown	Relative to Flood Zone A, there is an increase in Flood Zone B on the eastern side of the village where is a proposed new residential zoning.
Kildangan	Relative to Flood Zone A, there is an increase in Flood Zone B on the northern side of the town and adjacent to the railway line.
Maganey / Levitstown	No significant changes Flood zones A and Flood Zone B.
Timolin	Relative to Flood Zone A, there is a slight increase in Flood Zone B along the

	length of the watercourse within the modelled area.
Nurney	Relative to Flood Zone A, there is a slight increase in Flood Zone B along the length of the watercourse within the modelled area.

5.10.4 PFRA Indicative Flood Extents

In areas outside the scope of the CFRAM draft mapping, the PFRA flood zone mapping was used to assess future flood risk. Similarly the difference between the Flood Zones A and B was used an indication of future risk in those areas. No significant changes between the PFRA Flood Zones A and B was identified but the PFRA maps should be treated with caution due to the limited nature of the analysis and site specific FRAs should address climate change scenarios in relation to FFLs and potential mitigation measures.

6 DEVELOPMENT PLAN ZONING

6.1 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 6.1**. Justification Tests as applicable are shown in Appendix C.

Table 6.1 Land Use Zoning and Vulnerabilities

Objective	Vulnerability	Justification Test Required
A - Town / District / Rural Centre	High / Less	For highly vulnerable development in Flood Zone A or B For less vulnerable development in Flood Zone A
B - Existing Residential and Infill	High	For Development in Flood Zone A or B
C – New Residential	High	For Development in Flood Zone A or B
E - Community & Education	High / Less	For highly vulnerable development in Flood Zone A or B For less vulnerable development in Flood Zone A
F - Open Space / Amenity	Less / Water Compatible	For highly vulnerable development in Flood Zone A or B For less vulnerable development in Flood Zone A
H – Industry / Warehousing	Less	For Development in Flood Zone A
I – Agriculture	Less	For 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 For less vulnerable development in Flood Zone A
N - Neighbourhood Centre	High / Less	For highly vulnerable development in Flood Zone A or B For less vulnerable development in Flood Zone A
O - Open Space / Amenity	Less / Water Compatible	For highly vulnerable development in Flood Zone A or B For less vulnerable development in Flood Zone A
Q Enterprise / Employment	Less	For Development in Flood Zone A
R - Retail / Commercial	Less	For Development in Flood Zone A
T - General Development	High / Less	For highly vulnerable development in Flood Zone A or B For less vulnerable development in Flood Zone A
U – Utilities / Services	High	For Development in Flood Zone A or B
V – Equastrian (To develop Kill Equestrian Centre)	Less	For Development in Flood Zone A

Land use zonings do not apply to centres that are identified as 'Rural Settlements' in Table 2.1. The draft County Development Plan 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.

6.1.1 Environs Plans

Blessington Environs

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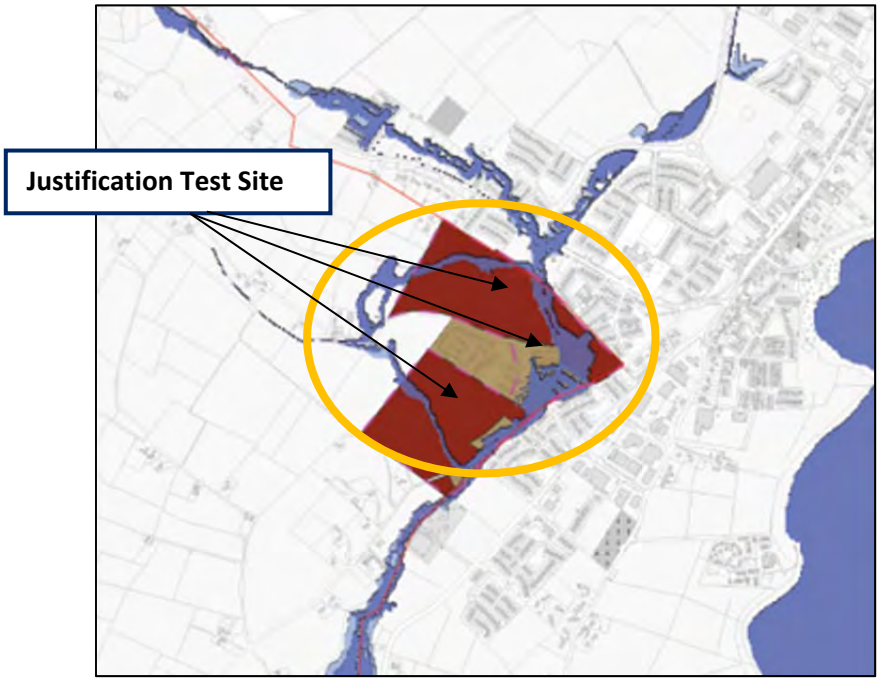
<tr><td colspan="2"> 
</td></tr>
<tr><td>Historical Flooding</td><td>No historical flooding reported in the area.</td></tr>
<tr><td>Flood Zone Mapping</td><td>Draft CFRAM mapping</td></tr>
<tr><td>Comment</td><td><u>Fluvial Flooding</u>
A review of the draft CFRAM flood zones in this area highlighted lands which are subject to B and C zoning objectives, which are classified as highly vulnerable development overlap with Flood Zone A extents.

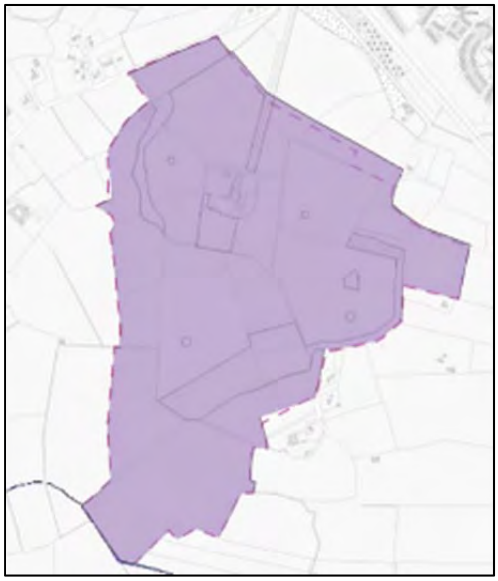
<u>Pluvial Flooding</u>
The zoned lands generally slope to the east towards the Kilmalum Road. There are low-lying areas adjacent to the Westpark Estate along the north eastern boundary of the zoned lands. This is highlighted in the PFRA mapping which indicates a 1% AEP pluvial extent in this area which also concurs with the CFRAM fluvial flood extent mapping.

<u>Climate Change</u>
The CFRAM mapping does not indicate any significant changes in flood extent from Flood Zone A to Flood Zone B.

<u>Justification Test</u></td></tr>
</table>

	It was recommended to carry out the Development Plan Justification Test to assess if the zoning in this area is still suitable.
Conclusion	KCC carried out Justification Test and found that it is considered appropriate to retain the existing zoning. The Justification Test is included in Appendix C. Based on the draft CFRAM mapping the extent of the areas required to carry out an FRA has been delineated. FRAs should address surface water and drainage, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. 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. Appendix A outlines the flood risk management recommendations for the site. Blessington was identified as an AFA in the Eastern CFAM study, the proposed flood risk management policies shall be reviewed following publication of the Eastern CFRAM FRMP recommendations for the AFA in Q4 of 2016.

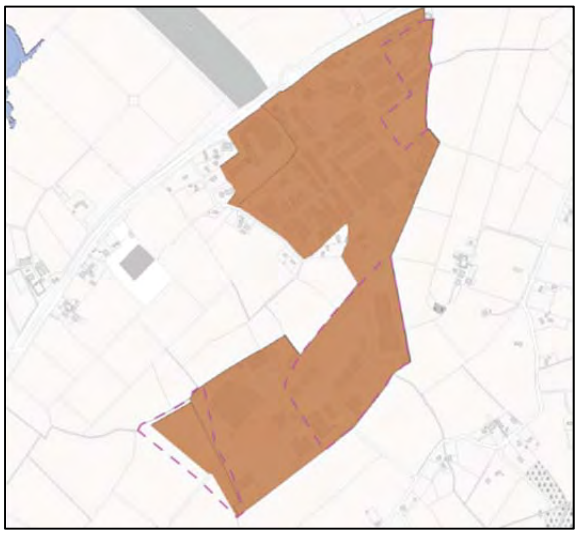
Kilcock Environs



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft CFRAM hydrology / hydraulic report for these areas indicates that there are no significant watercourses within the zoned lands. The stream which flows along the southern boundary was modelled in the CFRAM Study and did not highlight any flood extents in that area.

	Pluvial Flooding The southern end of the zoned lands generally slopes towards the tributary of the Lyreen river. The northern end of the zoned lands slopes easterly towards the M4 and there are low-lying areas adjacent to the M4 which are zoned for commercial / industrial development. This area is highlighted in the PFRA mapping as being at risk from the 1% AEP pluvial extent. Climate Change The CFRAM mapping does not indicate any significant changes in flood extent from Flood Zone A to Flood Zone B. Justification Test It is not required for this area.
Conclusion	Justification Test is not applicable in this area. An FRA should be carried out to address surface water management on the site paying particular attention to potential pluvial risk in the Q zoned lands in the northern section of the environs. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development surface water and drainage policies. Appendix A outlines the flood risk management recommendations for the site. Kilcock was identified as an AFA in the Eastern CFAM study, the proposed flood risk management policies shall be reviewed following publication of the Eastern CFRAM FRMP recommendations for the AFA in Q4 of 2016.

Ladytown Environs



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping

Comment	Fluvial Flooding A review of the draft CFRAM hydrology / hydraulic report for these areas indicates that there are no significant watercourses within the zoned lands. The PFRA 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. Pluvial Flooding The PFRA mapping highlights clusters of pluvial risk within the business park. Surface water and drainage should be addressed in site specific FRAs. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

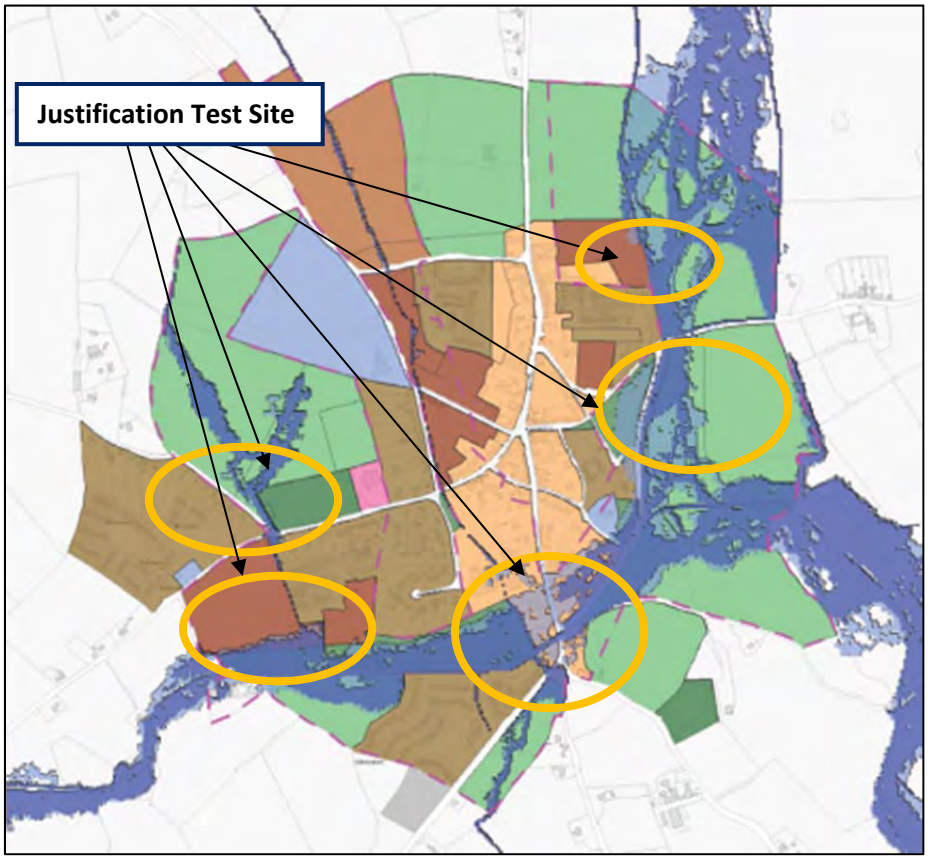
6.1.2 Small Towns

Athgarvan

Historical Flooding	Historical surface water flooding in the town. No historical fluvial flooding to note.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft CFRAM flood zones in this area indicates the town centre 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. Pluvial Flooding The town slopes eastwards towards the River Liffey. There are low-lying areas to the west and north of the main cross roads in the town. This is highlighted in the PFRA mapping which indicates a 1% AEP pluvial extent in these areas Climate Change The CFRAM mapping does not indicate any significant changes in flood extent from Flood Zone A to Flood Zone B. Justification Test It is not required for this area.
Conclusion	Justification Test is not applicable in this area. The draft CFRAM fluvial flood mapping and fluvial climate change assessment do not indicate a significant flood risk in this area. However the indicative pluvial assessment indicated that the areas adjacent to the town centre may be liable to pluvial flooding. In order to reduce surface water run-off and to minimise the risk of flooding, lands will be

	required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. The water compatible zones adjacent to the River Liffey should be maintained.

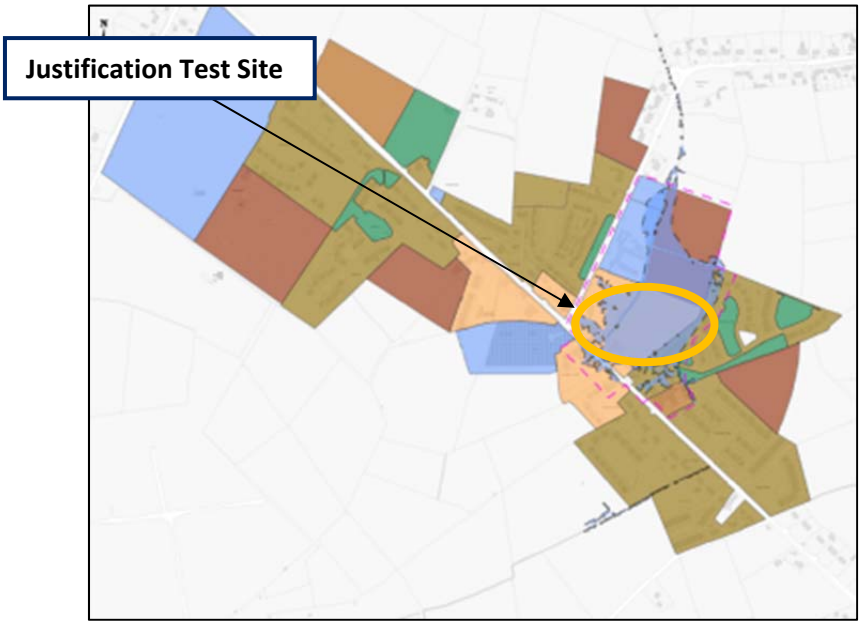
Castledermot



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft 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. Pluvial Flooding 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.

	Climate Change The CFRAM mapping indicates that areas in north east of the town and the town centre show increase flood extents from Flood Zone A to Flood Zone B. Justification Test It was recommended to carry out the Development Plan Justification Test to assess if the zonings in several areas were still suitable.
Conclusion	The draft CFRAM maps highlighted several areas within flood risk zones. Justification Tests were carried out for lands at Crophill, Garterfarm, Woodlands East, Saint Johns and in the town centre. A proposed residential zoning in Crophill has been rezoned to a water compatible zoning while zonings in the other townlands have been retained but development will be subject a site-specific FRA with development being avoided in the flood zones. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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. Castledermot was identified as an AFA in the South Eastern CFRAM study and the draft FRMP has recommended a series of flood relief measures for the town. Future zoning should be cognisant of this proposed flood relief scheme. KCC has committed to implementing the recommendations of the CFRAM and will work in conjunction with the OPW to deliver the final recommendations of the FRMP.

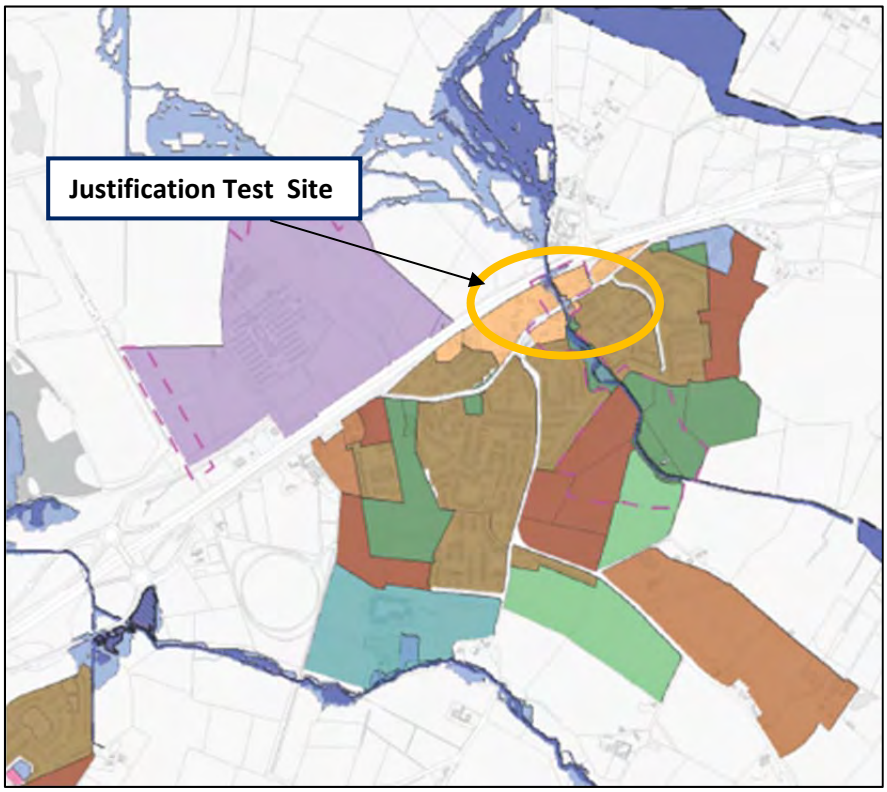
Derrinturn



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	SFRA Indicative Mapping
Comment	Fluvial Flooding 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. Pluvial Flooding The town is quite a flat area however the PFRA mapping highlights a 1% AEP pluvial extent within the site of the proposed town centre expansion and also in the Dreenan area adjacent to the Ballyshannon River. Climate Change The mapping generated for this area shows a large increase in Flood Zone B in the proposed town centre expansion area. Justification Test It was recommended to carry out the Development Plan Justification Test to assess the suitability of the town centre expansion zoning.
Conclusion	Flood Zone B was identified within an area designated for expanding the town centre. The Flood Zone B extent is directly linked to the capacity of the existing surface water network (drainage network). Preliminary hydraulic modelling indicates that a minimum of a 900mm diameter pipe could alleviate the flooding on the site. Development of the site should not include any vulnerable land uses

	until an upgrade of the Derrinturn Surface Water Scheme is completed. Based on the indicative flood zone mapping the extent of the areas required to carry out an FRA has been delineated. FRAs should address surface water and drainage, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.

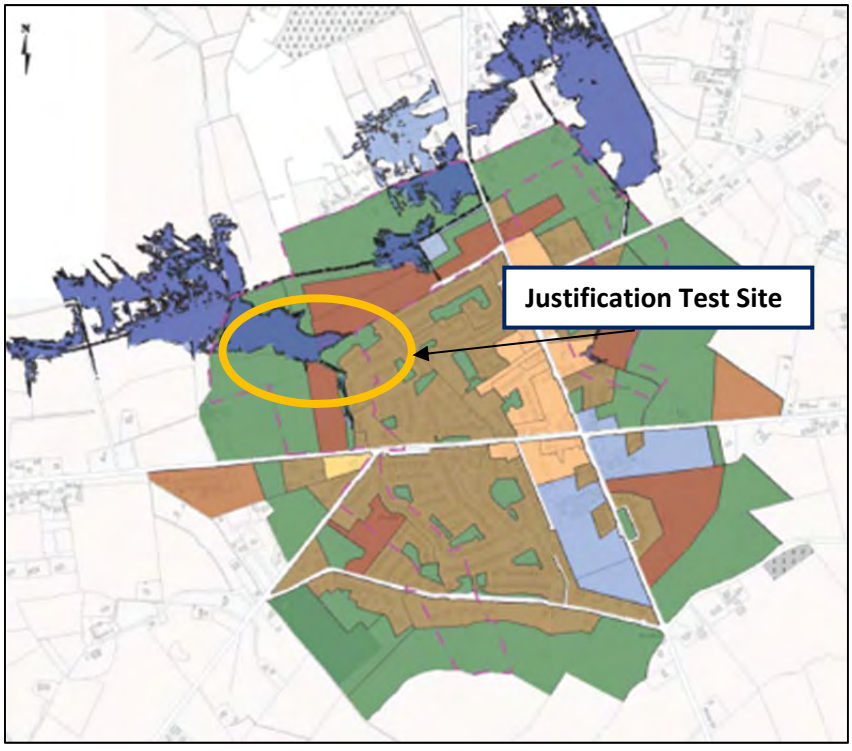
Kill



Historical Flooding	Historical flooding along the N7 where the Kill River courses underneath the N7. The town also has historical pluvial issues.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft CFRAM flood zones for Kill shows very little flood risk however there is some limited flooding in the town centre and at the Equestrian Centre for Flood Zone B. Pluvial Flooding 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. Climate Change The CFRAM mapping does not indicate any significant changes in flood extent from Flood Zone A to Flood Zone B. Justification Test It was recommended that planning authorities carry out the Development Plan Justification Test to assess the existing town centre zoning as there is some limited residential areas at risk in Flood Zone B.
Conclusion	There is limited flood risk within the town. The Town Centre zoning has been retained but residential development will be subject a site-specific FRA with development being avoided in the flood zones. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.

Prosperous



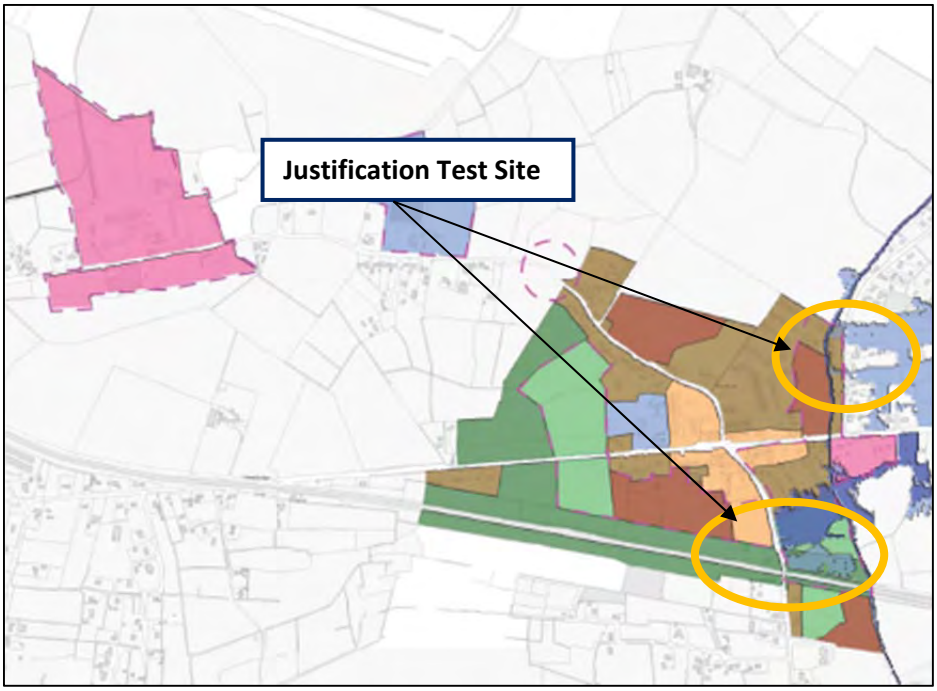
Historical Flooding	No historical fluvial flooding in the town however there is some surface water issues in the town centre.
Flood Zone Mapping	SFRA Indicative Mapping
Comment	Fluvial Flooding The indicative mapping does not highlight any significant flooding in the existing residential areas of the 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. Therefore the requirements for FRAs identified in previous SFRAs are to be retained. The fluvial mapping in Prosperous 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. Pluvial Flooding 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. Climate Change The indicative mapping indicates that areas in southern parts of the town show an increase in flood extents from Flood Zone A to Flood Zone B. Justification Test It was recommended to carry out the Development Plan Justification Test to assess the flooding to new residential zonings in the north of the town as there are some limited areas at risk from flooding.
Conclusion	The new residential zoning in the north of the town has been retained but residential development will be subject a site-specific FRA with development being avoided in the flood zones. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.

Rathangan

Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft CFRAM flood zones shows very little flood risk however there is some limited flooding in the town. All areas of flood risk are zoned for water compatible uses. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent in Rathangan. The town areas slope towards the Slate River. Climate Change The CFRAM mapping does not indicate any significant changes in flood extent from Flood Zone A to Flood Zone B. Justification Test It is not required for this area.
Conclusion	The draft CFRAM fluvial flood mapping does not highlight any area of significant risk. The water compatible zonings adjacent to the Slate River should be maintained. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. Rathangan was identified as an AFA in the South Eastern CFRAM study and the draft FRMP has not recommended any flood relief measures for the town. KCC has committed to implementing the recommendations of the CFRAM and will work in conjunction with the OPW to deliver the final recommendations of the FRMP.

6.1.3 Villages

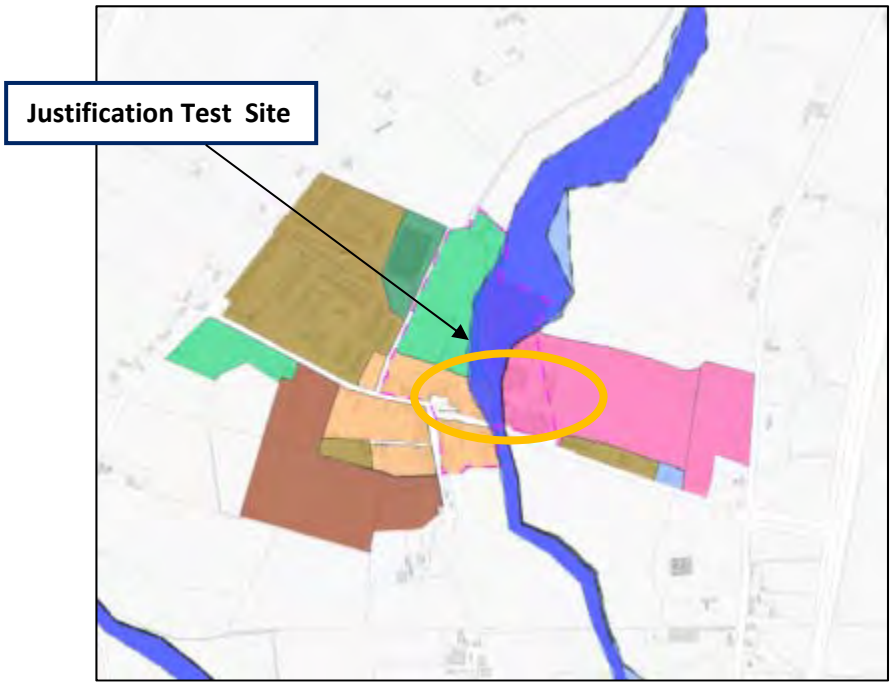
Allenwood



Historical Flooding	There are some historical surface water problems along the L1020 towards the Allenwood Industrial Park.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft CFRAM flood zones in Allenwood highlighted lands which are subject to a B (Existing Residential/Infill) objective in the south of the town which are classified as highly vulnerable development have a significant overlap with Flood Zone A extents. The majority of the land in the flood zone is currently undeveloped with some overlap with existing development. There is also some limited overlap with Flood Zone B in the Bluetown area. Pluvial Flooding The western area of the town in Allenwood Middle is highlighted in the PFRA mapping as being at risk from the 1% AEP pluvial extent. This area however is zoned for water compatible uses. Climate Change The CFRAM mapping indicates that areas in north east of the town show an increase in flood extents from Flood Zone A to Flood Zone B.

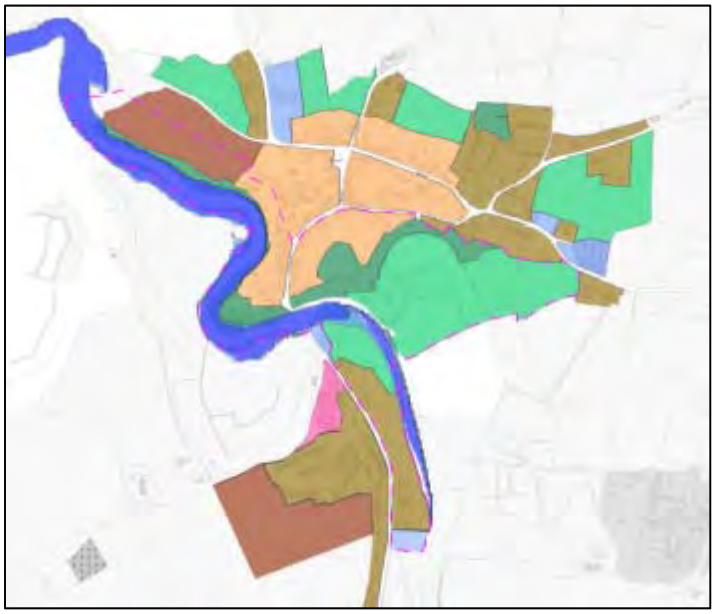
	Justification Test It was recommended to carry out the Development Plan Justification Test to assess the existing residential zoning in Bluetown and the proposed residential zoning adjacent the Grand Canal.
Conclusion	There is significant flood risk where the Ballynakill Stream meets the Grand Canal following a Justification Test KCC rezoned the undeveloped parcel of the site to an agricultural zoning. The existing residential zoning in Bluetown has been retained but residential development will be subject a site-specific FRA with development being avoided in the flood zones. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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. Allenwood was identified as an AFA in the South Eastern CFRAM study however the draft FRMP has not recommended any particular flood relief measures for the town. KCC has committed to implementing the recommendations of the CFRAM and will work in conjunction with the OPW to deliver the final recommendations of the FRMP.

Ballitore



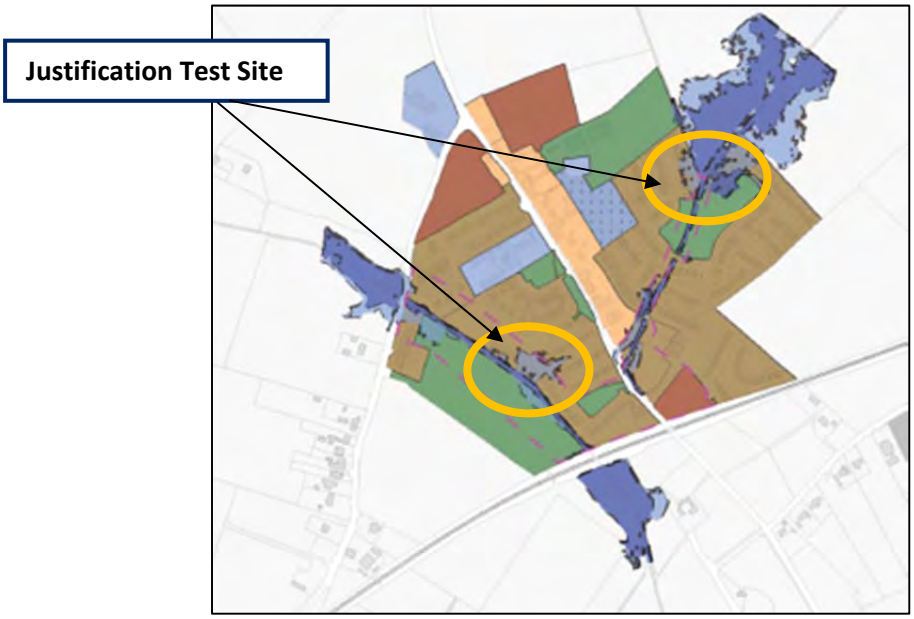
Historical Flooding	Historical flooding records indicate high water levels adjacent to the bridge crossing on the main street
Flood Zone Mapping	PFRA Indicative Mapping
Comment	Fluvial Flooding A review of the PFRA flood zones in this area highlighted lands either side of the Greese River which overlap 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. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent in Ballitore. The town slopes towards the Greese River. Climate Change The PFRA mapping indicates that areas in north east of the town show an increase in flood extents from Flood Zone A to Flood Zone B. Justification Test It was recommended to carry out the Development Plan Justification Test to assess the existing zonings adjacent to the Greese River in the town.
Conclusion	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. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.

Ballymore Eustace



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft CFRAM flood zones shows very little flood risk. All areas of flood risk are zoned for water compatible uses. Pluvial Flooding 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. Climate Change The CFRAM mapping does not indicate any significant changes in flood extent from Flood Zone A to Flood Zone B. Justification Test It is not required for this area.
Conclusion	The draft CFRAM fluvial flood mapping does not highlight any area of significant risk. The water compatible zonings adjacent to the River Liffey should be maintained. The proposed development in Sousheen Common should be accompanied by an FRA. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.

Caragh



Historical Flooding	The Awillyinish Stream historically has overtopped its banks following high rainfall events with recurring flooding at the bridge on the Caragh View Road.
Flood Zone Mapping	SFRA Indicative Mapping, supplemented further with RPS Hydraulic Modelling using OSi LiDAR data to generate SFRA Stage 2 Flood Zone Mapping.
Comment	Fluvial Flooding The indicative mapping does highlight potential flooding in the existing residential areas in Old Chapel Grove and The Streams. 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. Therefore the requirement for FRAs in this area is to be retained. 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. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent in Caragh. The town generally slopes east towards the River Liffey. Climate Change The indicative mapping indicates that areas in north east of the town and along the Awillyinish stream show an increase in flood extents from Flood Zone A to Flood Zone B. Justification Test It was recommended to carry out the Development Plan Justification Test to assess the existing residential zonings as there are limited areas at risk from flooding.

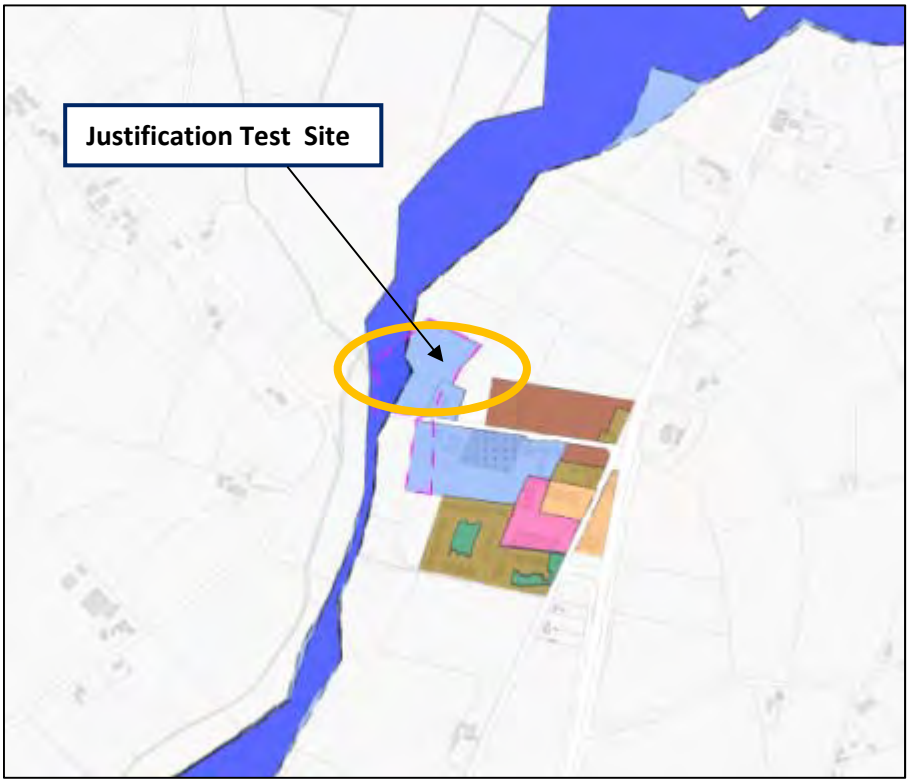
Conclusion	There is limited flood risk within the village. The existing residential zonings have been retained but future development will be subject a site-specific FRA with development being avoided in the flood zones. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.

Coill Dubh / Cooleragh

Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent. The lands in the Coill Dubh/ Cooleragh area are very flat and slope very gently towards the Slate River.

	Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

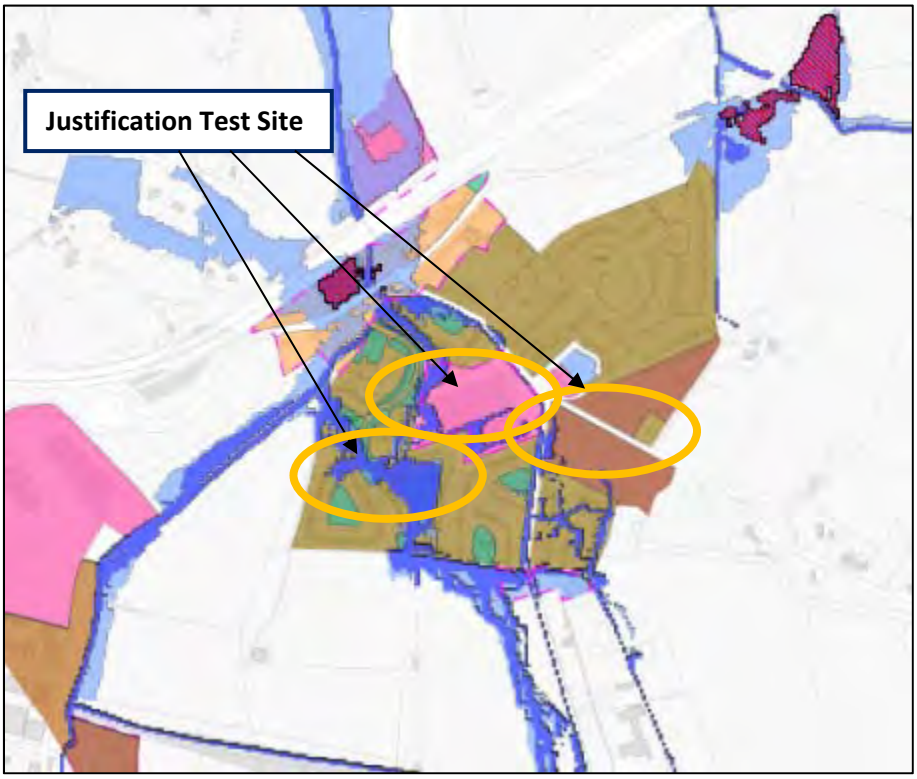
Crookstown



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	PFRA Indicative Mapping
Comment	Fluvial Flooding A review of the PFRA flood zones 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 site specific FRA for this site was submitted in support of a planning application for the development of a new school. 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. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent in Crookstown. The town slopes towards the Greese River. Climate Change The PFRA mapping does not highlight an increase in flood extents from Flood Zone A to Flood Zone B. Justification Test It was recommended to carry out the Development Plan Justification Test to assess the existing zonings adjacent to the Greese River in the town.
Conclusion	The school site has previously been subject to a FRA 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. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.

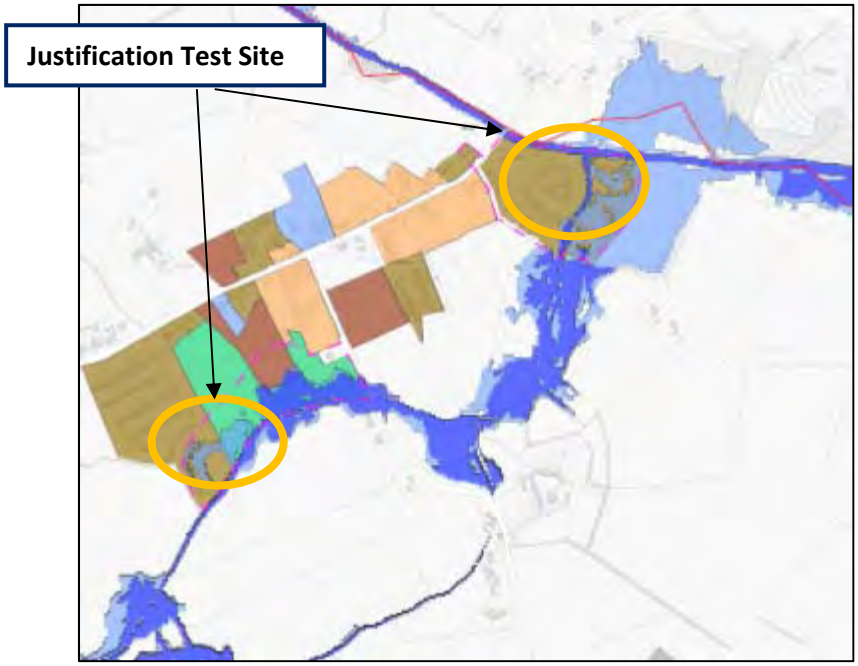
Johnstown



Historical Flooding	Johnstown has been subject to fluvial flooding in the past. This led to a flood relief scheme being constructed in the village.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft CFRAM flood zones in Johnstown highlighted areas which have zonings within flood risk areas. These include vulnerable zonings which require a justification test to validate the appropriateness of the zoning. There is residual risk to some defended areas as shown on the flood risk mapping however this area is zoned for water compatible uses. Pluvial Flooding 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. Climate Change The CFRAM mapping indicates that areas in the town centre show increase flood extents from Flood Zone A to Flood Zone B. Future development in this area should be cognisant of climate change in particular with regards to finished floor levels. Justification Test It was recommended to carry out the Development Plan Justification Test to

	assess if the zonings in severable areas were still suitable.
Conclusion	It was recommended to carry out the Development Plan Justification Test to assess if the zoning in these areas is still suitable. KCC carried out Justification Test and found that it is considered appropriate to retain the existing land zones in areas at risk of flooding but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site specific FRAs should address surface water and drainage, mitigation measures, residual risk (flood defence failure on the eastern side of the town and in the town centre) and appropriate land use with respect to vulnerability of the proposed development type. The Justification Test does not apply to minor development to existing buildings in this area however; a flood risk assessment of appropriate detail should accompany such applications to demonstrate that they would not have adverse flood risk impacts.

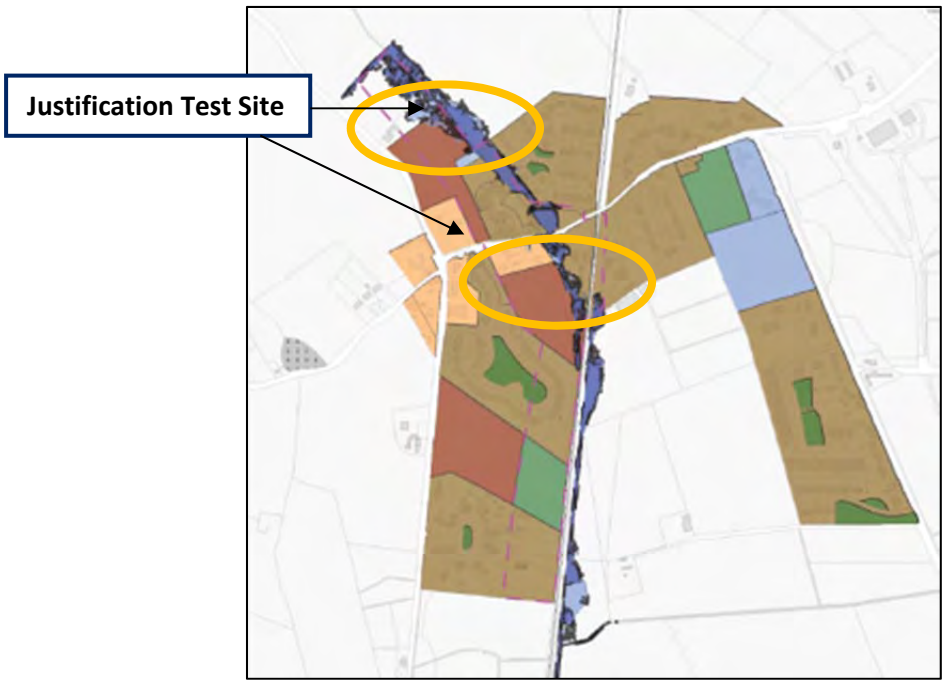
Johnstownbridge



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft 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. Pluvial Flooding 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. Climate Change The CFRAM mapping indicates that areas in the town centre show increase flood extents from Flood Zone A to Flood Zone B. Future development in this area should be cognisant of climate change in particular with regards to finished floor levels. Justification Test It was recommended to carry out the Development Plan Justification Test to assess if the zonings in the Glebe and Dunfierth Park were still suitable.
Conclusion	KCC carried out Justification Test and found that it is considered appropriate retain the existing land use zonings in areas at risk of flooding but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site specific FRAs should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. Justification Test would not apply to minor development to existing buildings in this area however; a flood risk assessment of appropriate detail should accompany such applications to demonstrate that they would not have adverse flood risk impacts. Johnstownbridge was identified as an AFA in the Eastern CFAM study, the proposed flood risk management policies shall be reviewed following publication of the Eastern CFRAM FRMP recommendations for the AFA in Q4 of 2016.

Kildangan



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	SFRA Indicative Mapping, supplemented further with RPS Hydraulic Modelling using OSi LiDAR data to generate SFRA Stage 2 Flood Zone Mapping.
Comment	Fluvial Flooding The indicative mapping does highlight potential flooding in proposed new residential zonings in the north west and adjacent to the town centre. The indicative flooding mapping has not accounted for any potential drainage ditch culverts underneath the railway line therefore the requirements for site specific FRAs in the southern end of the town has been maintained to assess if there is potential for the flood extent to progress to those areas. The fluvial mapping in Kildangan is confined to the extent of the LiDAR and appears to be truncated. As there are no land use zonings upstream or downstream no further modelling was required. Pluvial Flooding 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. Climate Change The indicative mapping indicates that areas in the north west of the village show an increase in flood extents from Flood Zone A to Flood Zone B. Justification Test It was recommended to carry out the Development Plan Justification Test to assess the new residential zonings as there is flood risk to parts of the sites.
Conclusion	It was recommended to carry out the Development Plan Justification Test to assess if the zoning in these areas is still suitable. KCC carried out Justification Test and found that it is considered appropriate retain the existing land zones in areas at risk of flooding but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site specific FRAs should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. The Justification Test does not apply to minor development to existing buildings in this area however; a flood risk assessment of appropriate detail should accompany such applications to demonstrate that they would not have adverse flood risk impacts.

Kilmeague

Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding 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. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

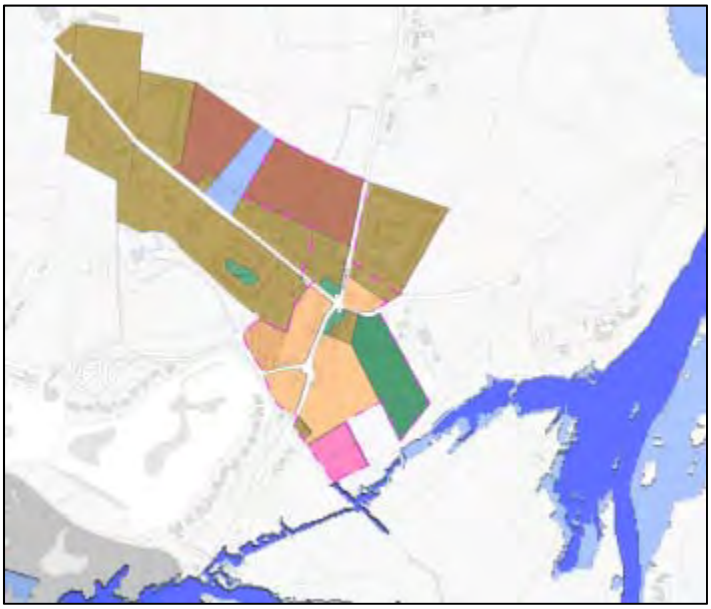
Moone

Historical Flooding	Historical flooding adjacent to the bridge in the north of the village.
Flood Zone Mapping	PFRA Indicative Mapping
Comment	Fluvial Flooding A review of the PFRA flood zones in this area highlighted limited lands in the north the village which overlap with Flood Zones but they are not zoned areas. Due to the limited nature of the risk identified in the PFRA mapping additional flood modelling was not identified as critical in this area. Pluvial Flooding 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. Pluvial flooding may be a concern for the proposed zonings in low lying areas in the north of the village. Climate Change The PFRA mapping does not highlight an increase in flood extents from Flood Zone A to Flood Zone B.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

Robertstown

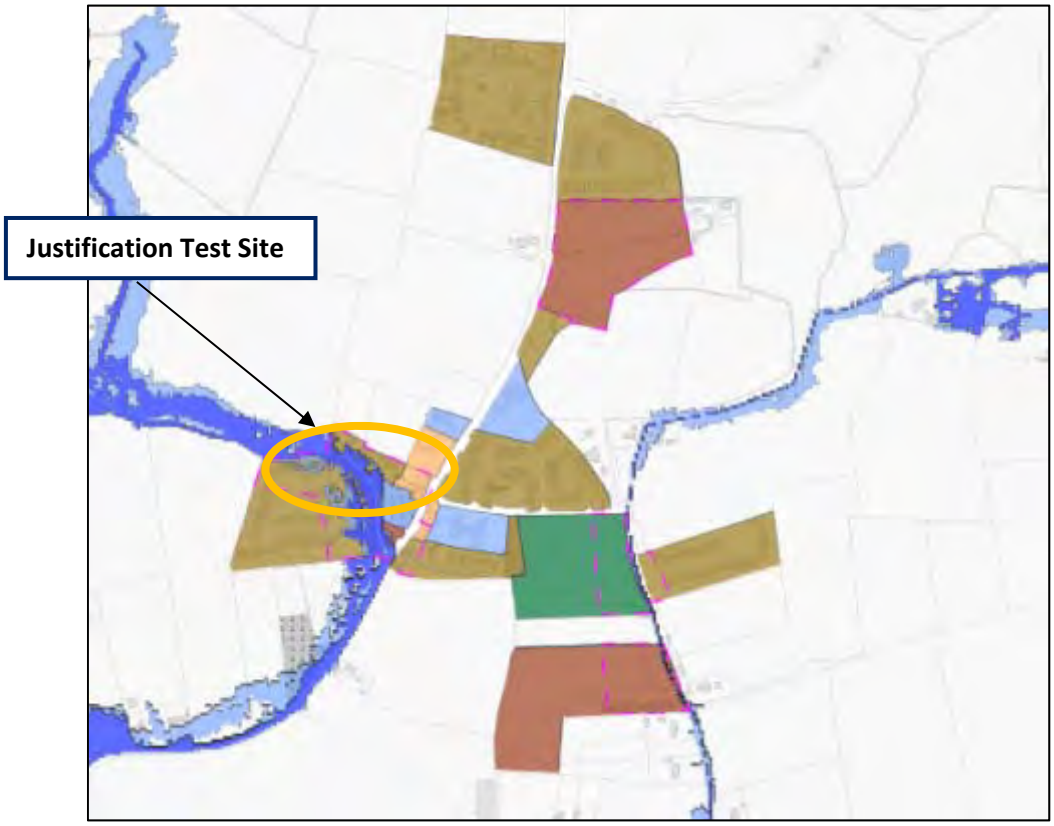
Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore, no further flood zone mapping was deemed to be necessary. Pluvial Flooding 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 Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

Straffan



Historical Flooding	No historical fluvial flooding reported in the area. KCC indicated that the centre of the village has experienced flooding associated with surface water drainage.
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding 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. Pluvial Flooding 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. Climate Change The CFRAM mapping does not indicate an increase in flood extents from Flood Zone A to Flood Zone B. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

Suncroft



Historical Flooding	Historical flooding noted in the east of the town
Flood Zone Mapping	Draft CFRAM mapping
Comment	Fluvial Flooding A review of the draft CFRAM flood zones in Suncroft highlighted lands subject to a B zoning objective (Existing Residential/Infill), which is classified as highly vulnerable development, overlaps with Flood Zones A and B. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent. The area is quite flat and gently slopes towards the west. Climate Change The CFRAM mapping indicates that there is a small increase flood extents from Flood Zone A to Flood Zone B. Future development in this area should be cognisant of climate change in particular with regards to finished floor levels. Justification Test It was recommended to carry out the Development Plan Justification Test to assess if the zonings in Newtown Grove estate were still suitable.
Conclusion	It was recommended to carry out the Development Plan Justification Test to assess if the zoning in these areas is still suitable. KCC carried out a Justification

	Test and found that it is considered appropriate to retain the existing land use zonings in areas at risk of flooding but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site specific FRAs should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. The Justification Test does not apply to minor development to existing buildings in this area however; a flood risk assessment of appropriate detail should accompany such applications to demonstrate that they would not have adverse flood risk impacts. Suncroft was identified as an AFA in the South Eastern CFRAM study and the draft FRMP has recommended a series of flood relief measures for the town. Future zoning should be cognisant of this proposed flood relief scheme. KCC has committed to implementing the recommendations of the CFRAM and will work in conjunction with the OPW to deliver the final recommendations of the FRMP.

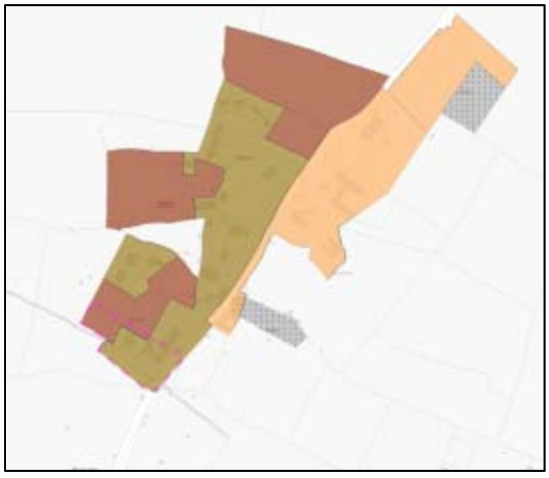
Timolin

Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	SFRA Indicative Mapping
Comment	Fluvial Flooding A review of the indicative flood zones in Timolin highlighted existing development overlapping with Flood Zones A and B. Pluvial Flooding

	The PFRA mapping does not highlight any significant pluvial extent. The village slopes west towards the Greese River. Climate Change The CFRAM mapping indicates that there is a small increase flood extents from Flood Zone A to Flood Zone B. Future development in this area should be cognisant of climate change in particular with regards to finished floor levels. Justification Test It was recommended to carry out the Development Plan Justification Test to assess if the zonings in the southern part of the village were still suitable.
Conclusion	It was recommended to carry out the Development Plan Justification Test to assess if the zoning in these areas is still suitable. KCC carried out a Justification Test and found that it is considered appropriate to retain the existing land use zonings in areas at risk of flooding but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site specific FRAs should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. The Justification Test does not apply to minor development to existing buildings in this area however; a flood risk assessment of appropriate detail should accompany such applications to demonstrate that they would not have adverse flood risk impacts.

6.1.4 Rural Settlements

Allen



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping

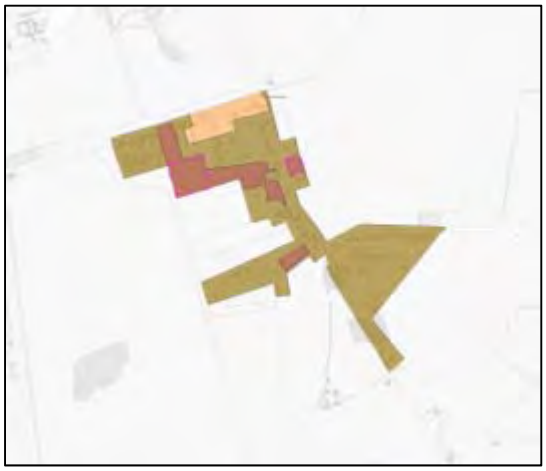
Comment	Fluvial Flooding The PFRA mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary. Pluvial Flooding 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 Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

Ardclough

Historical Flooding	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.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding

	The PFRA 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. Pluvial Flooding The PFRA mapping highlights clusters of pluvial risk which agreed with historical flooding records. Surface water and drainage should be addressed in site specific FRAs particularly considering the pluvial flooding history in the settlement Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

Brannockstown



Historical Flooding	Some historical pluvial flooding in the centre of the village.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding The PFRA mapping highlights clusters of pluvial risk which agreed with historical flooding records. Surface water and drainage should be addressed in site specific FRAs particularly considering the pluvial flooding history in the village. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

Broadford

Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	PFRA Indicative Mapping
Comment	Fluvial Flooding

	A review of the PFRA flood zones in this area highlighted limited lands in the village which overlap with Flood Zone. The flooding is largely confined to open space and impacts on a small number of properties. Due to the limited nature of the risk identified in the PFRA mapping additional flood modelling was not identified as critical in this area. However any future development in this area shall be subject to a site specific FRA. Pluvial Flooding 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. Climate Change The PFRA mapping does not highlight an increase in flood extents from Flood Zone A to Flood Zone B.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch. The areas within the PFRA flood extents shall also be subject to a site specific FRA. 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.

Brownstown

Historical Flooding	No historical flooding reported in the area.

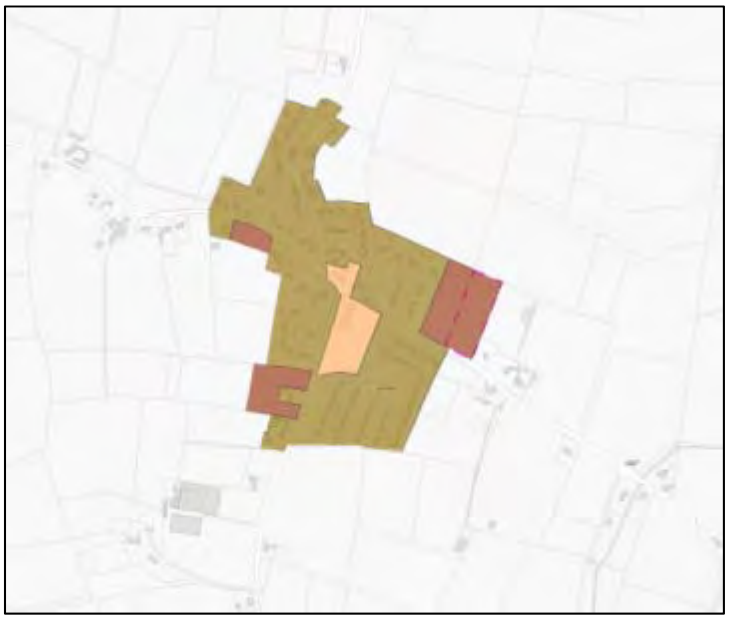
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA mapping does not indicate any fluvial risk in this area. A review of historical flooding, significant watercourses and historical mapping did not indicate any further fluvial flood risk. Therefore no further flood zone mapping was deemed to be necessary. Pluvial Flooding 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. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.

Calverstown

Historical Flooding	Historical pluvial flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping

Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding The PFRA mapping highlights some pluvial extents to the centre and east of the settlement which are agree with historical surface water flooding. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch

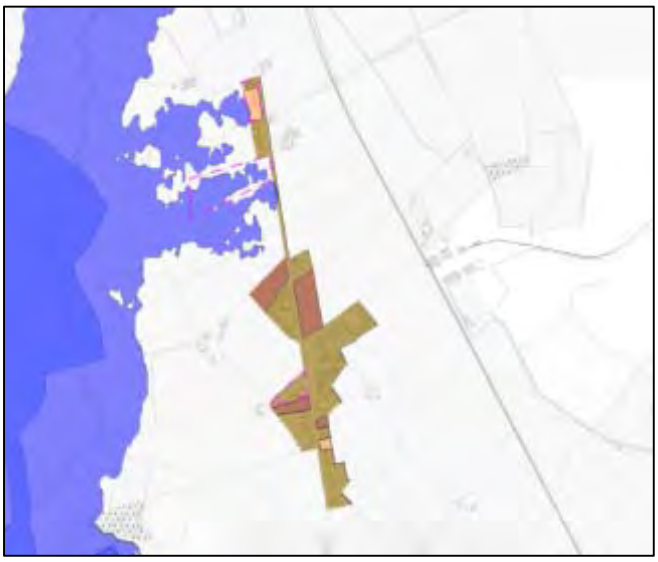
Cutbush



Historical Flooding	Historical pluvial flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping

Comment	<u>Fluvial Flooding</u> The PFRA 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. <u>Pluvial Flooding</u> The PFRA mapping highlights some pluvial extents to the east of the settlement. <u>Climate Change</u> The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. <u>Justification Test</u> It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch

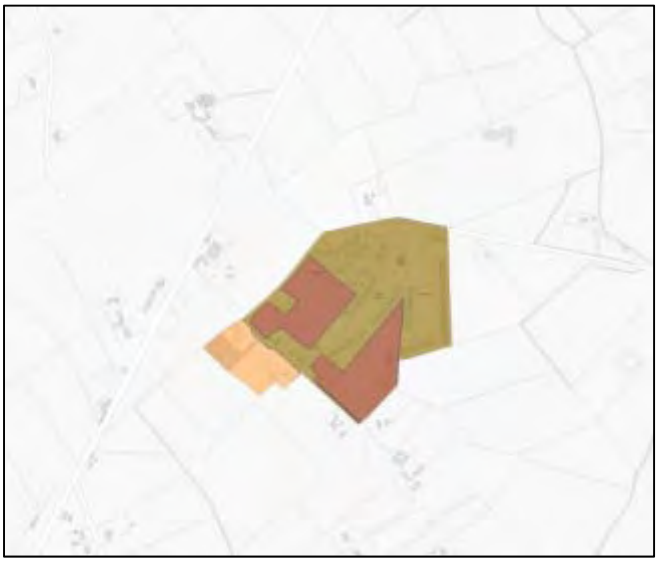
Kilberry



Historical Flooding	Historical pluvial flooding reported in the area.
Flood Zone Mapping	Draft CFRAM mapping
Comment	<u>Fluvial Flooding</u> The CFRAM mapping indicates some fluvial risk in the north of the village. However

	it does not impact on the land allocations for the settlement. 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. Pluvial Flooding The PFRA mapping highlights clusters of pluvial risk which agreed with historical flooding records. Climate Change The CFRAM mapping does not indicate any significant changes to the west of the village between Flood zones A and Flood Zone B. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

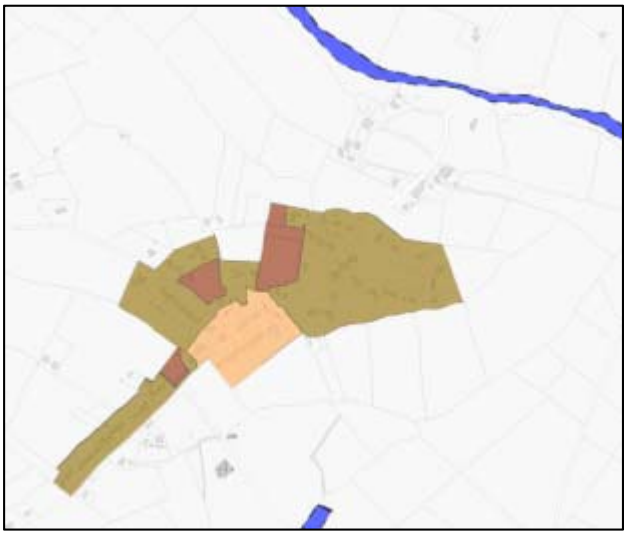
Kilmead



Historical Flooding	Historical pluvial flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent in Kilmead. The settlement is built on very low lying land generally sloping west. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.

Kilteel



Historical Flooding	Historical pluvial flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent in Kilteel. The

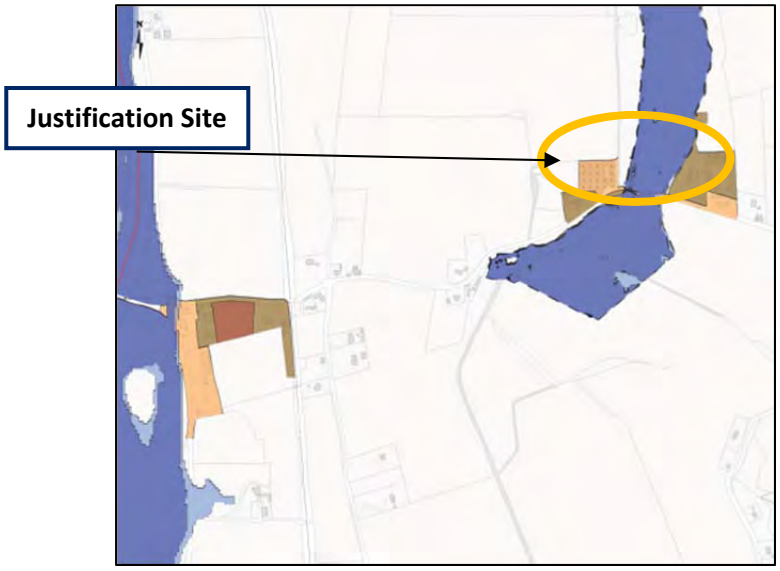
	settlement is built on steep land on the lower slopes of the Dublin / Wicklow Mountains. Kilteel slopes west towards the town of Kill. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.

Maddenstown

Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding The PFRA mapping highlights clusters of pluvial risk in the settlement. It is built on a steep area of ground sloping north west. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no

	further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.

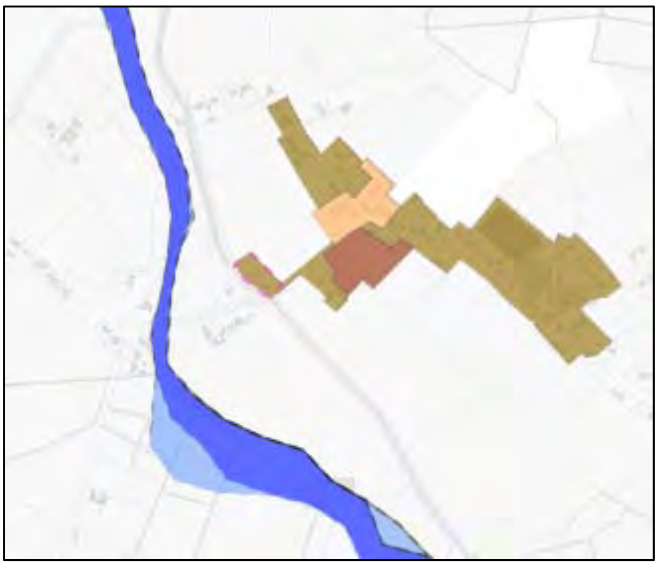
Maganey/Levitstown



Historical Flooding	No historical flooding reported in the Levitstown however the Barrow River is known frequently to flood in Maganey.
Flood Zone Mapping	CFRAM and SFRA Indicative Mapping, supplemented further with RPS Hydraulic Modelling using OSi LiDAR data to generate SFRA Stage 2 Flood Zone Mapping.
Comment	Fluvial Flooding A review of the indicative flood zones in Levitstown highlighted a proposed new settlement expansion area overlapping with Flood Zones A and B. The CFRAM mapping shows the extensive flooding along the banks of the Barrow River in Maganey. The fluvial mapping in Levitstown is confined to the extent of the LiDAR and appears to be truncated. As there is no land allocations upstream or downstream of this area no further modelling was required. Pluvial Flooding The PFRA mapping highlights clusters of pluvial extent west of Levitstown. Climate Change The CFRAM and the indicative mapping do not indicate any significant increase flood extents from Flood Zone A to Flood Zone B. Justification Test

	It was recommended to carry out the Development Plan Justification Test to assess if the zoning in the east of Levitstown is still suitable.
Conclusion	A proposed settlement expansion area in Levitstown has been redesignated to a water compatible use while expansion areas in the other parts of this settlement have been retained but development will be subject a site-specific FRA with development being avoided in the flood zones. The FRA should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.

Milltown



Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding 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

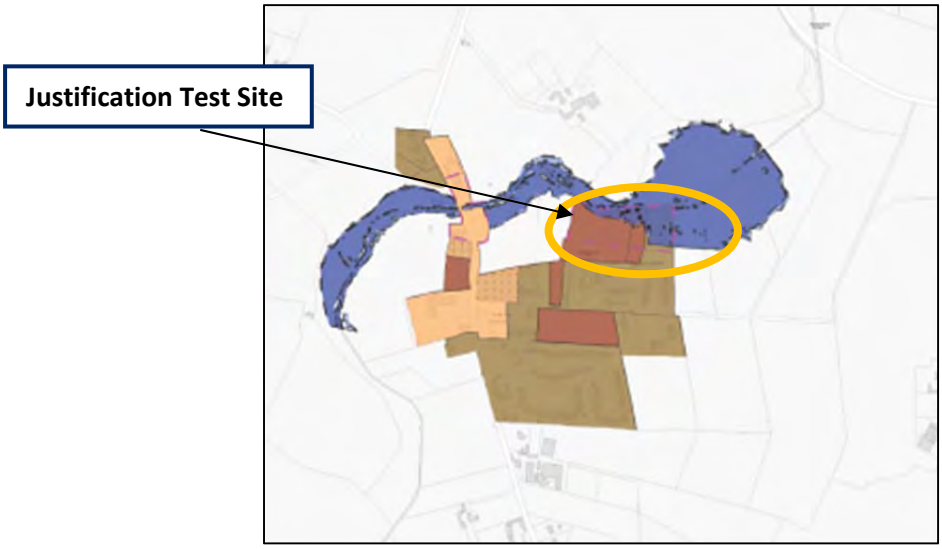
	canal. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch.

Narraghmore

Historical Flooding	No historical flooding reported in the area.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent in Narraghmore. The village generally slopes east towards the M9 Motorway.. Climate Change

	The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch

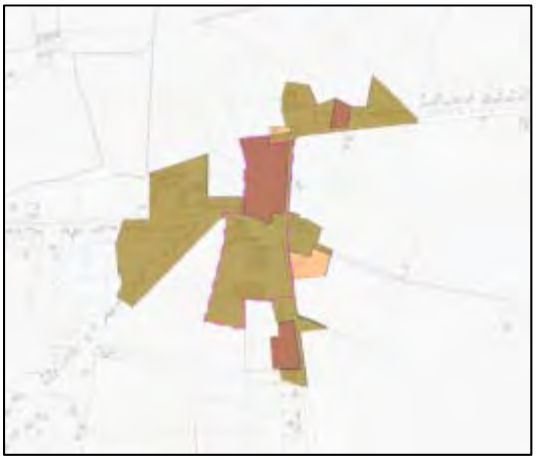
Nurney



Historical Flooding	No historical flooding reported in the Nurney village.
Flood Zone Mapping	SFRA Indicative Mapping, supplemented further with RPS Hydraulic Modelling using OSi LiDAR data to generate SFRA Stage 2 Flood Zone Mapping.
Comment	Fluvial Flooding 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. Pluvial Flooding The PFRA mapping does not highlight any significant pluvial extent. Nurney is

	located in flat lying land and generally slopes west. Climate Change The indicative mapping does not indicate any significant increase flood extents from Flood Zone A to Flood Zone B. Justification Test It was recommended to carry out the Development Plan Justification Test to assess if the residential zoning in the west of the village is still suitable.
Conclusion	It was recommended to carry out the Development Plan Justification Test to assess if the proposed residential zoning in Nurney is still suitable. KCC carried out Justification Test and found that it is considered appropriate to retain the existing settlement expansion designation in areas at risk of flooding but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site specific FRAs should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. The Justification Test does not apply to minor development to existing buildings in this area however; a flood risk assessment of appropriate detail should accompany such applications to demonstrate that they would not have adverse flood risk impacts.

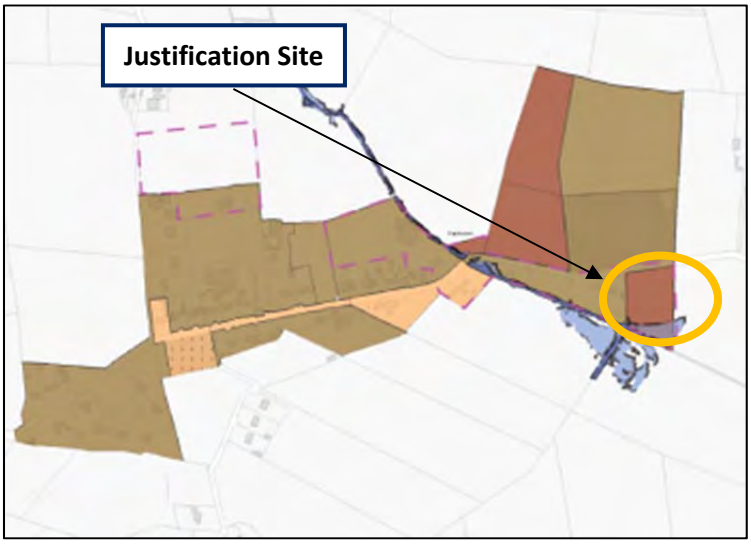
Rathcoffey



Historical Flooding	Some pluvial issues highlighted in the village.
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding The PFRA mapping highlights clusters of pluvial risk which agreed with historical flooding records. The settlement generally slopes west. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch

Staplestown



Historical Flooding	No historical flooding reported in the Staplestown village.
Flood Zone Mapping	SFRA Indicative Mapping, supplemented further with RPS Hydraulic Modelling using OSi LiDAR data to generate SFRA Stage 2 Flood Zone Mapping.
Comment	Fluvial Flooding A review of the indicative flood zones in Staplestown highlighted a proposed new residential land allocation overlapping with Flood Zones B. The fluvial mapping in Staplestown is confined to the extent of the LiDAR and appears to be truncated at the eastern end of the settlement. The LiDAR covers the large majority of the site

	however a site specific FRA should be carried out by applicants for this site to confirm the extent of the 0.1% AEP flood extent. Pluvial Flooding 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. Climate Change The indicative mapping shows a slight increase flood extents from Flood Zone A to Flood Zone B. Justification Test It was recommended to carry out the Development Plan Justification Test to assess if the residential zoning in the west of the village is still suitable.
Conclusion	It was recommended to carry out the Development Plan Justification Test to assess if the proposed settlement expansion area in Staplestown is still suitable. KCC carried out Justification Test and found that it is considered appropriate to retain the existing expansion designation in areas at risk of flooding but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site specific FRAs should address surface water and drainage, mitigation measures, residual risk and appropriate land use with respect to vulnerability of the proposed development type. Justification Test would not apply to minor development to existing buildings in this area however; a flood risk assessment of appropriate detail should accompany such applications to demonstrate that they would not have adverse flood risk impacts.

Two Mile House

Historical	No historical flooding reported in the area.

Flooding	
Flood Zone Mapping	No fluvial risk indicated on PFRA mapping
Comment	Fluvial Flooding The PFRA 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. Pluvial Flooding 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. Climate Change The PFRA mapping does not indicate any fluvial risk in this area. Therefore no further flood zone mapping was deemed to be necessary. Justification Test It is not required for this area.
Conclusion	There is very little flood risk identified in this area. However all developments will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. FRAs are still required in the areas outlined on the associated Flood Maps as shown in Appendix B due to localised spot flooding, surface water management issues or proximity to a local drainage ditch

6.1.5 Individual Risk Receptors

Section 5.5 outlines how the OPW PFRA identified AFAs that may be at risk from flooding. The PFRA also identified individual risk receptors (IRRs) which may be at risk. IRRs are an individual asset of particular economic or social, such as transport and utilities infrastructure, which may require specific consideration during the development of the flood risk management options. These IRRs are being examined in further detail during the CFRAM process.

The PFRA process identified one IRR in Kildare which warranted further review, The Longstone ESB power station on the River Liffey located just upstream of Ballymore Eustace. The ECFRAM initial flood risk review report found due to the managed nature of the river flow at this location flooding from the river is not considered to be a significant flood risk to this station the principal risk is from a dam breach.

The PFRA did not identify other IRRs in Kildare but the CFRAM process may identify further IRRs which may require specific consideration during the development of the flood risk management options.

7 FLOOD RISK MANAGEMENT POLICIES AND OBJECTIVES

7.1 GENERAL DEVELOPMENT PLANS AND STRATEGIES

The County Development Plan outlines surface water and flooding 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 and are shown in **Table 7.1**.

Table 7.1 County Development Plan Flood Risk Management policies

Planning Policy	Policy Description
SW 1	To manage protect and enhance surface water quality to meet the requirements of the EU Water Framework Directive
SW 2	To incorporate Flood Risk Management into the spatial planning of the County, to meet the requirements of the EU Floods Directive and the EU Water Framework Directive.
SW 3	To support and co-operate with the Office of Public Works (OPW) in delivering the Catchment Based Flood Risk Assessment and Management Programme in particular the Eastern and South Eastern CFRAM studies and associated Flood Management Plans (FRMP). The recommendations and outputs arising from these studies shall be incorporated in preparing plans and assessing development proposals.
SW 4	To 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)
SW 5	To 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. For lands identified in the Strategic Flood Risk Assessment (SFRA) a site-specific Flood Risk Assessment to an appropriate level of detail, addressing all potential sources of flood risk, is required, demonstrating compliance with the aforementioned Guidelines or any updated version of these guidelines, paying particular attention to residual flood risks and any proposed site specific flood management measures.
SW 6	To ensure effective management of residual risks for development permitted on floodplains.
SW 7	To maintain and enhance the existing surface water drainage systems in the County and promote and facilitate the development of Sustainable Urban Drainage Systems (SuDS) including integrated constructed wetlands and to promote and support the retrofitting of SUDS in established urban areas.
SW 8	To incorporate Sustainable Urban Drainage Systems (SuDS) as part of all plans to address the potential for sustainable urban drainage at district or site level.
SW 9	To limit the surface water runoff from new developments through the use of Sustainable Urban Drainage Systems (SUDS). These systems should not adversely impact on open space provision in residential areas.
SW 10	To liaise with the Office of Public Works (OPW) in delivering on flood management works and schemes, as may arise, through the OPW Non-coastal Minor Works Programme and through the OPW's Capital Programme
SW 11	To ensure that all towns, villages and settlements are provided with adequate flood alleviation measures within the limits of cost effectiveness and the availability of finance.
SW 12	To ensure that flood risk management is incorporated into the preparation of Local Area Plans in accordance with 'The Planning System and Flood Risk Management - Guidelines for Planning Authorities (2009)'.
SW 13	To ensure that the Justification Test for Development Management is applied to

	proposals for development in areas at a high or moderate risk of flooding where the development proposed is vulnerable to flooding and would generally be inappropriate as set out in Table 3.2 of the 'The Planning System and Flood Risk Management - Guidelines for Planning Authorities (2009)'.
SW 14	To seek to ensure that development will not interfere with or interrupt existing surface water drainage systems.
SW 15	To ensure that the reasonable requirements of Inland Fisheries Ireland are adhered to in the construction of flood alleviation measures in the County.
SW 16	To recognise the important role of bog land and other wetland areas in flooding patterns. Development in these areas shall therefore be subject of a Flood Risk Assessment in accordance with the relevant guidance.
SW 17	To require development proposals which may affect canals and their associated infrastructure to prepare a flood risk assessment in accordance with the relevant guidance.
SW 18	To ensure development proposals in rural areas (excluding one-off rural housing) demonstrate compliance with the following: ▪ the ability of a site in an unserviced area to accommodate an on-site waste water 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. ▪ the ability of a site in an unserviced 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). ▪ the need to comply with the requirements of 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' published by the Minister for the Environment, Heritage and Local Government in November 2009.
SW 19	To liaise with the Office of Public Works (OPW) in delivering flood management and alleviation programmes to include, but not limited to, the following: ▪ South Eastern CRFRAMS and the recommendations therein. ▪ Eastern CFRAMS and the recommendations therein. ▪ Newbridge Surface Water Improvement Schemes. ▪ Morrell River Flood Management Scheme. ▪ Hazelhatch Flood Management Scheme.
SW 20	To develop and resource a multi-annual programme for the maintenance of river channels under the responsibility of Kildare County Council, to include but not limited to: ▪ Barrow Drainage District. ▪ Greese Drainage District. ▪ Lerr Drainage district.
SW 21	To ensure that rural one off residential developments maintain existing drainage systems, particularly at access points to the property.

The County Development Plan also outlines water and drainage objectives which the Council will adhere to and are shown in **Table 7.2**.

Table 7.2 County Development Plan Flood Risk Management objectives

Planning Objective	Objective Description
WDO 1	To continually monitor and review the water quality standards of Kildare County Council in light of European Communities (Drinking Water) Regulations 2007 (SI 278 of 2007), as may be amended and to ensure continuing compliance.
WDO 2	To acknowledge the strategic policy recommendations in relation to flood risk identified in the Regional Planning Guidelines for the Greater Dublin Area 2010-2022.

WDO 3	To liaise with adjoining Local Authorities, all relevant departments and agencies in the alleviation of flood risk in the County.
WDO 4	To promote rain water harvesting in all developments and in particular in larger schemes.
WDO 5	To liaise with Irish Water to promote the sustainable development of water supply and drainage infrastructure in the County and the Region, in accordance with the objectives and recommendations set out in the Greater Dublin Drainage Study, Irish Water's Water Services Strategic Plan and the Eastern and Midlands Water Supply Project
WDO 6	To present business cases to Irish Water to secure capital investment for required infrastructural projects in the County based on the Core Strategy.
WDO 7	To protect the natural resources of the County which are the foundation for the Green Infrastructure network and a basis for growth and competitive advantage in the tourism, food and fisheries sectors
WDO 8	To work in conjunction with Irish Water to identify and facilitate the timely delivery of the water services required to realise the development objectives of this Plan.

7.2 FLOOD RISK MANAGEMENT PLANS

The Eastern and South Eastern CFRAM FRMPs are ongoing (due for completion in late 2016) and Areas for Further Assessment (AFAs) are currently being assessed. If it is deemed necessary, flood risk management objectives, options and plans will be developed for the Eastern CFRAM and any recommendation from the FRMPs should be supported in future development plans. Section 5.3.2 outlines some of the draft flood risk management proposals for the South Eastern CFRAM Study Area.

8 SUMMARY

8.1 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.

8.2 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 draft CFRAM Studies and the SFRA indicative flood zone mapping. The Flood Zone mapping is based on the best currently available data and a more detailed, site specific FRA may generate localised flood extents. Following their completion the final flood zone mapping areas covered by the CFRAM programme will be reviewed and adopted into the current or future County Development Plan SFRAs. 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.

8.3 FLOOD MANAGEMENT POLICIES

The existing County Development Plan flood risk management policies have been retained and amended as appropriate. The council has committed to supporting and co-operating with the Office of Public Works (OPW) in delivering the Catchment Based Flood Risk Assessment and Management Programme in the Eastern and South Eastern District CFRAMS and associated Flood Management Plans (FRMP). The recommendations and outputs arising from these studies shall be considered in preparing plans and assessing development proposals. They 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. They have also committed to delivering flood alleviation and management schemes including the Morrell River

Flood Management Scheme, the Dara Park Surface Water Improvement Scheme as well support implementation of minor flood management schemes. Local flood risk management policies will also recommendations will be implemented based on the findings of the SFRA. The full list of recommendations and mapping are shown in Appendix A and Appendix B.

8.4 SFRA REVIEW AND MONITORING

The Kildare SFRA will be reviewed and updated every six years in line the County Development Plan statutory review process. Additionally, outputs from future studies and datasets may trigger a review and update of the SFRA during the lifetime of the 2017-2023 County Development Plan. 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

Environs Plans

Town Environs	Recommendations
Blessington	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ Development in Flood Zone A should only be water compatible. ▪ Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event. ▪ 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. ▪ All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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. 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. Blessington was identified as an AFA in the Eastern CFAM study, the proposed flood risk management policies shall be reviewed following publication of the Eastern CFRAM FRMP recommendations for the AFA in Q4 of 2016.
Kilcock Environs	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. An FRA should be carried out to address surface water management on the site paying particular attention to potential pluvial risk in the northern section of the environs. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. Kilcock was identified as an AFA in the Eastern CFAM study, the proposed flood risk management policies shall be reviewed following publication of the Eastern CFRAM FRMP recommendations for the AFA in Q4 of 2016.
Ladytown Environs	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. An FRA should be carried out to address surface water management on the lands paying particular attention to potential pluvial risk. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.

Small Towns

Towns	Recommendations
Athgarvan	In order to reduce surface water run-off and to minimise the risk of flooding, all lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development surface water and drainage policies To undertake a study of surface water drains in the town and to seek an upgrade / maintenance of drains as appropriate, subject to the availability of finance. To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Castledermot	In order to reduce surface water run-off and to minimise the risk of flooding, all lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. To facilitate an upgrade of surface water drains in the town where required, subject to the availability of finance. To require separate foul and surface water systems for all future developments To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ Development in Flood Zone A should only be water compatible. ▪ Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event. ▪ 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. 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. 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. Castledermot was identified as an AFA in the South Eastern CFRAM study and the draft FRMP has recommended a series of flood relief measures for the town. Future zoning should be cognisant of this proposed flood relief scheme. KCC has committed to implementing the recommendations of the CFRAM and will work in conjunction with the OPW to deliver the final recommendations of the FRMP.
Derrinturn	Development of the lands identified for the town expansion should not include any vulnerable land uses until an upgrade of the Derrinturn Surface Water Scheme is completed. Based on the indicative flood zone mapping the extent of the areas required to carry out an FRA has been delineated as shown in Appendix B. FRAs should address surface water and drainage, mitigation measures, residual flood risk and the sequential approach to assign appropriate land use with respect to vulnerability of the proposed development type. All development will be required to be built in accordance with SuDS principles and in compliance with the County Development Plan surface water

Towns	Recommendations
	and drainage policies.
Kill	In order to reduce surface water run-off and to minimise the risk of flooding, all lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. To facilitate an upgrade of surface water drains in the town where required, subject to the availability of finance. To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed.
Prosperous	In order to reduce surface water run-off and to minimise the risk of flooding, all lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. To facilitate an upgrade of surface water drains in the town where required, subject to the availability of finance. To require separate foul and surface water systems for all future developments To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ Development in Flood Zone A should only be water compatible. ▪ Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event. ▪ 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. 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. 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.
Rathangan	In order to reduce surface water run-off and to minimise the risk of flooding, all lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. To require separate foul and surface water systems for all future developments. To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Rathangan was identified as an AFA in the South Eastern CFRAM study and the draft FRMP has not recommended any flood relief measures for the town. KCC has committed to implementing the recommendations of the CFRAM and will work in conjunction with the OPW to deliver the final recommendations of the FRMP.

Villages

Villages	Recommendations
Allenwood	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development surface water and drainage policies. 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. Allenwood was identified as an AFA in the South Eastern CFRAM study however the draft FRMP has not recommended any particular flood relief measures for the town. KCC has committed to implementing the recommendations of the CFRAM and will work in conjunction with the OPW to deliver the final recommendations of the FRMP.
Ballitore	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ Apply sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Ballymore Eustace	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ Should address residual risk of culvert blockage (where applicable), increased flood extents

Villages	Recommendations
	under climate change scenarios and pluvial risk which should be aimed at setting finished floor levels. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Caragh	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Coill Dubh / Cooleragh	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Crookstown	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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.

Villages	Recommendations
	All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Johnstown	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Johnstownbridge	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Kildangan	To ensure that development proposals for the lands identified in Appendix B are subject to site

Villages	Recommendations
	specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Kilmeague	No significant risk is identified. As a minimum all development proposals shall carry out a surface water and drainage assessment. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Moone	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Robertstown	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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.

Villages	Recommendations
	All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Straffan	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.
Suncroft	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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. Suncroft was identified as an AFA in the South Eastern CFRAM study and the draft FRMP has recommended a series of flood relief measures for the town. Future zoning should be cognisant of this proposed flood relief scheme. KCC has committed to implementing the recommendations

Villages	Recommendations
	of the CFRAM and will work in conjunction with the OPW to deliver the final recommendations of the FRMP
Timolin	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies. 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.

Rural Settlements

Settlements	Recommendations
Allen	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Ardclough	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following. ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Brannockstown	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following:

Settlements	Recommendations
	▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Broadford	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Brownstown	No significant risk identified as a minimum all development proposals shall carry out a surface water and drainage assessment. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Calverstown	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Cutbush	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Kilberry	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following:

Settlements	Recommendations
	▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. ▪ All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Kilmead	No significant risk is identified. As a minimum all development proposals shall carry out a surface water and drainage assessment. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development surface water and drainage policies.
Kilteel	No significant risk identified as a minimum all development proposals shall carry out a surface water and drainage assessment. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Maddenstown	No significant risk is identified. As a minimum all development proposals shall carry out a surface water and drainage assessment. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Maganey/Levitstown	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Milltown	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Narraghmore	Development proposals for lands located west and south-west of the Settlement Core shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed.
Nurney	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following:

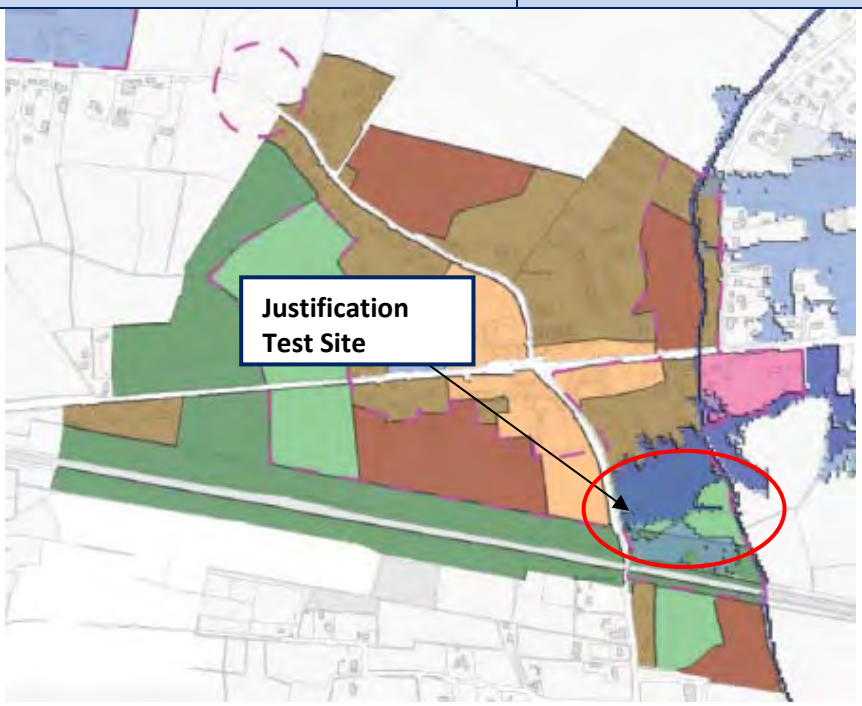
Settlements	Recommendations
	▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ Should address residual risk of culvert blockage (where applicable), increased flood extents under climate change scenarios and pluvial risk which should be aimed at setting finished floor levels. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Rathcoffey	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Staplestown	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following. ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.
Twomilehouse	To ensure that development proposals for the lands identified in Appendix B are subject to site specific flood risk assessment appropriate to the type and scale of development being proposed. Site Specific FRAs should address the following: ▪ The sequential approach should be applied through site planning ▪ Highly Vulnerable Development shall not be permitted in Flood Zone A or B. ▪ 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. All lands will be required to be developed in accordance with SuDS principles and in compliance with the County Development Plan surface water and drainage policies.

APPENDIX B

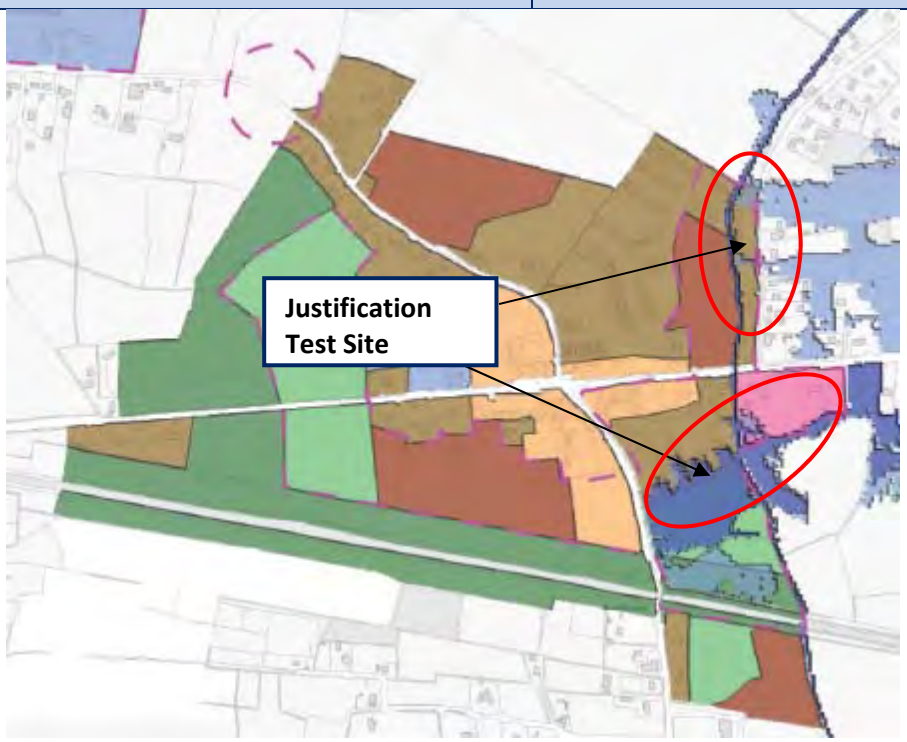
FLUIVAL FLOOD ZONE MAPPING

APPENDIX C

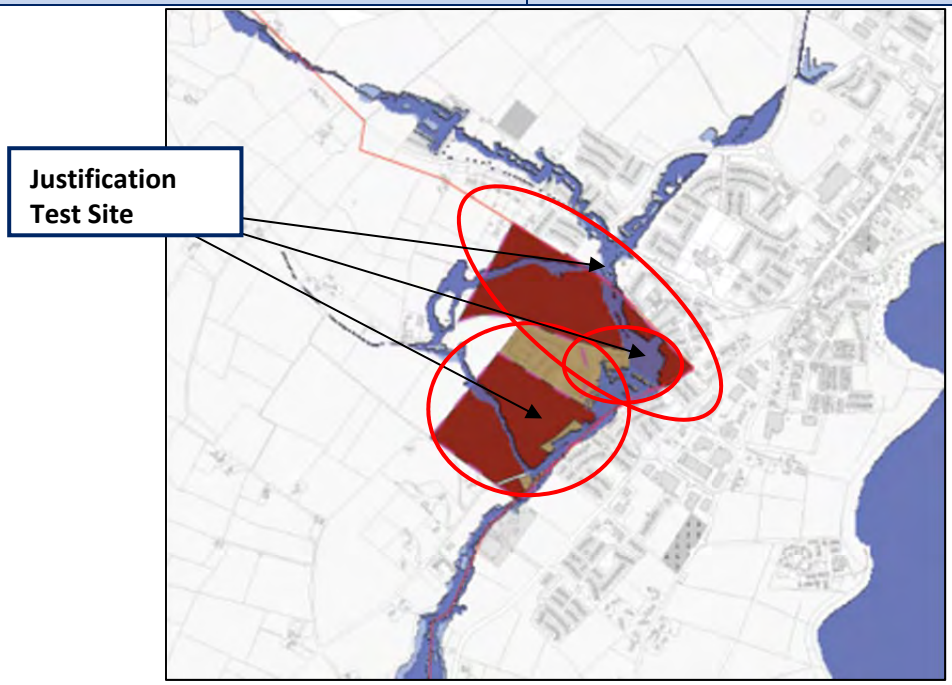
JUSTIFICATION TESTS

County Development Plan 2017-2023		B Zoning Allenwood
		
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.	Allenwood was identified as a Village in the County Development Plan 2011-2017. It is proposed to remain a village in the Draft Kildare County Development Plan 2017-2023 Arising from the RPGs and the Draft Kildare County Development Plan 2017-2023, the County's 11 designated villages are to accommodate 1,184 new residential units during the period between 2011 and 2023. Allenwood is to continue as a local service centre with growth levels to cater for local needs. Allenwood shall also foster local enterprise that supports it sustainable development.
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 subject site is zoned B Existing Residential / Infill in the current CDP 2011-2017. This zoning seeks to protect and improve existing residential amenity and to provide for appropriate infill residential development and to provide for new and improved ancillary services. The undeveloped portion of the site measures approximately 2.5ha and approximately 1.74ha is located inside the flood zone. There have been houses developed on the northern section of the site and it appears that the flood zone may impact on some of these dwellings. There appears to be some open drainage through the site and the Grand Canal and Bond Bridge are

		located to the south of the site. A tributary of the River Slate is adjacent to the east of the site and it flows in a southerly direction. This site was zoned in the Allenwood Village Plan as part of the Kildare County Development Plan 2011-2017.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The subject site is located in close proximity to the River Slate and the Grand Canal and is identified as being at risk of flooding. The site has never been the subject of a planning application. The site is zoned B Existing Residential / Infill in the current CDP 2011-2017. There are enough lands zoned for New Residential development in Allenwood that could accommodate residential units which is sufficient to facilitate the towns' growth targets over the life time of this plan.
	(ii) Comprises significant previously developed and / or underutilized lands;	No - The majority of the site does not comprise previously developed lands. The land appears to be in use for agricultural purposes.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is located within approximately 230 meters of the crossroads in the centre of Allenwood.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The site is located in close proximity to the village centre but there are a number of undeveloped suitably zoned sites also in close proximity to the village centre that do not have the same flooding risks that could accommodate development. Given the availability of other lands within the town centre and adjoining it, together with other permissions outside of the ones subject to significant flooding it is not considered essential for compact and sustainable urban growth.
	(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 is already enough suitably zoned land that is not at risk of flooding at various locations in Allenwood. These lands will facilitate the appropriate sustainable development of Allenwood in line with the proposed Settlement Strategy of the Kildare County Development Plan 2017-2023. Therefore it is considered appropriate to rezone this site to agricultural in the Draft Kildare County Development Plan 2017-2023.
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	The SFRA notes that the subject lands have **failed to pass** the Justification Test and that the proposed land-use will be reclassified for water compatible development only in accordance with the Flood Risk Management Guidelines.

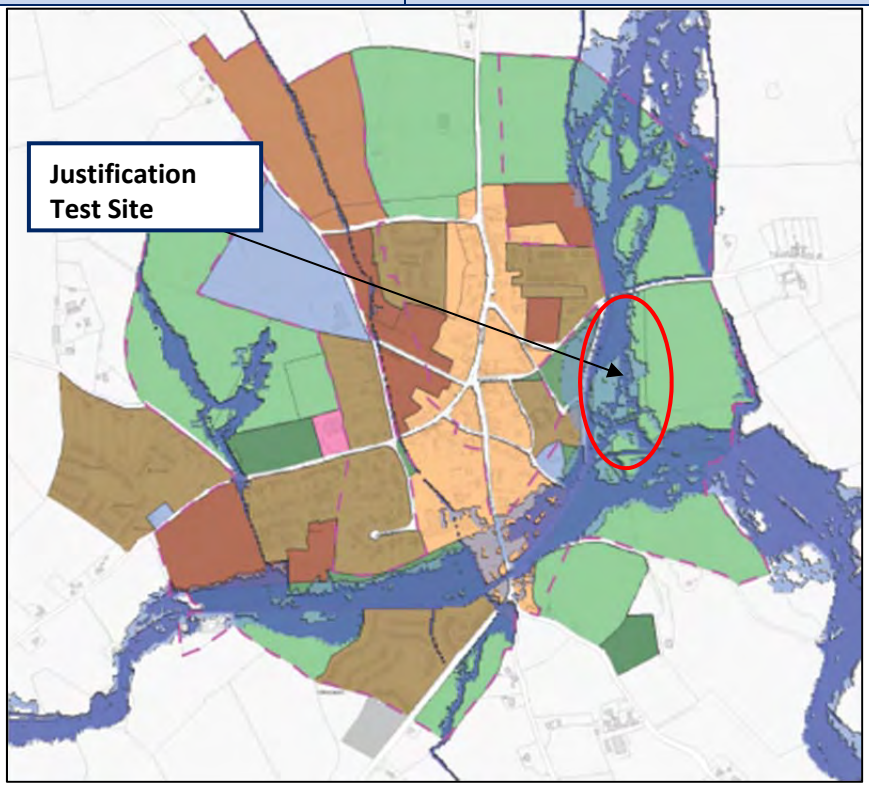
County Development Plan 2017-2023		B Zoning Allenwood
		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Allenwood was identified as a Village in the County Development Plan 2011-2017. It is proposed to remain a village in the Draft Kildare County Development Plan 2017-2023 Arising from the RPGs and the Draft Kildare County Development Plan 2017-2023, the County's 11 designated villages are to accommodate 1,184 new residential units during the period between 2011 and 2023. Allenwood is to continue as a local service centre with growth levels to cater for local needs. Allenwood shall also foster local enterprise that supports it sustainable development.
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 subject sites are zoned B Existing Residential / Infill. This zoning seeks to protect and improve existing residential amenity and to provide for appropriate infill residential development and to provide for new and improved ancillary services. A tributary of the River Slate is adjacent to the lands site and it flows in a southerly direction. The lands were zoned in the Allenwood Village Plan as part of the Kildare County Development Plan 2011-2017.

	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the developed nature of the lands adjacent to the town centre comprising of residential properties, the zoning of the site is considered appropriate to facilitate the orderly expansion of this area of the town.
	(ii) Comprises significant previously developed and / or underutilized lands;	Yes - The land is largely developed.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Yes - The lands are located adjacent to the established core area of the village.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	Yes - The proposed zoning is considered necessary to facilitate appropriate residential expansion in the town.
	(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 proposed use subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	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. Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures. Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use 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.

County Development Plan 2017-2023		BNE 1 and BNE 2 Zoning Blessington (Environs)
		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS). Blessington is designated as a Moderate Sustainable Growth Town in the current Regional Planning Guidelines. Blessington is designated as a Moderate Growth Town in the Wicklow County Development Plan 2010-2016. The western environs lands are located in Kildare County Council jurisdiction and are zoned in Volume 2 (Land Use Plans) in the Draft Kildare County Development Plan 2017-2023. Arising from the RPGs and the Draft Kildare County Development Plan 2017-2023, a growth target of 320 units is prescribed for the Blessington Environs area between 2011 and 2023.
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 subject site is predominantly zoned 'C' New Residential/Infill, the section of the lands which is already occupied by housing is zoned 'B' Existing Residential/Infill. These zonings provide for residential development and ancillary services. The site is in 2 parcels of (a) 14ha and (b) 12ha approximately 20% is located inside the flood zone. A larger residential development has been completed in between the two parcels of land mentioned above this section is zoned 'B' Existing Residential/Infill. The 'B' zoned lands are the subject of this justification test. O8/783 is a refused residential planning application on site (b). Site (a) has not been the subject of a planning application

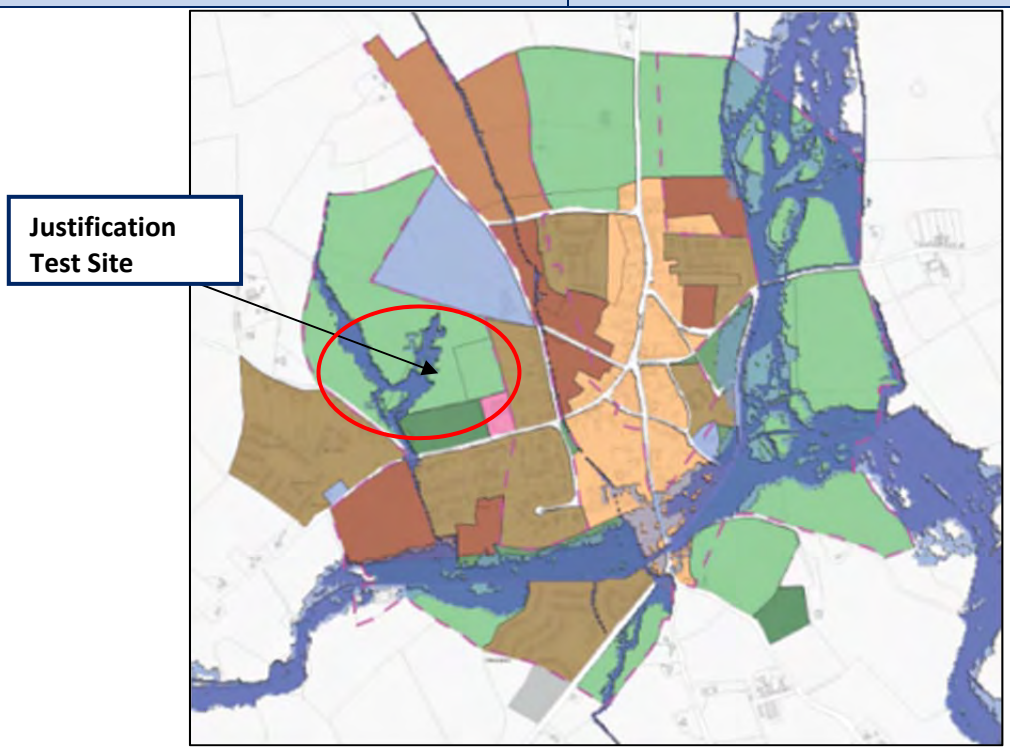
		To the south, north and east of the sites are existing residential developments with agricultural lands to the west of the site; resulting in the site being on the western edge of Blessington town. The zoning of the subject lands is a natural sequential expansion of the built up area of Blessington.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Water courses flow through each of parcels (a) and (b) and they merge and flow along the south eastern boundary of the site. The flood zone also appears to impact upon the section of the lands already developed for residential purposes. There are enough lands zoned for residential development outside the flood zone to facilitate the sustainable development of the town in line with the Core Strategy
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands do not comprise previously developed lands. The land appears to be in use for agricultural purposes apart from the BNE 2 lands which already facilitate a residential development.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Whilst the lands do not directly form part of the central core area of Blessington, they do directly adjoin the established built up area of the town and represent a natural sequential expansion of the town in its western environs with existing residential development having already being built at 'Blessington Manor'.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The site is located at the western environs of the town and given the availability of other lands within the town centre and adjoining it, together with other permissions outside of the ones subject to significant flooding it is not considered essential for compact and sustainable urban growth.
	(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 is already a significant quantity of suitably zoned land that is not at risk of flooding at various locations in Blessington and in other areas of County Kildare. These lands will facilitate the appropriate sustainable development in line with the proposed Settlement Strategy of the Kildare County Development Plan 2017-2023. A large section of the site is impacted upon by the flood zone and therefore is unsuitable for certain sensitive uses. Along with residential an objective to provide a school on the site has been proposed. Prior to any development being permitted on this site a site specific flood risk assessment will have to be carried out to the satisfaction of Kildare County Council. The recommendations of this assessment will determine the location, type and quantum of development on this site.
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: (i) Development incorporating lands located within 75m of the banks (or culverted sections) of the watercourse which flows in a southerly direction through the subject area; (ii) lands zoned C and B adjacent to watercourses

	with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment	Site Specific FRAs should address the following: Apply sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible. Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event.

County Development Plan 2017-2023		C Zoning Castledermot
		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS). Castledermot is designated as a Small Town. Castledermot was identified as a Small town in the County Development Plan 2011-2017. It is proposed to retain this settlement designation in the Draft Kildare County Development Plan 2017-2023 Arising from the RPGs and the Draft Kildare County Development Plan 2017-2023, a growth target of 160 housing units is allocated for Castledermot between 2011 and 2023.

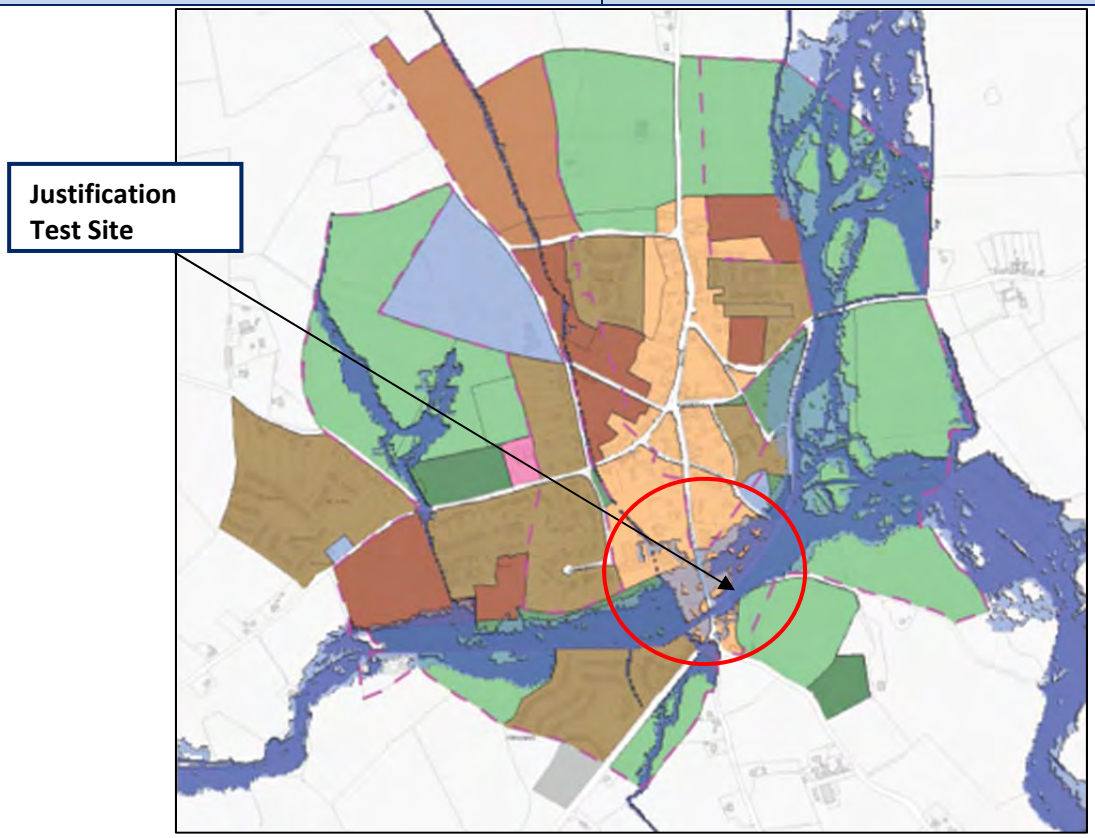
		Castledermot is also designated as a local employment centre in the County Development Plan where the retention of existing enterprises and the promotion of new local employment opportunities will be encouraged.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	The subject site is zoned C2 New Residential phase 2 in the current Kildare CDP 2011-2017. This zoning provides for residential development and ancillary services. The site is 3.2ha and approximately 2.8ha is located inside the flood zone. The River Lerr is directly adjacent to the western boundary of the site; further to the west is the fair green. The rest of the site is surrounded by agricultural lands. This site was zoned in the Castledermot Local Area Plan 2009 and Variation No 1 of the 2011-2017 also zoned the site for residential purposes.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The subject site is located in close proximity to the River Lerr and is identified as being at risk of flooding. The site has never been the subject of a planning application. The site is zoned C2 New Residential phase 2 in the current Kildare CDP 2011-2017. There are enough lands zoned for Residential Development in Castledermot that could accommodate the residential unit targets which are sufficient to facilitate the town's growth targets over the life time of this plan.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands do not comprise previously developed lands. The land appears to be in use for agricultural purposes.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is not located within or adjoining the core. The site is significantly removed from the edge of the settlement of Castledermot, in an area characterised by agricultural uses.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The site is located at the eastern edge of the town and given the availability of other lands within the town centre and adjoining it, together with other permissions outside of the ones subject to significant flooding it is not considered essential for compact and sustainable urban growth.
	(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 is already enough suitably zoned land that is not at risk of flooding at various locations in Castledermot. These lands will facilitate the appropriate sustainable development of Castledermot in line with the proposed Settlement Strategy of the Kildare County Development Plan 2017-2023. Therefore it is considered appropriate to rezone this site to agricultural.
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	The SFRA notes that the subject lands have **failed to pass** the Justification Test and that the proposed land-use will be reclassified for water compatible development only in accordance with the Flood Risk Management Guidelines.

	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	

County Development Plan 2017-2023		T2 Zoning Castledermot
		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS). Castledermot is designated as a Small Town. Castledermot was identified as a Small town in the County Development Plan 2011-2017. It is proposed to retain this settlement designation in the Draft County Development Plan 2017-2023 Arising from the RPGs and the Draft County Development Plan 2017-2023, a growth target of 160 housing units is allocated for Castledermot between 2011 and 2023. Castledermot is also designated as a local employment centre in the County Development Plan where the retention of existing enterprises and the promotion of new local employment opportunities will be encouraged.
2	The zoning or designation of the lands for the particular use or development type is required	The subject site is zoned T2 General Development phase 2 in the current Kildare County Development Plan 2011-2017.

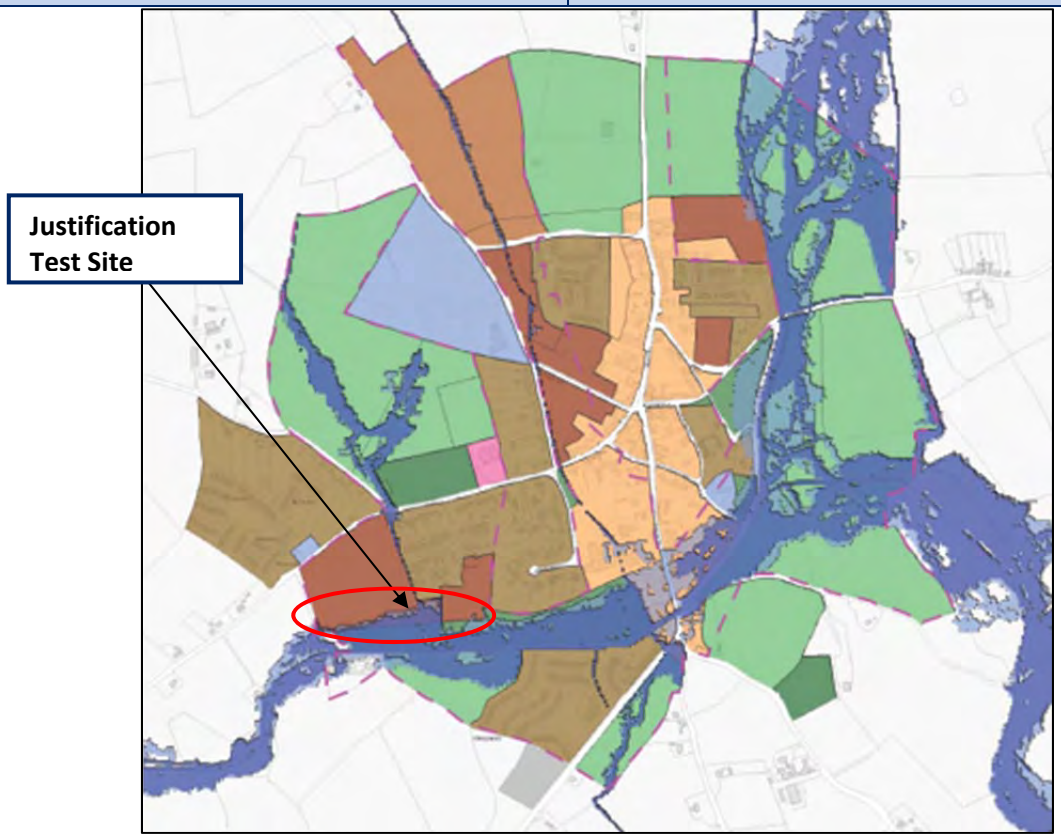
	to achieve the proper planning and sustainable development of the urban settlement and in particular:	This zoning provides for a wide range of uses including office, leisure, residential, retail and light industrial/employment use. The site is 8.3ha and approximately 1.47.ha is located inside the flood zone. A water course flows through the western portion of the site to the River Lerr to the south. There is an industrial building on the eastern side of the site and the Castledermot GAA club is located to the west and south of the site. This site was zoned in the Castledermot Local Area Plan 2009 and Variation No 1 of the 2011-2017 also zoned the site for General Development purposes.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The subject site is located to the north of the River Lerr, a tributary of that river flows along the western boundary of the site. The majority of the site has never been the subject of a planning application, the industrial building on the eastern end of the site has been extended with a planning application but this building is outside the flood zone. The site is zoned T2 General Development phase 2 in the current Kildare CDP 2011-2017. There are enough lands zoned for New Residential use in Castledermot that could accommodate residential units which is sufficient to facilitate the town's growth targets over the life time of this plan.
	(ii) Comprises significant previously developed and / or underutilized lands;	The majority of the lands appear to be in amenity uses as Castledermot GAA club and a section of the site is in industrial use with the remainder in agricultural use.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is located on the western edge of Castledermot, in an area characterised by low density residential development and agricultural uses.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The site is located at the edge of the town and given the availability of other lands within the town centre and adjoining it, together with other permissions outside of the ones subject to significant flooding it is not considered essential for compact and sustainable urban growth. However due to the current amenity and industrial uses and the amount of uses the land use zoning category could facilitate it is proposed to retain the zoning.
	(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 is already enough suitably zoned land that is not at risk of flooding at various locations in Castledermot to facilitate residential development. This site will facilitate the sustainable development of the town in terms of amenity and industrial development. Therefore it is considered appropriate to retain the zoning whilst ensuring that no development takes place within the flood zone.
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	The SFRA notes that the subject lands have **failed to pass** the Justification Test and that the proposed land-use will be reclassified for water compatible development only in accordance with the Flood Risk Management Guidelines. Development proposals for the sites lands shall be the

	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	subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible.

County Development Plan 2017-2023	A Zoning Castledermot	
		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS). Castledermot is designated as a Small Town. Castledermot was identified as a Small town in the County Development Plan 2011-2017. It is proposed to retain this settlement designation in the Proposed County Development Plan 2017-2023 Arising from the RPGs and the Draft County Development Plan 2017-2023, a growth target of 160 housing units is allocated for Castledermot between 2011 and 2023.

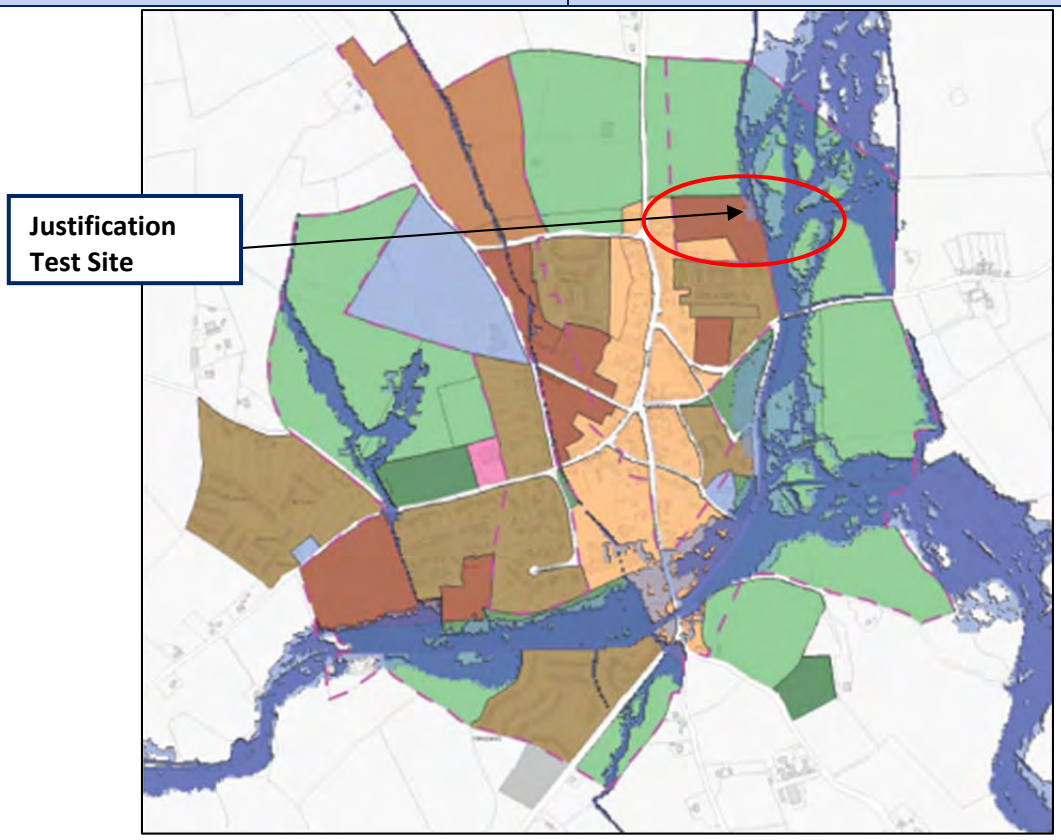
		Castledermot is also designated as a local employment centre in the County Development Plan where the retention of existing enterprises and the promotion of new local employment opportunities will be encouraged.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	The subject site is zoned A Town Centre in the current Kildare CDP 2011-2017. This zoning provides for the development and improvement of appropriate town centre uses including retail, commercial, office and civic use. The total area of the site is 9.69ha and 3.847ha of the site is within the flooding zone. The River Lerr runs through the centre of the site, the Main Street / Carlow Road crosses the river at Doyle's Bridge. To the north of the site there are more town centre lands, to the west there are some undeveloped General Development zoned lands and the Abbeylands housing development, to the south and west there are agricultural zoned lands. This site was zoned in the Castledermot Local Area Plan 2009 and Variation No 1 of the 2011-2017.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the developed nature of the site in the town centre comprising of residential properties and commercial premises, the zoning of the site is considered appropriate to facilitate the regeneration of this area of the town.
	(ii) Comprises significant previously developed and / or underutilized lands;	The site is largely developed
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is located in the centre of Castledermot in the core area of the town.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zoning is considered necessary to facilitate expansion of Commercial / Employment / Town Centre opportunities in the town.
	(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 site it is considered reasonable to retain the proposed use/zoning objective subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	Development proposals for the lands in the town centre shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed. Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures.

		Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use 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.

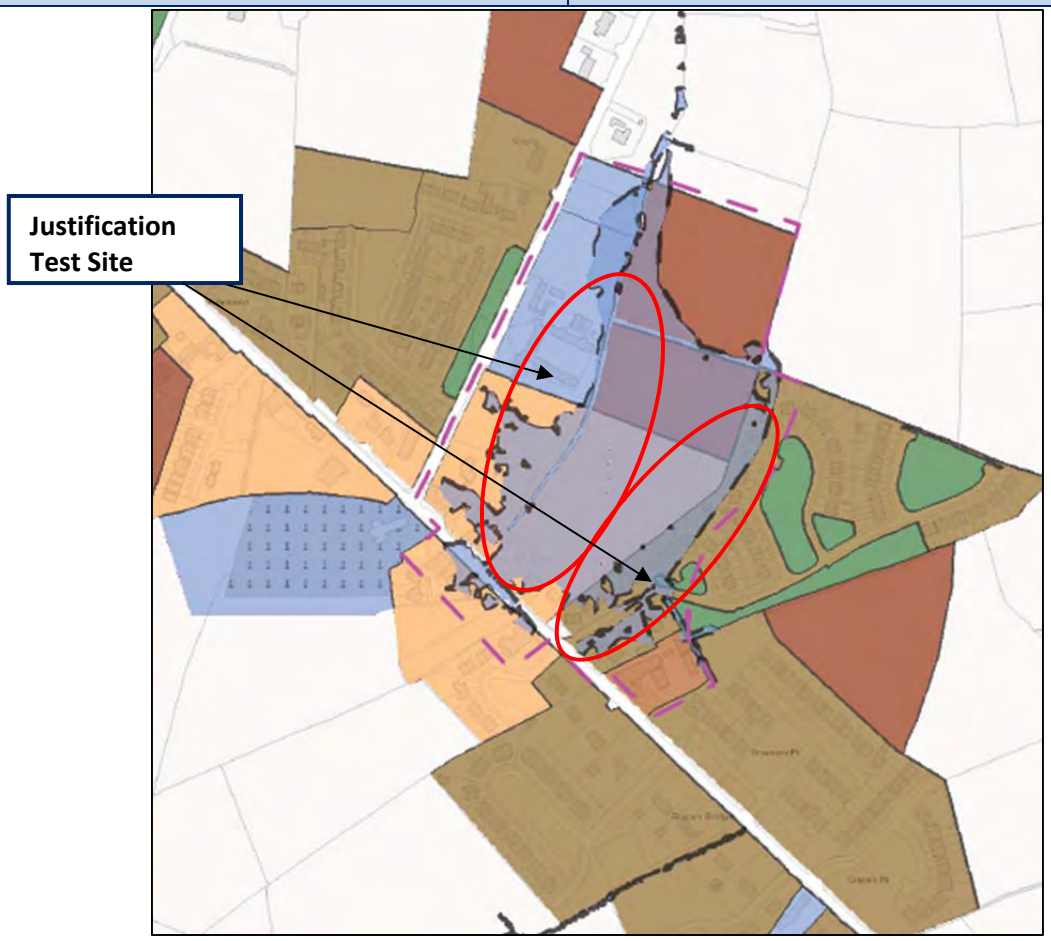
County Development Plan 2017-2023		T2 Zoning Castledermot
		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS). Castledermot is designated as a Small Town. Castledermot was identified as a Small town in the County Development Plan 2011-2017. It is proposed to retain this settlement designation in the Draft Kildare County Development Plan 2017-2023 Arising from the RPGs and the Draft County Development

		Plan 2017-2023, a growth target of 160 housing units is allocated for Castledermot between 2011 and 2023. Castledermot is also designated as a local employment centre in the County Development Plan where the retention of existing enterprises and the promotion of new local employment opportunities will be encouraged.
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 subject site is zoned T General Development in the current Kildare CDP 2011-2017. This zoning provides for a wide range of uses including commercial, retail, residential, community and amenity etc. The total area of the site is 5.2ha and 0.7ha of the site is within the flooding zone. The River Lerr runs along the south of the site, with a local road along the northern boundary, William Pearce Terrace to the east of the site and agricultural lands to the west of the site. This site was zoned in the Castledermot Local Area Plan 2009 and Variation No 1 of the 2011-2017 also zoned the site for General Development purposes.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the location of the site on the edge of the built up area with good access to roads and services it is considered that the proposed zoning is appropriate.
	(ii) Comprises significant previously developed and / or underutilized lands;	The site is undeveloped but there is permission for 83 residential units.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is located on the edge of the built up area and in close proximity to other residential areas.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zoning is considered necessary to facilitate appropriate residential expansion in the town. The site is located on the edge of the settlement in close proximity to an existing built up area.
	(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 suitable lands available for development at locations in the town which are not at risk of flooding and a portion of this site is in that category. Any development proposal for the site will be required to carry out a site specific flood risk assessment which may require the area possibly affected by flooding to be limited to water compatible uses.
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible. Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a

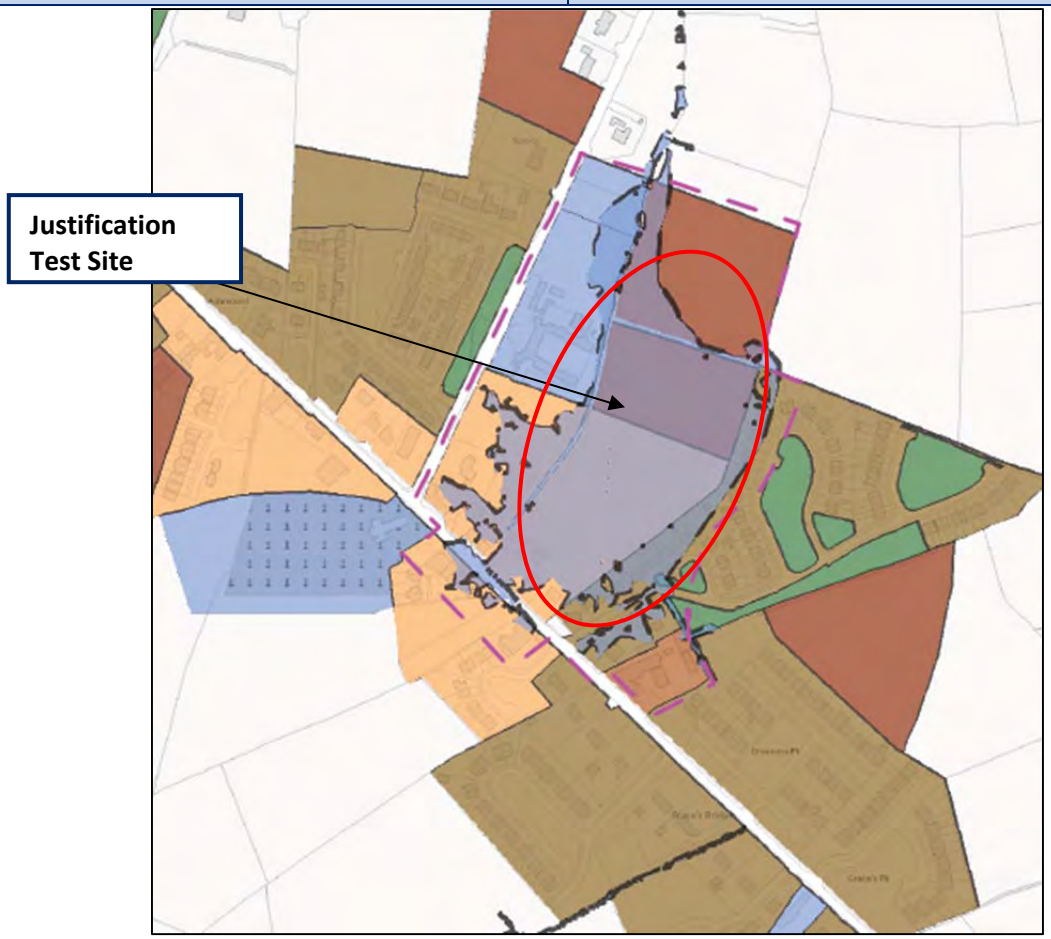
		level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event.

County Development Plan 2017-2023		T2 Zoning Castledermot
		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS). Castledermot is designated as a Small Town. Castledermot was identified as a Small town in the County Development Plan 2011-2017. It is proposed to retain this settlement designation in the Draft County Development Plan 2017-2023 Arising from the RPGs and the Draft Kildare County Development Plan 2017-2023, a growth target of 160 housing units is allocated for Castledermot between 2011 and 2023. Castledermot is also designated as a local employment centre in the County Development Plan where the retention of existing enterprises and the promotion of new local employment opportunities will be encouraged.
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	The subject site is zoned T General Development in the current Kildare County Development Plan 2011-2017. This zoning provides for a wide range of uses including commercial, retail, residential, community and amenity etc.

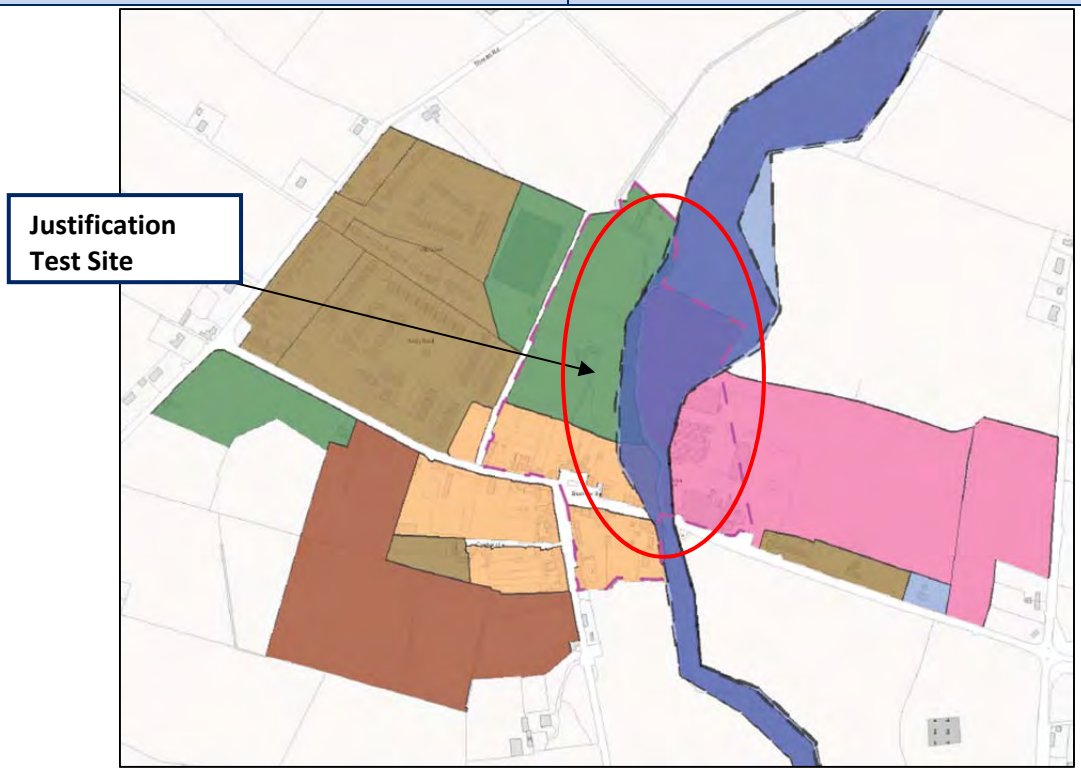
	particular:	The total area of the site is 2.26ha and 0.1ha of the site is within the flooding zone. The River Lerr runs along the east of the site, with existing development to the west, St. Johns Estate to the south of the site and agricultural lands to the north of the site. This site was zoned in the Castledermot Local Area Plan 2009 and Variation No 1 of the 2011-2017 also zoned the site for General Development purposes.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the location of the site on the edge of the built up area with good access to roads and services it is considered that the proposed zoning is appropriate.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands do not comprise previously developed lands.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is located on the edge of the built up area and in close proximity to other residential areas.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zoning is considered necessary to facilitate appropriate sequentially based residential expansion in the town. The site is located on the edge of the settlement close to an existing built up area.
	(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 suitable lands available for development at locations in the town which are not at risk of flooding and a portion of this site is in that category. Any development proposal for the site will be required to carry out a site specific flood risk assessment which may require the area possibly affected by flooding to be limited to water compatible uses.
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible. Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event.

County Development Plan 2017-2023		A, B and E Zonings Derrinturn
		
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.	Derrinturn is categorised as a Small Town in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current Kildare CDP 2011-2017. Small Towns are to develop as key local centres for services with levels of growth to cater for local need at an appropriate scale and to support local enterprise and cater for local demand.
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 subject lands are zoned A - Town Centre, B - Existing Residential and E – Community. The zoning provides for a wide range of uses including commercial, retail, residential, community and amenity etc. The total area of the lands is 6.917ha and 2.682ha of the lands fall within the Flood zone B. The River Ballyshannon flows from the north to connect to the surface water pipe network of the town which drains south easterly and connects to the downstream section of the Ballyshannon River. The flooding in the school grounds is largely confined to the open green area but in the other areas residential and commercial properties are at flood risk. The lands were zoned in the 2011-2017 County Development Plan.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban	Having regard to the developed nature of the site in the town centre comprising of residential properties and commercial premises, along with the infill nature of the

	settlement;	subject lands in close proximity to the historical core area of the town, the zoning of the site is considered appropriate to facilitate the orderly expansion of this area of the town.
	(ii) Comprises significant previously developed and / or underutilized lands;	Yes - The lands are largely developed.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Yes - The lands are located in the centre of the town.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	Yes - The proposed zoning is considered necessary to facilitate expansion of Commercial / Employment / Town Centre opportunities in the town.
	(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 site it is considered reasonable to retain the proposed use subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures. Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use 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.

County Development Plan 2017-2023		A Zoning Derrinturn
		
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.	Derrinturn is categorised as a Small Town in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current Kildare CDP 2011-2017. Small Towns are to develop as key local centres for services with levels of growth to cater for local need at an appropriate scale and to support local enterprise and cater for local demand.
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 subject lands are zoned A - Town Centre in the current Kildare CDP 2011-2017. The zoning provides for a wide range of uses including commercial, retail, residential, community and amenity etc. The total area of the lands is 4.691 ha and 3.411ha of the lands fall within the Flood zone B. The River Ballyshannon flows along the western boundary of the site to connect to the surface water pipe network of the town which drains south easterly and connects to the downstream. The Newbury Park estate is located to the east and the town centre is immediately to the south west. The subject lands are proposed to be zoned for a mixture of A – Town Centre and C – New Residential in the Draft Kildare County Development Plan 2017 – 2023.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the location of the site adjacent to the built up area with good access to roads and services it is considered that the proposed zoning is appropriate.
	(ii) Comprises significant previously developed	The lands do not comprise previously developed lands

	and / or underutilized lands;	
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is located adjacent to the built up area and in close proximity to other residential areas.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zoning is considered necessary to facilitate the orderly expansion of Commercial / Employment / Town Centre opportunities in the town in addition to providing for new housing provision in a sequential manner in line with a compact and sustainable growth model.
	(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 site it is considered reasonable to retain the proposed use subject to the stipulation that the areas of the site inside the flood risk zone are not developed until an upgrade of the existing Derrinturn Surface Water and Drainage Infrastructure is upgraded.
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	Development of the site should not include any vulnerable land uses until an upgrade of the Derrinturn Surface Water Scheme is completed. The Flood Zone B extent 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 on the site. Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures.

County Development Plan 2017-2023		Q and A Zonings Ballitore
		
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.	Ballitore is categorised as a Village in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current Kildare CDP 2011-2017. Villages will continue to develop as local centres for services with growth levels to cater for local need at an appropriate scale. Villages will also support local enterprise that supports their sustainable growth.
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 subject lands are zoned A - Village Centre and Q-Enterprise / Employment. These zonings provides for a wide range of uses including commercial, retail, residential, community, amenity etc. The total area of the lands is 13.12ha and 2.193 ha of the lands are within the flooding zone. The River Greese runs through the centre of the subject lands, with existing development to the west and east of the river. The lands were zoned in 2011-2017 County Development Plan.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the developed nature of the lands in the village centre comprising of residential properties and commercial premises. The zoning of the site is considered appropriate to facilitate the expansion of this area of the town.
	(ii) Comprises significant previously developed and / or underutilized lands;	Yes - The lands are largely developed
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Yes - The lands are located in the core area of the village centre and are existing developed areas.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	Yes - The proposed zoning is considered necessary to facilitate appropriate residential / commercial expansion in

		village.
	(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 proposed use subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	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. Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures. Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use 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.

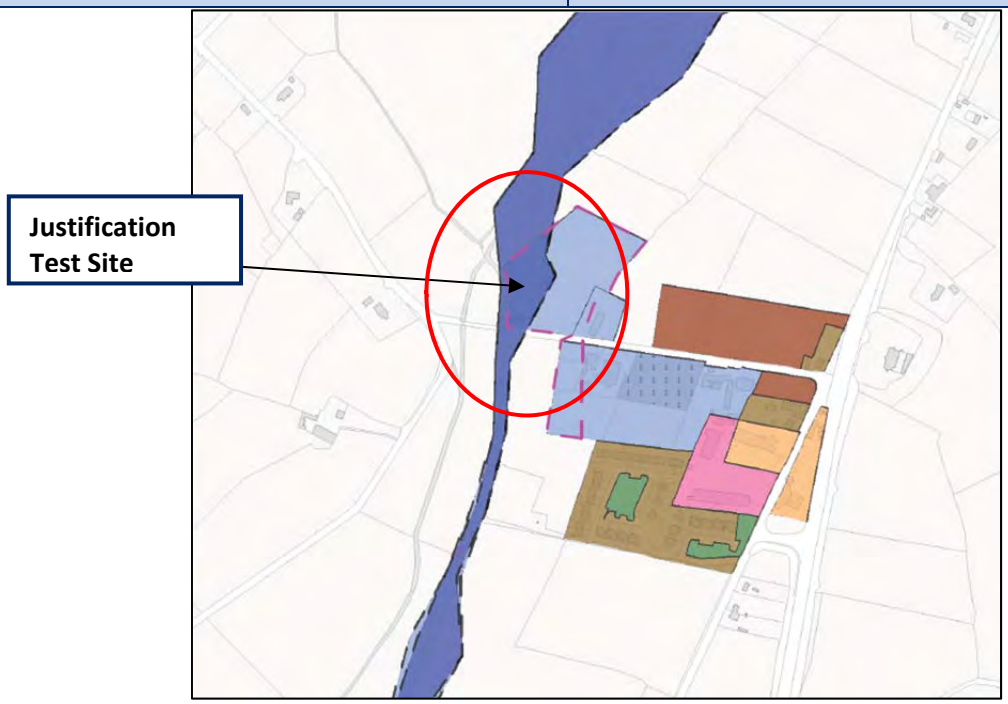
County Development Plan 2017-2023		C Zoning Prosperous
		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Prosperous is categorised as a Small Town in the Settlement Strategy of the Draft Kildare County Development Plan 2017 – 2023 which is reflective of its status in the current Kildare CDP 2011-2017. Small Towns are to develop as key local centres for services with levels of growth to cater for local need at an appropriate scale and to support local enterprise and cater for local demand.
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 subject lands are zoned C for new residential the current Kildare County Development Plan 2011-2017. The lands are 3ha and approximately 0.5ha is located inside the flood zone. A water course flows along the eastern portion of the site joining the River Slate downstream There is an industrial building on the eastern side of the site and the Castledermot GAA club is located to the west and south of the site.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The subject site is located to the south of the River Slate, a tributary of that river flows along the eastern portion of the lands.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands do not comprise previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is located adjacent to the built up area and in close proximity to other residential areas.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	Yes - The proposed zoning is considered necessary to facilitate appropriate residential expansion in village.
	(v) There are no suitable alternative lands for	Having regard to the developed nature of the lands it is

	the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	considered reasonable to retain the proposed use subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible. Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event

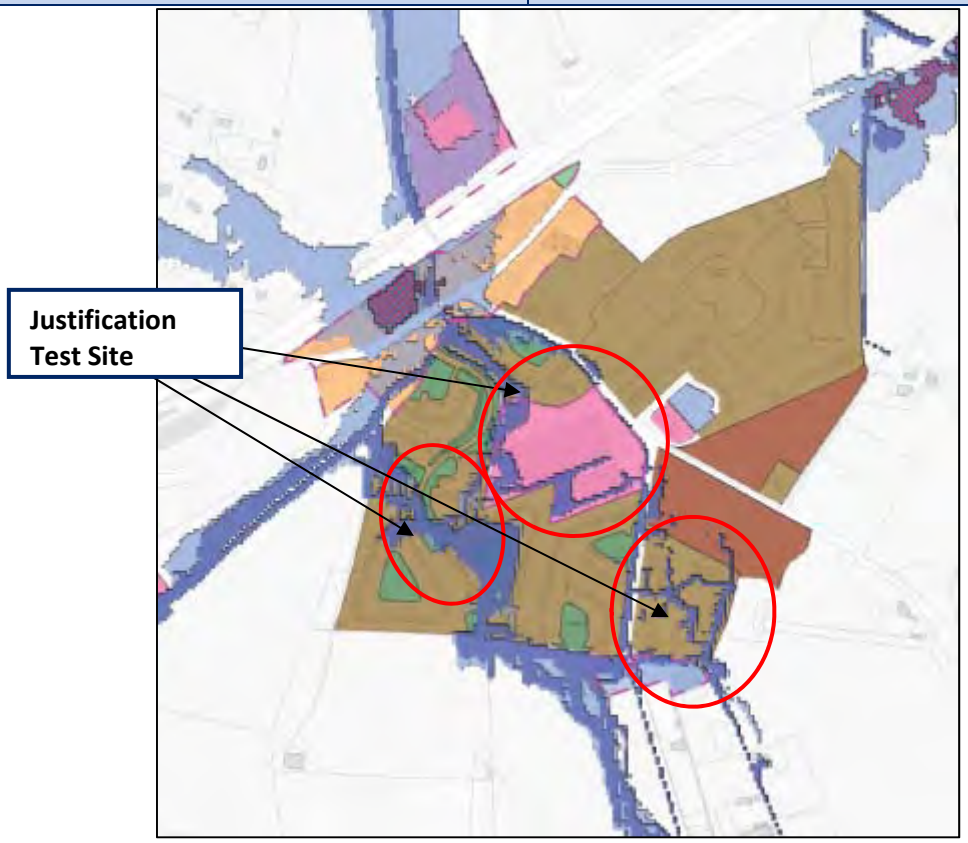
County Development Plan 2017-2023	B Zoning Caragh
	
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Caragh is categorised as a Village in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current Kildare CDP 2011-2017. Villages will continue to develop as local centres for services with growth levels to cater for local need at an appropriate scale. Villages will also support local enterprise that supports their sustainable growth.

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 subject lands are zoned B Existing Residential / Infill. This zoning seeks to protect and improve existing residential amenity and to provide for appropriate infill residential development and to provide for new and improved ancillary services. The lands are adjacent to the Awillyinish Stream flowing westerly towards the Liffey and its tributary flowing from the North merging on the upstream side of the railway line. The lands were zoned as part of the Kildare County Development Plan 2011-2017.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the developed nature of the lands adjacent to the village centre comprising of residential properties, the zoning of the lands are considered appropriate to facilitate the expansion of the village
	(ii) Comprises significant previously developed and / or underutilized lands;	Yes - The land is largely developed.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are located on the edge of town centre and are existing developed areas.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zoning is considered necessary to facilitate appropriate residential expansion in the village.
	(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 proposed use subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	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. Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures. Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use to demonstrate that they would not have adverse flood risk impacts. These proposals should follow best practice in the management of

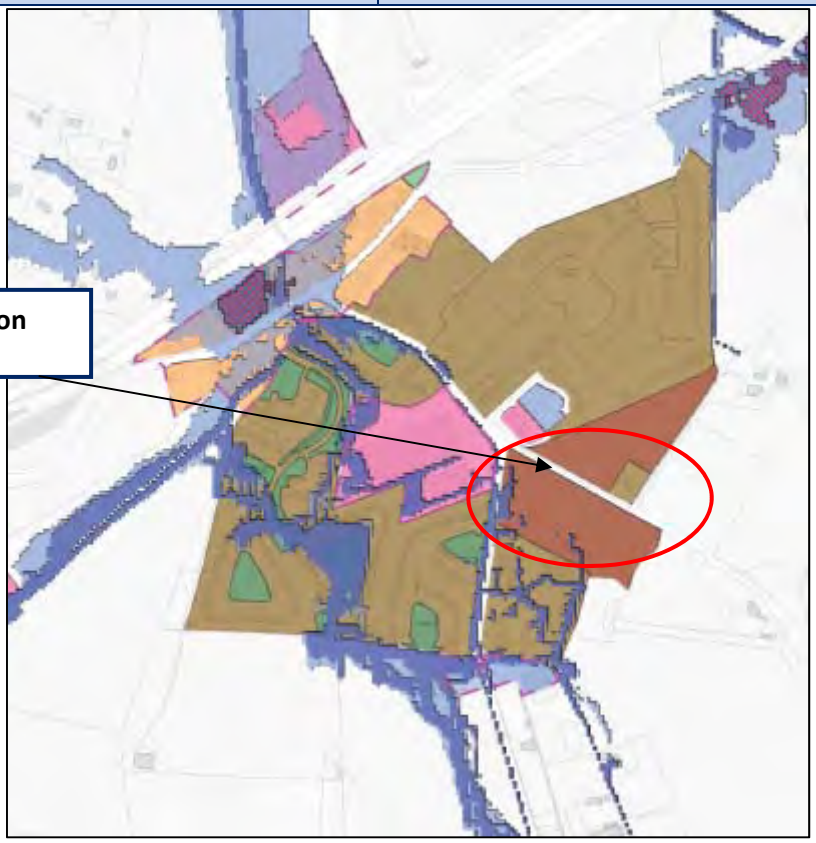
		health and safety for users and residents of the proposal. FRAs should consider placing bedrooms upstairs, sockets above the 1% AEP water level and other individual property protection measures e.g. flood doors, non-return valves. They must also ensure that modifications do not block significant flow paths or cause flood risk impacts to the surrounding areas.

County Development Plan 2017-2023		Q and A Zonings Crookstown
		
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.	Crookstown is categorised as a Village in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current Kildare CDP 2011-2017. Villages will continue to develop as local centres for services with growth levels to cater for local need at an appropriate scale. Villages will also support local enterprise that supports their sustainable growth.
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 subject lands are zoned E - Community & Education in the current Kildare County Development Plan 2011-2017. The total area of the lands is 2.02ha and 0.6 ha of the site is within the flooding zone. The River Greese runs through along the western boundary of subject lands. The subject site comprises the lands associated with an existing school. The lands were zoned in 2011-2017 County Development Plan.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The zoning of the site is considered appropriate to facilitate the development of community facilities for the village.
	(ii) Comprises significant previously developed and / or underutilized lands;	Yes - The lands are developed.

	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are located inside the northwest village boundary in close proximity to the village core area adjacent to existing development.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zoning is considered necessary to facilitate the development of community facilities for the town.
	(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 proposed use subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	The site has previously been subject to a FRA and been approved by Kildare County Council. The school has been developed with using the sequential approach and the development management Justification Test. 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. Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures.

County Development Plan 2017-2023		B and Q Zoning Johnstown
		
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.	Johnstown was identified as a Village in the County Development Plan 2011-2017. It is proposed to remain a village in the Draft Kildare County Development Plan 2017-2023 Arising from the RPGs and the Draft County Development Plan 2017-2023, the County's 11 designated villages are to accommodate 1,184 new residential units during the period between 2011 and 2123. Johnstown is to continue as a local service centre with growth levels to cater for local needs. Johnstown shall also foster local enterprise that supports it sustainable development.
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 subject lands are zoned B Existing Residential and Infill and Q Industrial / Commercial. The lands have been developed for residential development and the houses are occupied, the extent of the flood zone is mainly focussed on areas of open space and the roads but does have some impact on neighbouring houses. The flood zone in the commercial area is largely confined to the hardstanding area to the west of the site. The Morrell river flows to the west of the lands with tributaries of the Morrell flowing adjacent to the lands.

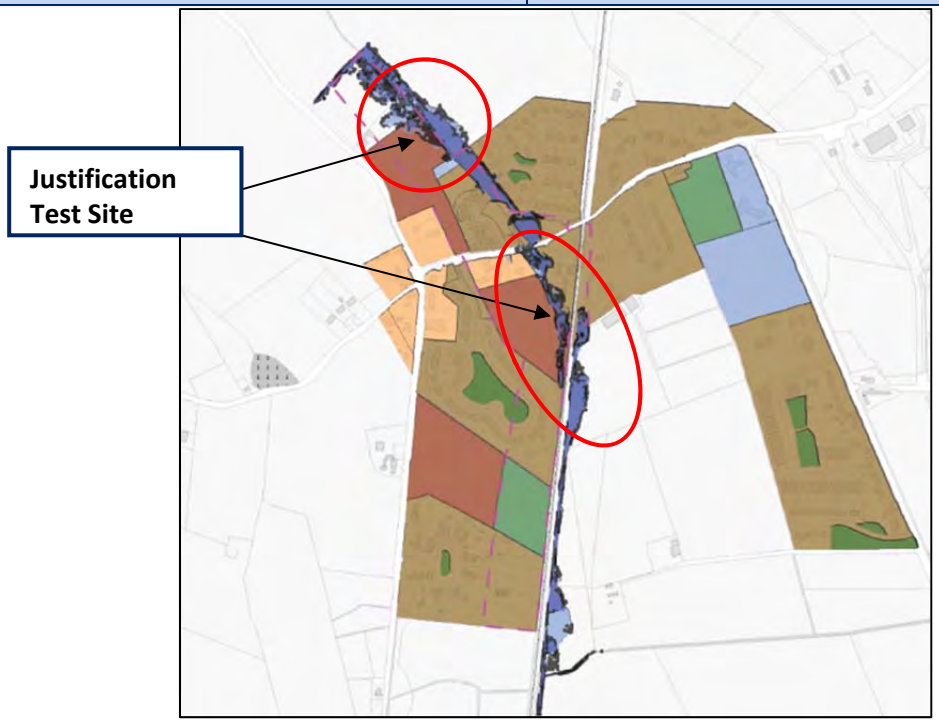
		These lands were zoned in the Johnstown Village Plan as part of the Kildare County Development Plan 2011-2017.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The subject lands are located in close proximity to the Morell river and are identified as being at risk of flooding. The lands have been fully built out.
	(ii) Comprises significant previously developed and / or underutilized lands;	Yes - The lands are built out for residential and commercial development.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Yes - The lands are contiguous to the village centre and appropriate for development based on a sequential test.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	Yes - The lands are essential in order to achieve a compact village form and sustainable urban growth.
	(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 site has been developed and any further development in Johnstown has been identified at a location not at risk of flooding. The development of this land constituted the appropriate sustainable development of Johnstown and the zoning shall remain.
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	The existing land use zonings at risk of flooding will be retained but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures. Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use 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.

County Development Plan 2017-2023		C Zoning Johnstown
		
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.	Johnstown was identified as a Village in the County Development Plan 2011-2017. It is proposed to remain a village in the Draft Kildare County Development Plan 2017-2023 Arising from the RPGs and the Draft County Development Plan 2017-2023, the County's 11 designated villages are to accommodate 1,184 new residential units during the period between 2011 and 2123. Johnstown is to continue as a local service centre with growth levels to cater for local needs. Johnstown shall also foster local enterprise that supports it sustainable development.
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 subject site is zoned C New Residential. The total area of the site is 2.35ha and 0.1ha of the site is within the flooding zone. A Tributary of the River Morrell runs along the west of the site, with existing development to the south of the site. These lands were zoned in the Johnstown Village Plan as part of the Kildare County Development Plan 2011-2017.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the location of the site in close proximity to the built up area with good access to roads and services it is considered that the proposed zoning is appropriate.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands do not comprise previously developed lands

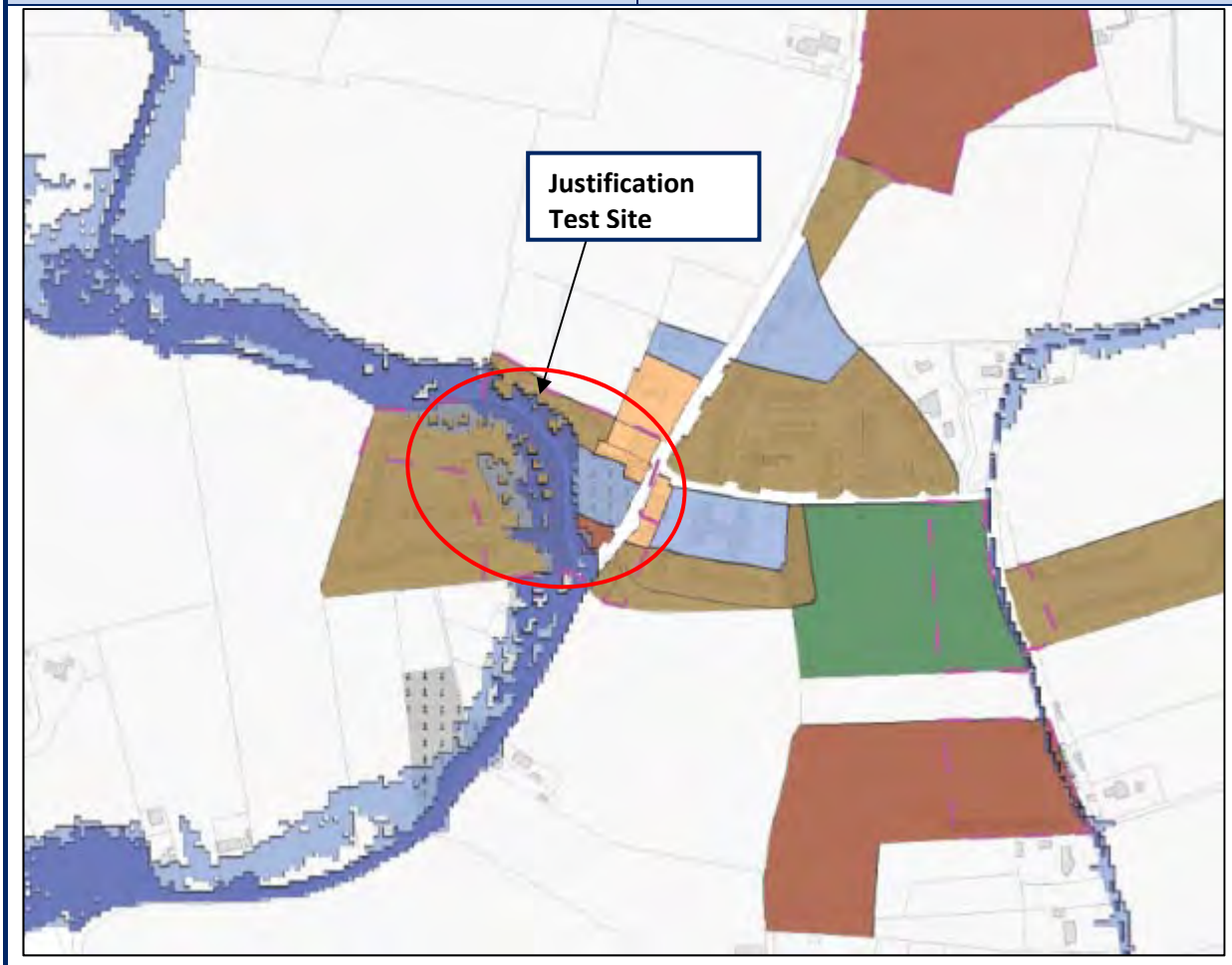
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The site is located in close proximity to the built up area and to other residential areas.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zoning is considered necessary to facilitate appropriate residential expansion in the town. The site is located to the southeast of the settlement close to an existing built up area.
	(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 suitable lands available for development at locations in the town which are not at risk of flooding and a portion of this site is in that category. Any development proposal for the site will be required to carry out a site specific flood risk assessment which may require the area possibly affected by flooding to be limited to water compatible uses
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible. Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event.

County Development Plan 2017-2023		B Zoning - Johnstownbridge
		
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.	Johnstownbridge was identified as a Village in the County Development Plan 2011-2017. It is proposed remain a village in the Draft Kildare County Development Plan 2017-2023 Arising from the RPGs and the Draft County Development Plan 2017-2023, the County's 11 designated villages are to accommodate 1,184 new residential units during the period between 2011 and 2123. Johnstownbridge is to continue as a local service centre with growth levels to cater for local needs. Johnstownbridge shall also foster local enterprise that supports it sustainable development.
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 subject lands are zoned B Existing Residential and Infill. This zoning seeks to protect and improve residential amenity whilst also providing opportunities for appropriate infill residential development. The lands have been developed for residential development and the houses are occupied, the extent of the flood zone is mainly focussed on the southern sections of the existing housing developments. The Fear English river runs to the south east of the village, it forms the southern boundary of The Glebe housing development and flows through the Dunfierth Park housing development. The River Blackwater runs to the north of Dunfierth Park.

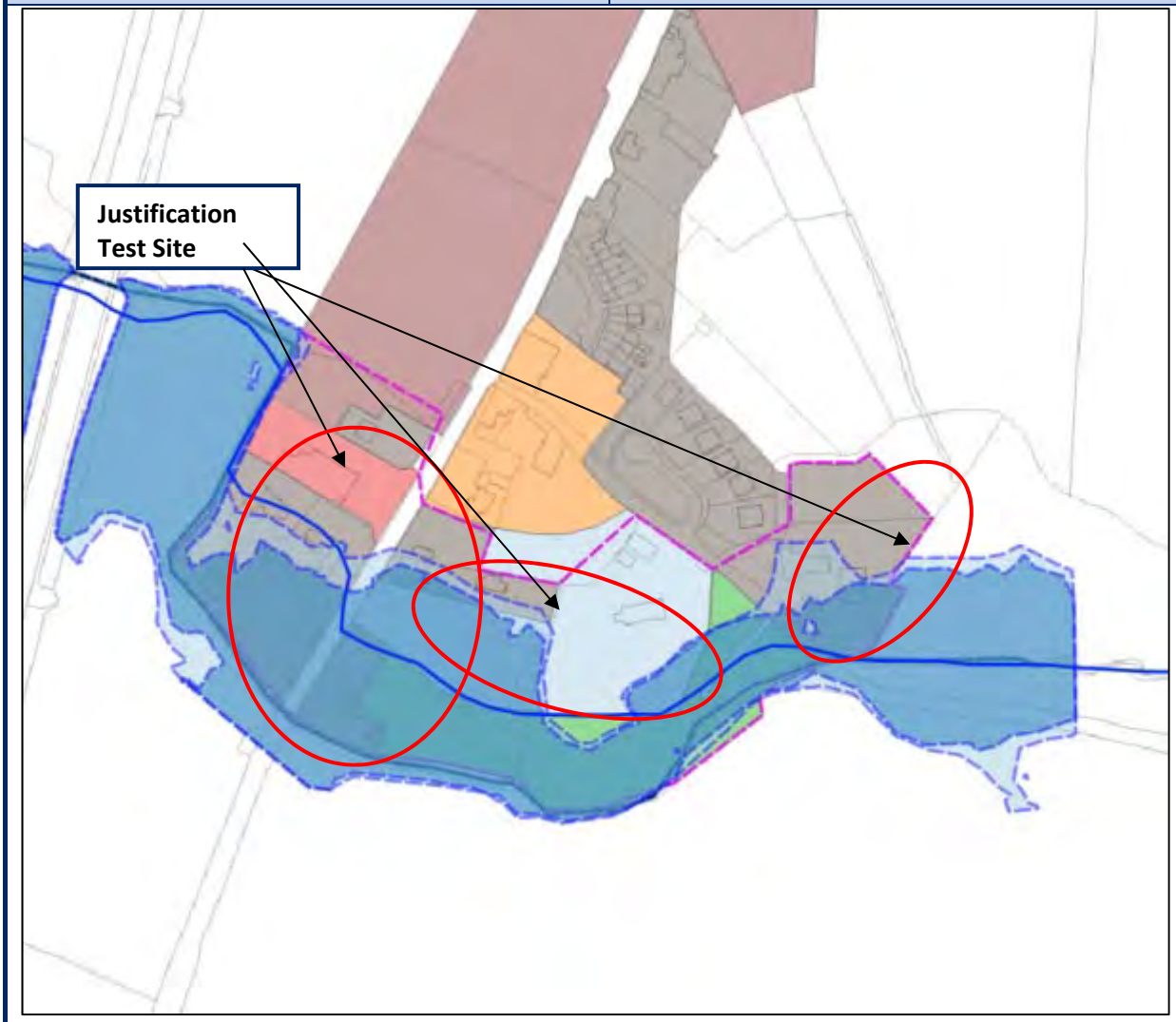
		These sites were zoned in the Johnstownbridge Village Plan as part of the Kildare County Development Plan 2011-2017.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The subject developments are located in close proximity to the Fear English river and are identified as being at risk of flooding. The sites have been fully built out.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands are built out for residential development.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are close to the village centre and appropriate for residential development.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The sites are essential in order to achieve sustainable urban growth.
	(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 site has been developed and any further development in Johnstownbridge has been identified at a location not at risk of flooding. The development of this land constituted the appropriate sustainable development of Johnstownbridge and the zoning shall remain.
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	The existing land zones at risk of flooding will be retained but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures. Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use 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.

County Development Plan 2017-2023		C, A and E Zonings Kildangan
		
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.	Kildangan is categorised as a Village in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current CDP 2011-2017. Villages will continue to develop as local centres for services with growth levels to cater for local need at an appropriate scale. Villages will also support local enterprise that supports their sustainable growth.
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 subject lands are zoned C New Residential, A Village Centre and E Community. These zonings provides for a wide range of uses including commercial, retail, residential, community and amenity etc. The River runs along the western boundary of the subject lands. The lands were zoned in 2011-2017 County Development Plan. To the south, west and east of the sites are existing residential developments.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Yes - Having regard to the location of the lands on the edge of the built up area and in the village centre with good access to roads and services it is considered that the proposed zonings are appropriate.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands do not comprise previously developed lands.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are located within or adjoining the core and in close proximity to other residential areas.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zonings are considered necessary to facilitate appropriate residential expansion in the town. The lands are

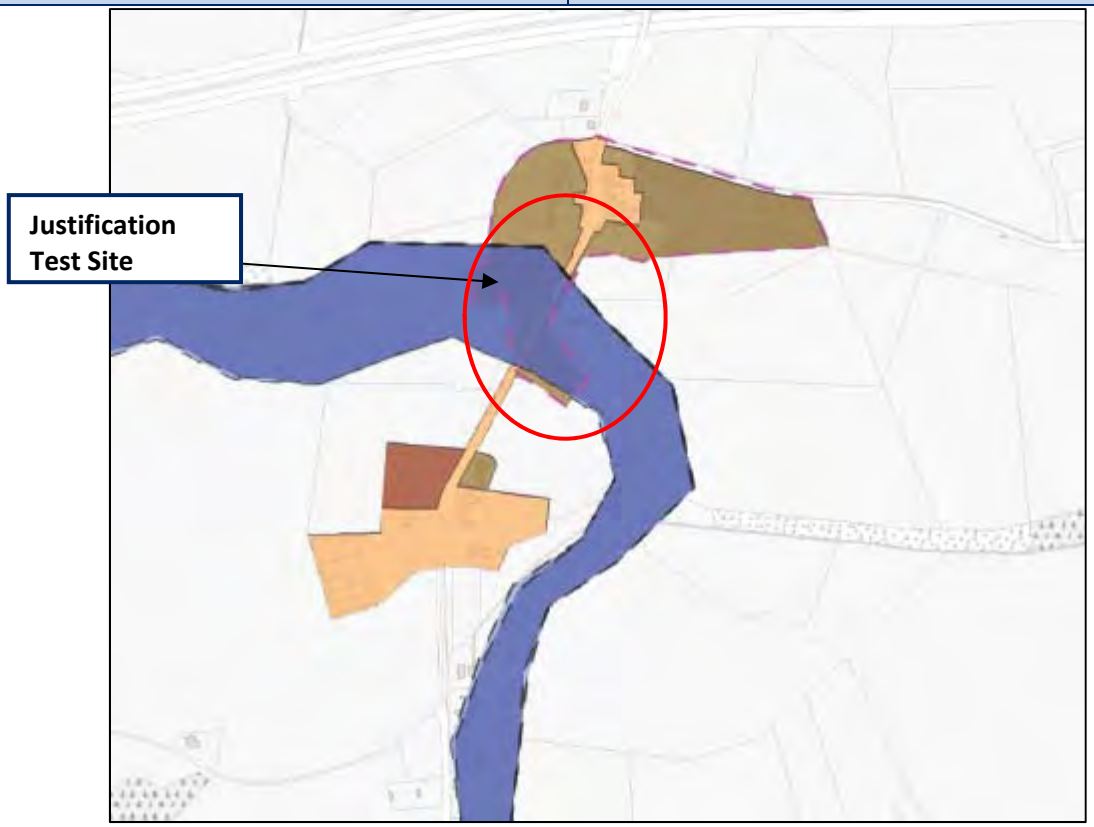
		located close to an existing built up area.
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	There are suitable lands available for development at locations in the town which are not at risk of flooding and a portion of this site is in that category. Any development proposal for the site will be required to carry out a site specific flood risk assessment which may require the area possibly affected by flooding to be limited to water compatible uses
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible. Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event.

County Development Plan 2017-2023		B Zoning - Suncroft
		
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.	Suncroft was identified as a Village in the County Development Plan 2011-2017. It is proposed remain a village in the Draft Kildare County Development Plan 2017-2023 Arising from the RPGs and the Draft County Development Plan 2017-2023, the County's 11 designated villages are to accommodate 1,184 new residential units during the period between 2011 and 2123. Suncroft is to continue as a local service centre with growth levels to cater for local needs. Suncroft shall also foster local enterprise that supports its sustainable development.
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 subject lands are zoned B Existing Residential and Infill. This zoning seeks to protect and improve residential amenity whilst also providing opportunities for appropriate infill residential development. The lands have been developed for residential development and the houses are occupied, the extent of the flood zone is mainly focussed on the houses on the northern section of the Prussellstown Green Housing Development. A tributary of the Finnery river appears to be culverted in the

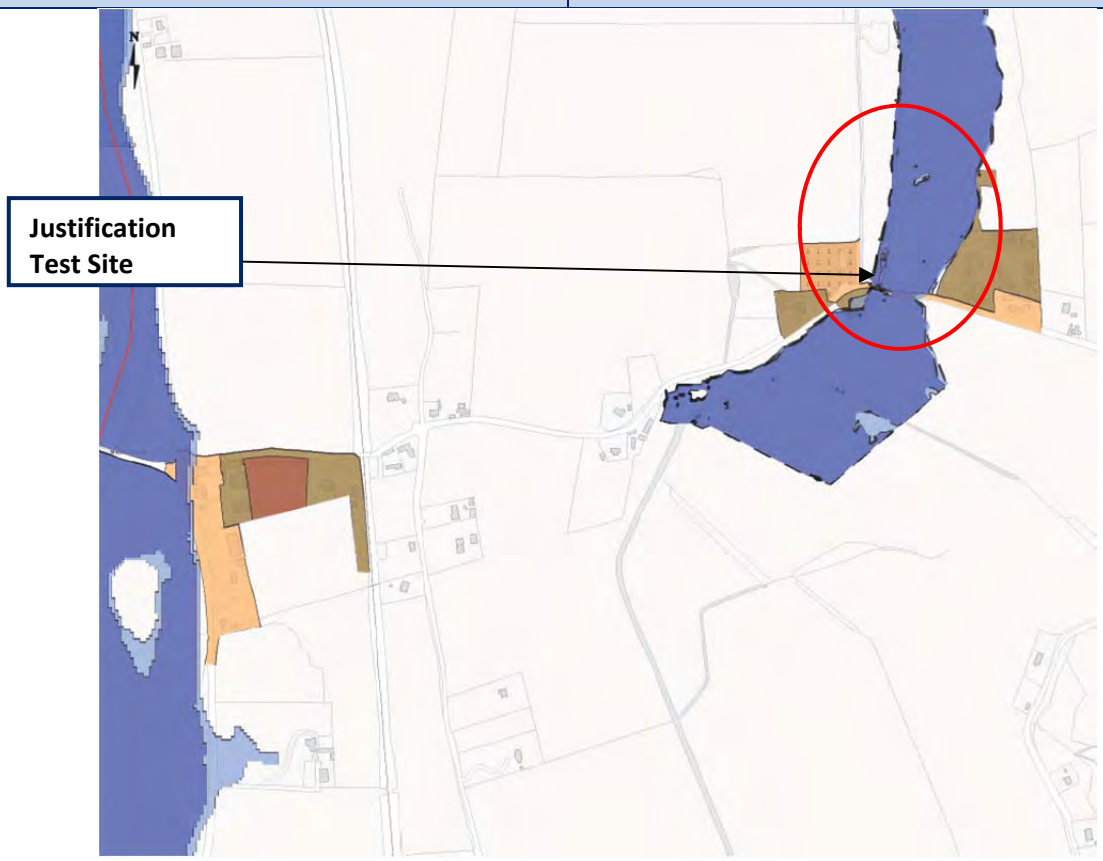
		northern section of the development. This site was zoned in the Suncroft Village Plan as part of the Kildare County Development Plan 2011-2017.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The northern section of the subject site has been identified as being at risk of flooding. The site has been fully built out.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands are built out for residential development.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are contiguous to the village centre and appropriate for residential development based on a sequential test.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The site is essential in order to achieve a compact village form and sustainable urban growth.
	(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 site has been developed and any further development in Suncroft has been identified at a location not at risk of flooding. The development of this land constituted the appropriate sustainable development of Suncroft and the zoning shall remain.
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	The existing land zones at risk of flooding will be retained but any development shall be subject to a site-specific FRA. No new development or inappropriate zonings are proposed for flood risk areas. Development proposals for the following lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: (i) development incorporating lands located within 50m of a recorded flood event (as shown on OPW flood maps); (ii) development incorporating lands located within 100m of the banks (or culverted sections) of the watercourse which flows along Eascanrath Lane (L70721); (iii) development incorporating lands located within 50m of the banks (or culverted sections) of the watercourse which passes through lands zoned B at the south western boundary of the village plan. (iv) Lands zoned C or E. Site specific FRAs should address climate change scenarios in relation to FFLs and potential mitigation measures on the western side of the town.

County Development Plan 2017-2023		B and E Zonings Timolin
		
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.	Suncroft is categorised as a Village in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current CDP 2011-2017. Villages will continue to develop as local centres for services with growth levels to cater for local need at an appropriate scale. Villages will also support local enterprise that supports their sustainable growth.
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 subject lands are zoned B - Existing Residential and E – Community. The zoning provides for a wide range of uses including residential, community, amenity etc. The total area of the lands is 4ha and 2.95ha of the lands fall within the Flood Zones. The Bothoge River is a tributary of the River Greese and flows westerly through the village. The flooding is largely confined to the open green area but there are a few residential and community properties are at flood risk. The lands were zoned in the 2011-2017 County Development Plan.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the developed nature of the site in the town centre comprising of residential properties and community premises. The zoning of the site is considered appropriate to facilitate development of this area of the

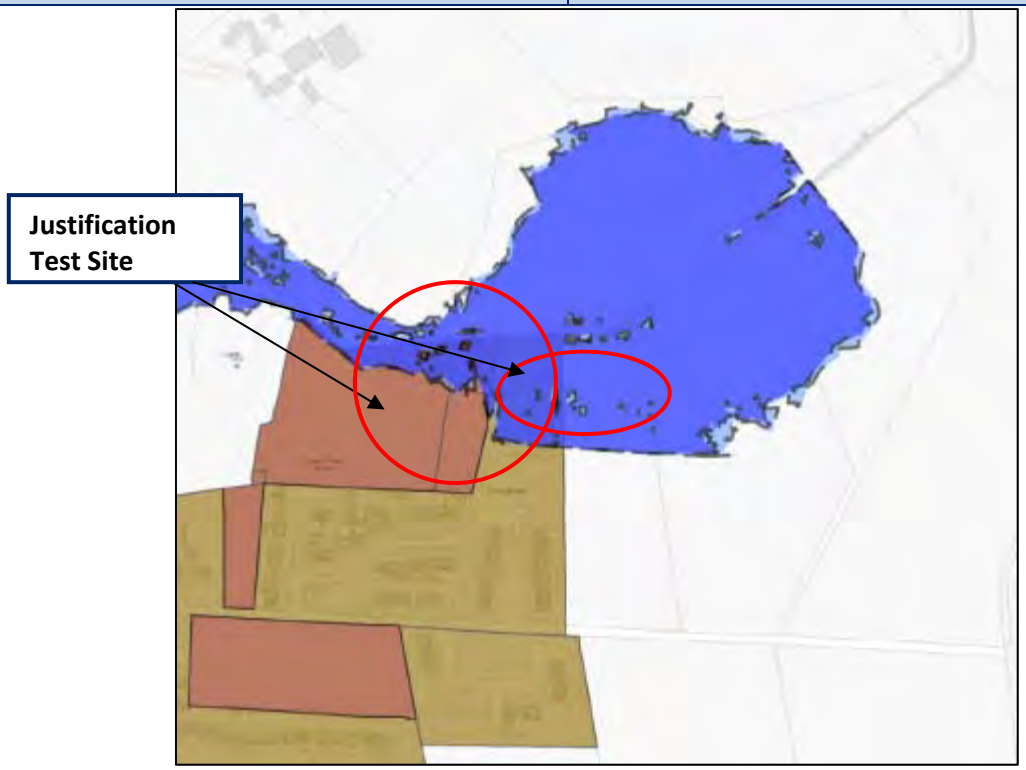
		village.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands are largely developed.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are located within and adjoining the village centre.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The lands are essential in order to achieve a compact village form and sustainable urban growth.
	(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 site it is considered reasonable to retain the proposed use subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures. Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use 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.

County Development Plan 2017-2023		B Zonings Broadford
		
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.	Broadford is categorised as a 'Rural Settlement' in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current CDP 2011-2017. Rural Settlements will continue to develop as local centres for rural catchments with growth appropriate for local demand. Expansion will be controlled to minimise pressure on services, the environment and unsustainable commuting patterns.
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 subject lands are located inside the rural settlement boundary of Broadford and on land identified as 'Existing Settlement'. The River Glash runs through the lands with flood risk on both banks. The flood risk is confined to 4 four existing properties. The lands were identified within the settlement boundary of the 2011-2017 County Development Plan.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the developed nature of the lands comprising of residential properties. The inclusion of the lands within the settlement boundary area is considered appropriate to facilitate development of this area.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands contain existing residential properties and their associated lands
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are located close to the core area of this rural settlement adjacent to existing development.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The lands are essential in order to achieve a compact settlement form and sustainable urban growth.

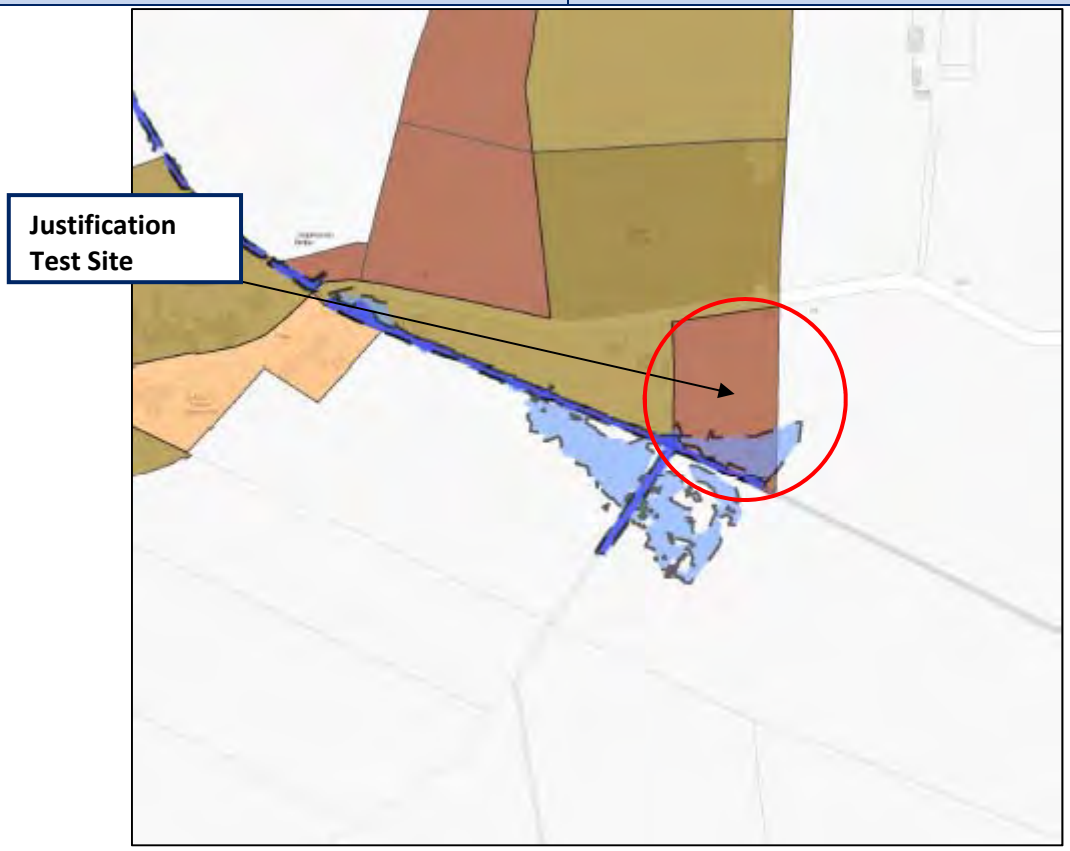
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Having regard to the developed nature of the lands it is considered reasonable to retain the proposed use subject to the stipulation that the areas of the site inside the flood risk zone include measures to mitigate against flooding
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Should address climate change scenarios in relation to FFLs and potential mitigation measures. Existing development should carry out a flood risk assessment of appropriate detail to accompany applications for minor alterations or changes of use 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.to FFLs and potential mitigation measures.

County Development Plan 2017-2023		C Zonings Levitstown
		
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.	Maganey / Levitstown is categorised as a 'Rural Settlement' in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current CDP 2011-2017. Rural Settlements will continue to develop as local centres for rural catchments with growth appropriate for local demand. Expansion will be controlled to minimise pressure on services, the environment and unsustainable commuting patterns.
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 subject lands have been identified for 'Settlement Expansion' in the current Kildare County Development Plan 2011-2017. The River Greese runs along the eastern boundary of the site. The flood extent inundates almost the entirety of the site. The lands were zoned in 2011-2017 County Development Plan.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	The site is presently identified for 'Settlement Expansion' in the current Kildare County Development Plan 2011-2017. There are enough settlement expansion lands identified in Levitstown that could accommodate residential units which to facilitate growth targets over the life time of this plan.
	(ii) Comprises significant previously developed and / or underutilized lands;	The land appears to be in use for agricultural purposes.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are located at the north-eastern end of the settlement centre adjacent to existing development.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The site is located in close proximity to the settlement centre but there are a number of undeveloped suitable sites also in close proximity to the settlement centre that do not

		have the same flooding risks that could accommodate development. Given the availability of other lands within this rural settlement and adjoining it, it is not considered essential for compact and sustainable urban growth.
	(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 is sufficient identified land in this rural settlement that is not at risk of flooding at various locations.. These lands will facilitate the appropriate sustainable development of the settlement in line with the Draft Settlement Strategy of the Kildare County Development Plan 2017-2023. Therefore it is considered appropriate to remove this subject site from the 'Settlement Expansion' area of this rural settlement given the identified flood risk associated with same and other more suitable sites, with no identified flood risk, being available for development.
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	The SFRA notes that the subject lands have **failed to pass** the Justification Test and that the proposed land-use will be reclassified for water compatible development only in accordance with the Flood Risk Management Guidelines.

County Development Plan 2017-2023		C and J Zonings Nurney
		
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.	Nurney is categorised as a 'Rural Settlement' in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current CDP 2011-2017. Rural Settlements will continue to develop as local centres for rural catchments with growth appropriate for local demand. Expansion will be controlled to minimise pressure on services, the environment and unsustainable commuting patterns.
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 subject lands are identified as 'Existing Settlement' (existing Wastewater Treatment Works site) and 'Settlement Expansion' lands in the rural settlement map for this centre in both the Draft Kildare County Development Plan 2017-2023, and the current Kildare CDP 2011-2017. The Tully Stream runs along the northern boundary of the lands. To the south of the lands are existing residential developments.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the location of the lands on the northern edge of the built up area with good access to roads and services it is considered that the proposed designations are appropriate.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands do not comprise previously developed lands.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are close to the settlement centre and appropriate for residential development.
	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed zonings are considered necessary to facilitate appropriate residential expansion and maintain existing drainage infrastructure in the settlement. The lands are

		located on the edge of the settlement close to an existing built up area.
	(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 suitable lands available for development at locations in the settlement which are not at risk of flooding and a portion of this site is in that category. Any development proposal for the site will be required to carry out a site specific flood risk assessment which may require the area possibly affected by flooding to be limited to water compatible uses
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible. Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event.

County Development Plan 2017-2023		C Zonings Staplestown
		
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.	Staplestown is categorised as a 'Rural Settlement' in the Settlement Strategy of the Draft Kildare County Development Plan 2017-2023 which is reflective of its status in the current CDP 2011-2017. Rural Settlements will continue to develop as local centres for rural catchments with growth appropriate for local demand. Expansion will be controlled to minimise pressure on services, the environment and unsustainable commuting patterns.
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 subject lands are identified for 'Settlement Expansion' in the Draft Kildare County Development Plan 2017-2023 and as 'Existing Settlement' in the current Kildare CDP 2011-2017. A tributary of the Clogheraun Stream runs along the southern boundary of the site. There are existing residential properties to the east and the local GAA ground directly opposite to the north.
	(i) Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement;	Having regard to the location of the lands on the eastern end of the built up area with good access to roads and services it is considered that the proposed designation remains appropriate.
	(ii) Comprises significant previously developed and / or underutilized lands;	The lands do not comprise previously developed lands.
	(iii) Is within or adjoining the core of an established or designated urban settlement;	The lands are close to the settlement centre and appropriate for residential development.

	(iv) Will be essential in achieving compact and sustainable urban growth; and	The proposed designation is considered necessary to facilitate appropriate residential expansion in the village. The lands are located on the edge of the settlement close to an existing built up area.
	(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 suitable lands available for development at locations in the settlement which are not at risk of flooding and a portion of this site is in that category. Any development proposal for the site will be required to carry out a site specific flood risk assessment which may require the area possibly affected by flooding to be limited to water compatible uses
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	Development proposals for the sites lands shall be the subject of a site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed: Site Specific FRAs should address the following: The sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain. Highly Vulnerable Development shall not be permitted in Flood Zone A or B. Development in Flood Zone A should only be water compatible. Compensatory storage may be considered provided there is no increased flood risk elsewhere. It must be provided on a level for level basis and the land given to storage must be land which does not flood in the 1% AEP flood event.