STRATEGIC FLOOD RISK ASSESSMENT

Draft Athy Local Area Plan 2021-2027

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1 INTRODUCTION

1.1 Background

Kildare County Council (KCC) has prepared a Draft Athy Local Area Plan (LAP) 2021 – 2027 in accordance with the requirements and provisions of the Planning and Development Act 2000, (as amended) (the "Act"). It sets out the overall future development strategy for the proper planning and sustainable development of Athy in the context of the Project Ireland 2040 – the National Planning Framework, Eastern & midland Regional Spatial and Economical Strategy (RSES), the Kildare County Development Plan 2017 – 2023 (as varied). It is informed by Ministerial Guidelines issued pursuant to Section 28 of the Act together with EU requirements regarding Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA). The LAP replaces the Athy Town Development Plan 2012 – 2018.

KCC commissioned RPS to carry out a Strategic Flood Risk Assessment (SFRA) to support and inform the preparation of the LAP. The SFRA is 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 SFRA therefore informs policy regarding inappropriate development in areas at risk of flooding and identifies areas where Site Specific Flood Risk Assessments (SSFRAs) should be undertaken for development.

1.2 Report Objectives

The objective of this report is to prepare a SFRA for the Draft Athy LAP in accordance with The Guidelines. The SFRA provides an assessment of all types of flood risk within the LAP boundary and has enabled KCC to make informed strategic land-use planning decisions and to 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 town that may warrant further investigation.

1.3 Disclaimer

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

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

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

KCC reserves the right to change the content and/or presentation of any of the information provided on the 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 Athy LAP area and its primary watercourses are identified in **Section 2**.

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

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

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

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

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

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

2 STUDY AREA

2.1 Introduction

The extents of the Athy LAP plan are shown in **Figure 2-1**. Athy is located in south-west County Kildare along the banks of the River Barrow. It is approximately 72km southwest from Dublin City Centre and situated south of the M7 motorway and east of the M9 motorway. The N78 motorway runs east-west through the centre of Athy. The population of the town in 2011 census was 9,587 with results for the 2016 census showing an increase to 10,793.

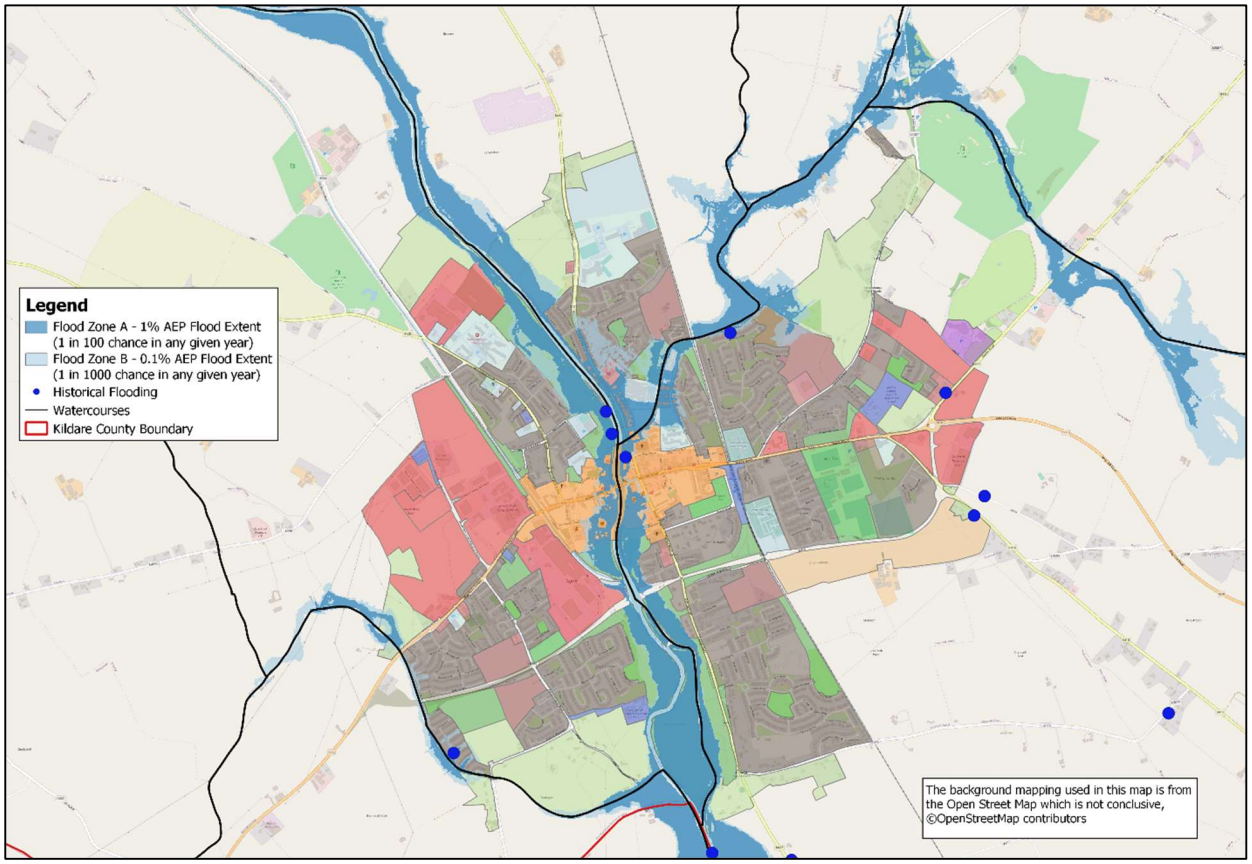


Figure 2-1 Athy LAP Boundary, Watercourses and Flood Risk Information

2.2 Watercourses

Athy sits on the banks of the River Barrow with a contributing catchment area upstream of Athy of approximately 1710 km^2. Several tributaries of the river flow through the LAP lands including the Moneen River, Bennets (Ballyadams) Stream and Clogorrow Bog River. The River Barrow confluences with the Barrow Line of the Grand Canal at Athy. From this point until St Mullins the Barrow becomes navigable, with 23 locks in place including a sea lock at St Mullins. The Grand Canal Barrow Line continues for a further 45km before connecting to the mainline of Grand Canal at Lowtown.

The Clogorrow River flows in a south west direction through Clogorrow and Sawyerswood towards Athy town centre. On its route it merges with the Foxhill stream near Dublin Road and the Doll Stream at Athy Golf Club to form the Moneen River. The Moneen has a catchment area of approximately 53km^2 and joins with the Barrow in Athy town centre. The Bennets (Ballyadams) Stream fliows in an easterly direction through Tonlegee and joins the Barrow at the to the South of Athy. The Ballyadams Stream has a catchment of approximately 35km^2. The River Barrow and Moreen River have historical problems of flooding. A significant number of both residential and non-residential properties are at risk, concentrated within Athy town centre. Several local roads and a regional road are also at risk along with a number of cultural heritage assets.

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

3.1 Introduction

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

The core objectives of the Guidelines are to:

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

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

3.2 Flood Risk Assessment

3.2.1 Flood Risk Assessment Approach

The Guidelines recommend that FRAs be carried out to identify the risk of flooding to land, property and people. FRAs should use the Source-Pathway-Receptor (S-P-R) Model to identify the sources of flooding, the flow paths of the floodwaters and the people and assets impacted by the flooding. **Figure 3-1** shows the SPR model that should be adopted in FRAs.

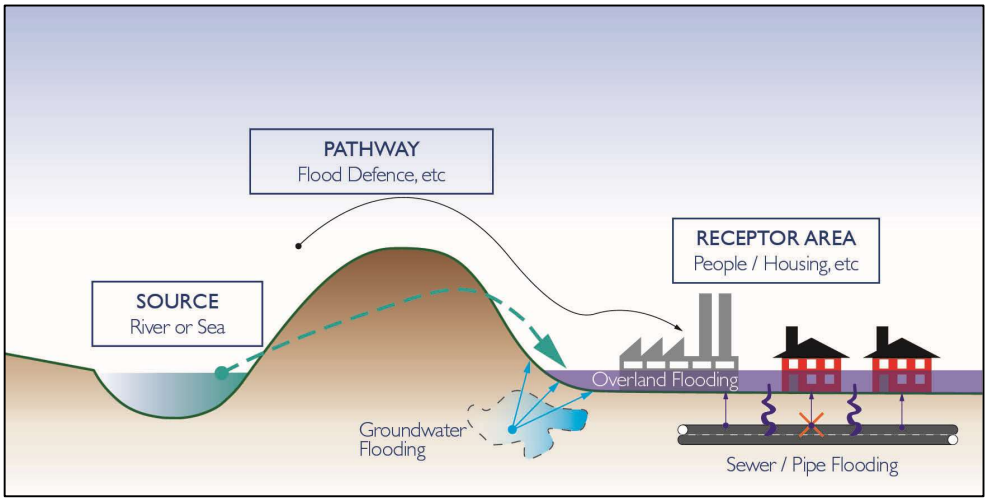


Figure 3-1 Flood Risk Assessment Source – Pathway – Receptor Model

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 the Athy area as the watercourses within Kildare County do not experience any tidal influence from the Irish Sea.

- 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. **Appendix A** shows the Flood Zone Map for the Athy LAP.

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 town scale for the Athy LAP. The Guidelines recommend a series of outputs for a SFRA. These outputs in broad terms include:

- Identify principal rivers, sources of flooding and produce flood zone maps for across the local authority area and in key development areas.
- An appraisal of the availability and adequacy of the existing information.
- Assess potential impacts of climate change to demonstrate the sensitivity of an area to increased flows or sea levels. Where mathematical models are not available climate change flood extents can be assessed by using the Flood Zone B outline as a surrogate for Flood Zone A with allowance for the possible impacts of climate change.
- Identify the location of any flood risk management infrastructure and the areas protected by it and the coverage of flood-warning systems.
- Consider, where additional development in Flood Zone A and B is planned within or adjacent to an existing community at risk, the implications of flood risk on critical infrastructure and services across a wider community-based area and how the emergency planning needs of existing and new development will be managed.
- Identify areas of natural floodplain, which could merit protection to maintain their flood risk management function as well as for reasons of amenity and biodiversity.
- Assess the current condition of flood-defence infrastructure and of likely future policy with regard to its maintenance and upgrade.
- Assess the probability and consequences of overtopping or failure of flood risk management infrastructure, including an appropriate allowance for climate change.
- Assess, in broad terms, the potential impact of additional development on flood risk elsewhere and how any loss of floodplain could be compensated for.
- Assess the risks to the proposed development and its occupants using a range of extreme flood or tidal events.
- Identify areas where 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. **Figure 3-2** shows the sequential approach. If the propsed land use cannot be avoided or substituted a Justification Test must be applied and appropriate sustainable flood risk management proposals should be incorporated into the development proposal. **Table 3-2** and **Table 3-3** outline recommendations from the Guidelines for the types of development that would be appropriate to each flood zone and those that would be required to meet Justification Test.

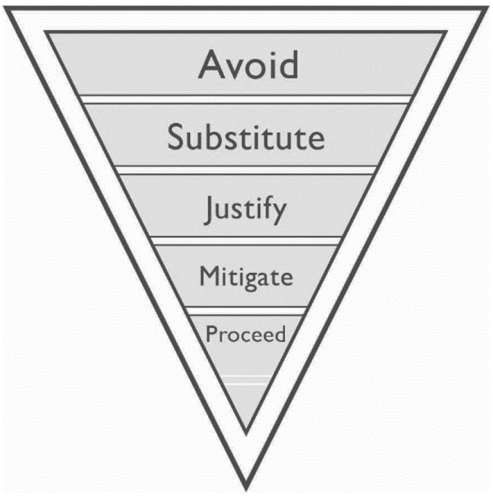


Figure 3-2 Sequential approach principles in Flood Risk Management

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

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

The Justification Test is used to assess the appropriateness of developments in flood risk areas. The test is comprised of two processes. The first is the Plan-making Justification Test and is used at the plan preparation and adoption stage where it is intended to zone or otherwise designate land which is at moderate or high risk of flooding. The second is the Development Management Justification Test and is used at the planning application stage where it is intended to develop land at moderate or high risk of flooding for uses or development vulnerable to flooding that would generally be inappropriate for that land.

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

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

*Uses not listed here should be considered on their own 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 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 Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan 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 core3 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;
- 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.

4 DEVELOPMENT MANAGEMENT AND FLOOD RISK

4.1 Overview

All development proposals regardless of which flood zone they are within should be supported be an appropriately detailed 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 appropraite 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 FRAs which should accompant 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

There is an obligation on KCC to ensure that permissions granted under the Planning Acts are consistent with the policies and objectives set out in their Development Plans. The Athy LAP outlines specifies policies and objectives of the Council with regard to developing Athy. The overarching policies and objectives of the Kildare County Development Plan (CDP) also apply, specifically the Development Management Standards as set out in Chapter 17. Where conflict exists between the LAP and the CDP, the CDP will take precedence. Chapter 17 of the CDP chapter focuses on the general planning standards and design criteria that will be applied by the council to ensure that future development is in accordance with these policies and objectives.

Chapter 17 of the CDP outlines the following to be considered for the management of surface water run-off and flood risk in the assessment of planning applications:

- All applications for development shall include proposals for restricting the rate of surface water run-off in accordance with the recommendations of the Greater Dublin Strategic Drainage Study (GDSDS),

- Developments shall incorporate Sustainable urban Drainage Systems (SuDS) as appropriate in accordance with the recommendations of the GDSDS.

- Proposals for development shall be subject to site specific flood risk assessment in accordance with Chapter 7 of the County Development Plan,

- Applicants shall have regard to the strategies, objectives and policies contained within Chapter 7 of the County Development Plan at all stages of their development proposals, as well as the requirements of The Planning System and Flood Risk Management – Guidelines for Planning Authorities, DEHLG (2009),

- Proposals for surface water attenuation systems should include maintenance proposals and procedures,

- Proposals to construct new and replacement culverts and bridges on watercourses shall be subject to the approval of the Office of Public Works, in accordance with Section 50 of the Arterial Drainage Act 1945 and the Planning System and Flood Risk Management Guidelines, DEHLG, (2009). These applications will be made to the Office of Public Works by the developer post receipt of planning permission. Approval shall be obtained prior to commencement of the works. The minimum permissible diameter of any culvert shall be 900mm with access to be provided for maintenance as appropriate,

- Peak flood flows used in the design of culvert sizes, channel sizes and flood alleviation works to be undertaken as part of a development shall be calculated in accordance with a method approved by the Office of Public Works,

- Applicants are required to conduct a flood impact assessment in accordance with The Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009) in all applications where a potential flood risk exists,

- All new developments shall be designed and constructed to meet the following minimum flood design standards:

  – For urban areas – the 1% AEP storm event + a 20% allowance for climate change

  – For rural areas - the 1% AEP storm event + a 20% allowance for climate change

- Where streams, open drains or other watercourses are being culverted, the minimum permissible culvert diameter is 900mm. Access should be provided for maintenance as appropriate, and

- The appropriate Office of Public Works approved method for assessing flood flows, which will depend on catchment size, shall be used in all designs. These flood flows will be used to generate channel sizes, culvert sizes and any required flood alleviation works, which will be undertaken by the developer prior to the commencement of any development

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.

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 such as culvert / bridge blockages and the effects of climate change which may expand the extents of Flood Zones A and B. These residual risk factors should inflence the potential mitigation measures for a site which could include setting the finished floor levels.

4.4 Development Propsals 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 a 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 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 Propsals 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 be 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.

4.4.6 Potential Flood Mitigation Measures

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

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

Compensatory Storage

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

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

Raised Defences

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

Ground Floor and Basement Protection

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

- Raised doorway and access threshold levels can be incorporated into areas susceptible to floodwaters pooling. Temporary door-guards can be implemented where it is not practical to have a permanent raised threshold. However, these will require advance warning for installation,
- Shallow ramping can be considered for doorway or vehicular access at ground level if it can be facilitated,
- Particular care should be taken at closed spaces where it proposed to restrict the movement of floodwaters as the rapid inundation could pose a threat to life as well as causing major disruption or damage, and
- Alarm systems are strongly recommended for properties with basements or semi-basements. Training of residents and building personnel in alarms and escape routes and escorting all visitors out of basement areas should be a requirement.

5 STAGE 1 – FLOOD RISK IDENTIFICATION

5.1 Overview

The purpose of this section is to establish the level of flood risk for the town of Athy and to collate and assess existing current and historical information and data which may indicate the level and/or extent of any flood risk. The following sections detail information and data collated as part of the Stage 1 Flood Risk Identification carried out for the study area.

5.2 Source-Pathway-Receptor Model

In the first instance, an identification and assessment of the probability, magnitude, response of pathways and consequences of a flood event in the proposed development site were appraised. This analysis was aimed at identifying high risk elements as summarised in **Table 5-1** below.

Table 5-1: Possible Flooding Mechanisms

Source	Pathway	Receptor	Likelihood (remote, possible, likely)	Consequences (low, medium, high)	Risk (low, medium, high)	Comment/ Reason
Tidal /Coastal	Increased river levels overtopping existing riverbanks	Town Centre and Suburbs	Remote	Low	Low	The study area is located inland and the River Barrow is not tidally influenced within the extents of the town.
Fluvial	Increased river levels overtopping riverbanks	Town Centre and Suburbs	Likely	High	High	The River Barrow and its tributaries located in the study area.
Pluvial	Overland Flow from Elevated Lands or Water logging	Town Centre and Suburbs	Possible	High	Medium	The surrounding topography slopes gently towards the river. Localised pluvial flooding could occur on some sites.
Groundwater	Rising Ground Water Level	Town Centre and Suburbs	Possible	High	Low	There are no records of ground water flooding in the area. The subsoil in the area has medium to high permeability so waterlogging potential is unlikely.

The primary source of flood risk to the town may be attributed to fluvial flooding from the Barrow River and its tributaries. Secondary risks may arise from pluvial and groundwater flooding.

5.3 Flood Risk & Flood Studies Information

Relevant information was reviewed and collated from the following sources:

- Kildare County Development Plan 2017 – 2023 and Strategic Flood Risk Assessment;
- Athy Local Area Plan 2012 - 2018 and Strategic Flood Risk Assessment;
- Flood Mapping, Hydrology & Hydraulic Reports from the CFRAMS at www.floodinfo.ie, refer to **section 5.5** below for further detail on the CFRAMS.
- Proposals for regional and local flood mitigations measures from the Flood Risk Management Plans (FRMP) for the River Barrow and Athy available at www.floodinfo.ie, refer to **section 5.5** below for further detail on the River Barrow FRMP.
- Groundwater Flooding Data from the Geological Survey of Ireland.

5.4 Flood History

A review of historical flood data was carried out using information provided on https://www.floodinfo.ie/ and in consultation with KCC. Consultation with the area engineer for Athy was also carried out as part of the SFRA to confirm sources of flooding. The main source of flooding in the town is fluvial. **Figure 2-1** and **Table 5-2** show the locations of previous flood events within Athy. Fluvial flooding within the town occurs primarily from the Barrow and Moneen Rivers.

Table 5-2 Historical Flooding in Athy

Historical Flooding
Flood Event Feb 1974 – River Barrow: No data found relating to damage caused
Flood Event Feb 1990 – River Barrow & Moneen River confluence: Flooded areas in town centre and along R417
Flood Event Jan 1995 – River Barrow: Flooded roads and fields
Flood Event Nov 2002 – River Barrow: Flooded roads and fields in Kilberry area
Flood Event Aug 2008 –River Barrow: Flooded roads and fields
Flood Event Nov 2009 – Bennetts Stream overtopped its banks flooding parts of the Corran Ard housing estate.
Flood Event Feb 2014 – River Barrow: Flooded areas along R417 and sections of Monasterevin Road

5.5 South Eastern CFRAMS and River Barrow FRMP

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

Athy was identified as an Area for Further Assessment (AFA) within the South Eastern CFRAMS. The South Eastern CFRAMS Flood Risk Review recognised the need for the Athy Area to be identified as an AFA based on evidence from historical flood events and the extents of the flood risk determined during the OPW Preliminary Flood Risk Assessment (PFRA) Study. **Figure 5-1** below shows an example of flood extent mapping from the CFRAMS for Athy.

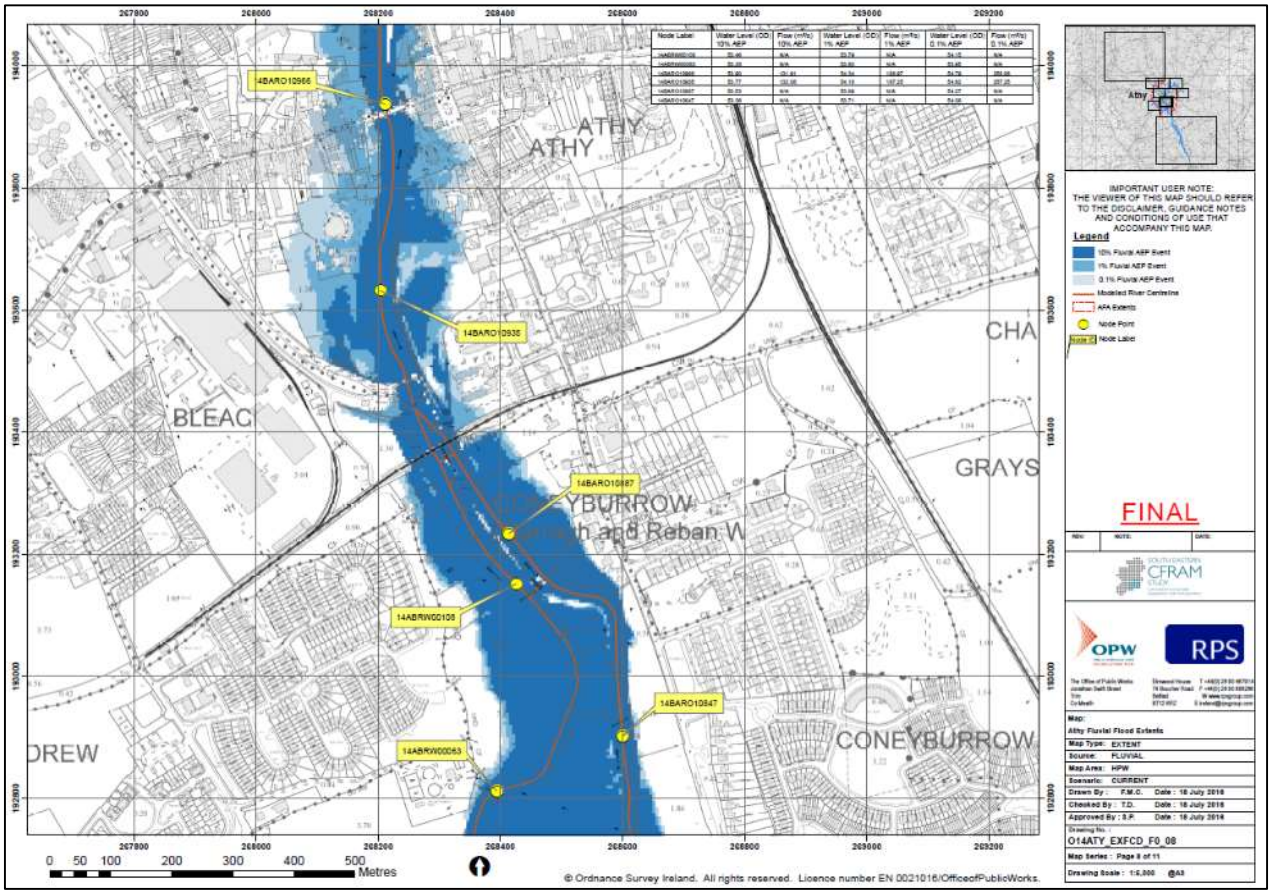


Figure 5-1 CFRAMS Flood Extent map for Athy town centre

The FRMP for the Barrow River was published by the OPW as an output from the South Eastern CFRAMS. The FRMP outlined a series of proposed flood risk policy measures for the River Barrow catchment but also a preferred flood alleviation scheme for Athy, as shown in **Figure 6-1** below. The lists of measures applicable to Athy are outlined in **Table 5-3** below. A Disclaimer and Conditions of Use for flood maps the FRMP is available at www.floodinfo.ie. The River Barrow FRMP was adopted by KCC in July 2018 and they have committed to implementing the recommendations from the FRMP and will work in conjunction with the OPW to deliver the proposed flood relief scheme for Athy. This scheme will provide protection to existing residential and commercial properties at risk from fluvial flooding to 1% AEP event standard of protection (roughly equivalent to a 1 in 100-year storm).

Table 5-3 River Barrow FRMP proposed Flood Risk Management Measures

	FRMP Code	Measure
Regional Measures	IE14-UoM-9011-M21	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-9052-M22	Voluntary Home Relocation Scheme
	IE14-UoM-9053-M43	Individual Property Protection
	IE14-UoM-9013-M21	Consideration of Flood Risk in local adaptation planning
	IE14-UoM-9021-M31	Assessment of Land Use and Natural Flood Risk Management Measures
	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 Measures	IE14-140150-0114-M33	Progress the project-level development and assessment of a Flood Relief Scheme for Athy, including environmental assessment as necessary and further public consultation, for refinement and preparation for planning / exhibition and, if and as appropriate, implementation.

5.6 CFRAMS Updated Modelling

Following on from the CFRAMS project, KCC appointed RPS to undertake a series of model simulations utilising the CFRAMS hydraulic models to review and update the flood extents for the town of Athy based on the most recent hydrological data available at the local gauging stations. Refer to **Section 6.2.3** for further detail on the updated modelling.

5.7 Conclusion of Stage 1

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

6 STAGE 2 – INITIAL FLOOD RISK ASSESSMENT

6.1 Overview

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

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

6.2 Fluvial Flooding

6.2.1 CFRAM Fluvial Flood Mapping

Section 5.4 and **Section 5.5** above detail the historical flooding in the town and the steps taken to analyse and assess the fluvial flood risk to Athy. The CFRAMS generated flood extent maps for the town identifying at risk areas. **Figure 5-1** shows an example of the maps created and they are also available at www.floodinfo.ie. The town is affected by fluvial flooding during a 1% AEP and 0.1% events. A significant number of both residential and non-residential properties are at risk, concentrated within Athy town centre. Several local roads and a regional road are also at risk along with a number of cultural heritage assets. As a result Athy is considered at risk in present day and future scenarios.

6.2.2 River Barrow FRMP – Athy Proposed Flood Relief Works

There is no existing flood scheme in place for Athy. The FRMP for the River Barrow identified a proposed flood relief scheme for Athy. This scheme will provide protection to existing residential and commercial properties at risk from fluvial flooding to 1% AEP event standard of protection. KCC is currently developing a brief for consultancy services for the design of the Athy Flood Relief Scheme. It is likely that the scheme will involve construction of defences along both sides of the River Barrow in the town centre. The proposed FRMP measures consist of building hard defences, that would be set back from the river channel where possible and would protect to the 1% AEP fluvial flood event with an estimated average height of 1.2m and length of 2.9km It is envisaged that these works can be incorporated into landscaping features. These proposed FRMP measures will be subject to further assessment and possible amendment before being presented to the public for consultation. The scheme will also be reviewed to integrate climate change considerations into its design, planning and construction. **Figure 6-1** shows the proposed flood relief measures identified in the River Barrow FRMP. The defences are concentrated around the town centre along the banks of the River Barrow near the Crom-A-Boo Bridge and also along the Moneen River as it confluences with the River Barrow.

Figure 6-1 Proposed flood relief measures identified in the River Barrow FRMP for Athy

6.2.3 Updated CFRAMS Modelling

Following on from the CFRAMS project, KCC appointed RPS to undertake a series of model simulations utilising the CFRAMS hydraulic models to review and update the flood extents for the town of Athy based on the most recent hydrological data available at the local gauging stations. Six years of additional water level and flood data was available since the completion of the CFRAMS hydrological study which give greater statistical robustness to calculate the flow estimates for the River Barrow. **Figure 6-2** show the two gauging stations at the Athy (14105, EPA) and the Levitstown (14019, OPW) where the hydrometric data was collected from. The latest data also included water level and flow data from the winter of 2015/16 and when Storm Frank occurred which was the 2nd highest peak water level and flow ever recorded on the Barrow at Levitstown. It is estimated based on an at site flood frequency analysis of the event that it was a 2.5% AEP (40-year return period) event. The largest event on record was November 2009 which had a peak flow of 180m3/s. At the time of the CFRAM Study it was estimated that this was a 1.67% AEP (60-year return period) event.

The hydraulic model developed for CFRAMS was calibrated to a series of flooding events. The model was well calibrated with these historical flood events, using a series of reports, aerial photographs and with the consideration of chronological change. The most recent flood event to have affected Athy referenced in the South Eastern CFRAS refers to the 7th of February 2014. The flood event was reported in the local media and extents captured by extensive aerial photography. This flood event is estimated to be <10% AEP fluvial event and therefore was not required for CFRAMS model calibration. This event was used for the model calibration of the updated modelling. This flooding incident is connected to a successive series of storms that occurred during Winter 2013/2014 period. Increased rainfall amounts and saturated or waterlogged ground, contributed to flooding.

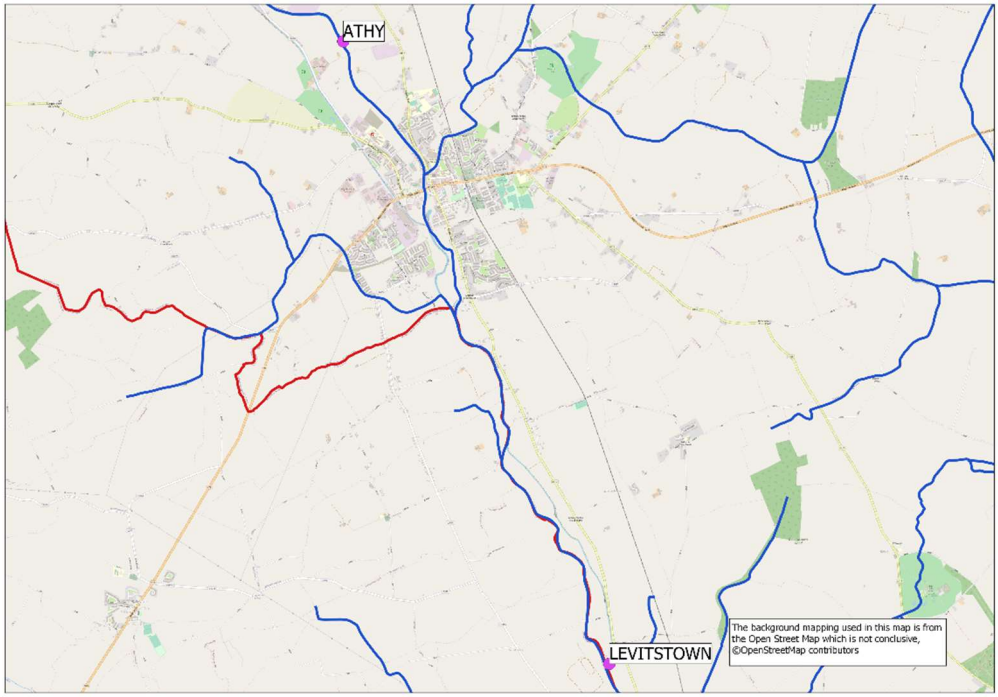


Figure 6-2 Gauging Stations along the River Barrow

6.2.4 Comparison Between Updated Modelling and CFRAMS

The flood extents for both the to 1% AEP and 0.1% AEP fluvial return period levels showed increase flood extents associated for the updated model over the CFRAMS model. There was increases on both the left and right banks of the River Barrow, as well as along Moneen and Bennett's Tributary. A comparison of water levels between the models highlighted the updated model has an average increase of 0.17m-0.26m along the River Barrow.

6.2.5 Fluvial Flood Zone mapping

As the flood extents for the updated modelling are the most up to date for Athy and show increased flood extents over the CFRAMS, they have been adopted by KCC as the flood zones for Athy. The flood zones only account for inland flooding and the confidence in the accuracy of the maps is considered to be high due to the robust nature of the flood mapping and hydraulic modelling process. The flood zone map is shown in **Appendix A**. KCC have used the flood zones to apply The Guidelines sequential approach, and where necessary the Justification Test, to appraise sites for suitable land zonings and identify how flood risk can be managed as part of the LAP.

6.3 Climate Change Sensitivity

The CFRAMS flood extent mapping for the current and mid-range future scenarios, as shown on www.floodinfo.ie were compared as part of the SFRA to establish an indication of future risk in areas using the difference between the flood extents with/without climate change. The review concluded that no proposed highly vulnerable zonings are at risk in the future, however some existing zonings and well-established areas of the town could come under increased flood risk. The CFRAMS also concluded that Athy which would be considered to be at high vulnerability from the mid-range and high-end future climate change scenarios. Therefore, the proposed flood relief measures will require to be designed for climate change adaptability. Adaptation would require additional height and length of hard defences and additional space for embankments, adaptations could be accommodated at moderate to significant cost and visual impact. Areas at specific risk from potential increases in flood extent due to climate change are discussed in **Section 7.2**. SSFRAs should address climate change scenarios in relation to FFLs and potential mitigation measures in these areas.

6.4 Pluvial Flooding

There are no recorded incidents of significant pluvial flooding within the town. The town is generally gently sloping towards the River Barrow and its tributaries. The soil, subsoils and geology of the site has been determined from the Geological Survey of Ireland (GSI) online Spatial Data and Resources and the Environmental Protection Agency (EPA) online map viewer. The GSI online spatial data viewer shows that the soil underlying the town is described as Urban (Made-Ground) associated with the town urban footprint while the regional sub soil is a series of medium to high permeability so water logging is a low risk.

The OPW undertook a national Preliminary Flood Risk Assessment (PFRA) that provided a national level screening of areas that are at potential risk of pluvial flooding. 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. **Figure 6-3** shows the pluvial extents for the town of Athy and it can be seen that there is limited potential pluvial flooding in the town with some pockets of extents that coincide with existing green spaces in Flinters Close, Clonmullen and the Peoples Park. The appears to be some flooding potential in the area near Nelson street, however overall the risk of pluvial flooding appears to be low in the town. Implementing and following recommendations from the GDSDS in the town can reduce the risk of pluvial flooding.

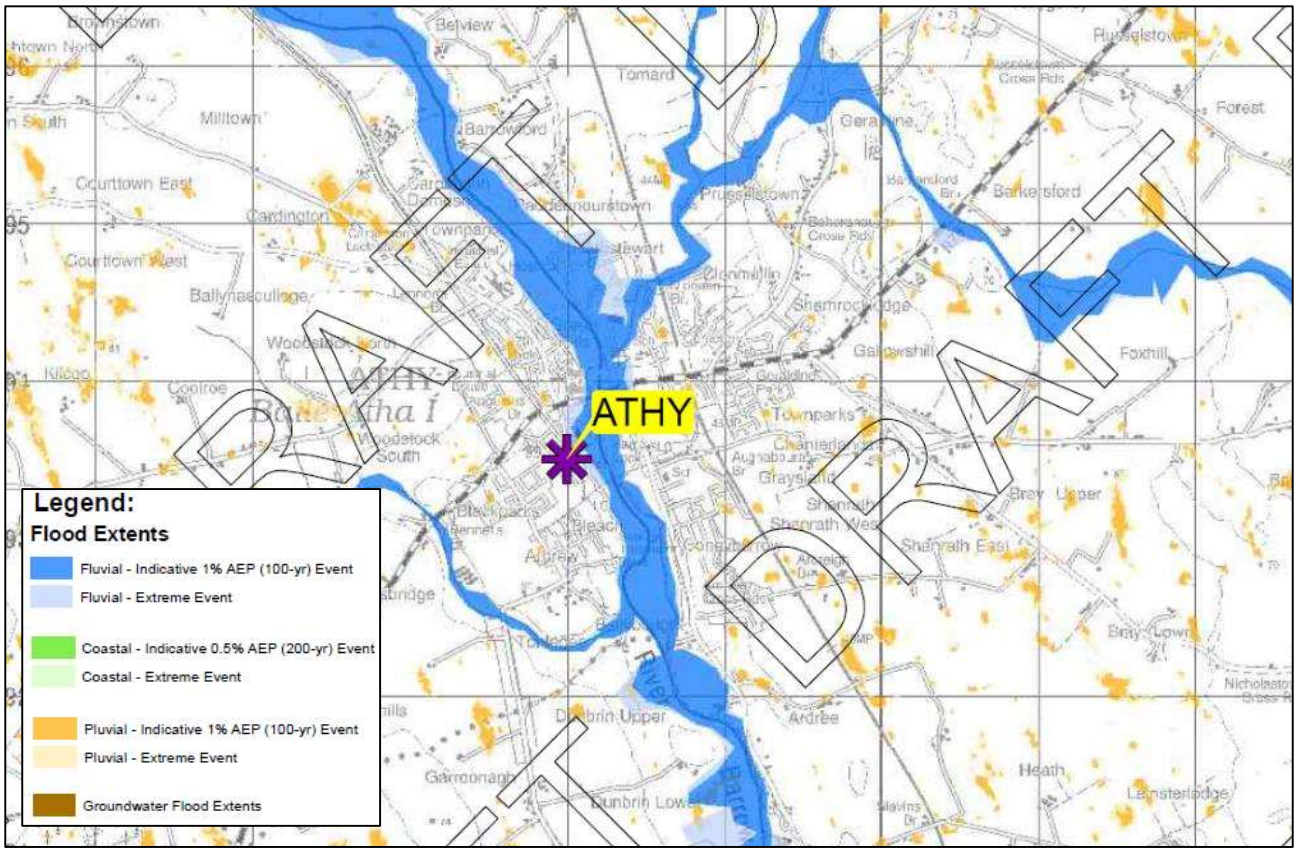


Figure 6-3 OPW PFRA Pluival Flooding Map for Athy

6.5 Groundwater Flooding

A review of the GSI Groundwater Flooding Data Viewer , as presented in **Figure 6-4** , shows no records of groundwater flooding occurring in the town, also no recorded karst features which can indicate potential for groundwater flooding and no predicted ground water flood in the region. There are some isolated areas of historical surface water flooding which is mostly likely due to poor drainage during extreme rainfall events in non-developed rural outside of the town. The risk of ground water flooding for the town is deemed to be low but mitigation measures for excavations during construction should be employed to avoid flooding from the local water table.

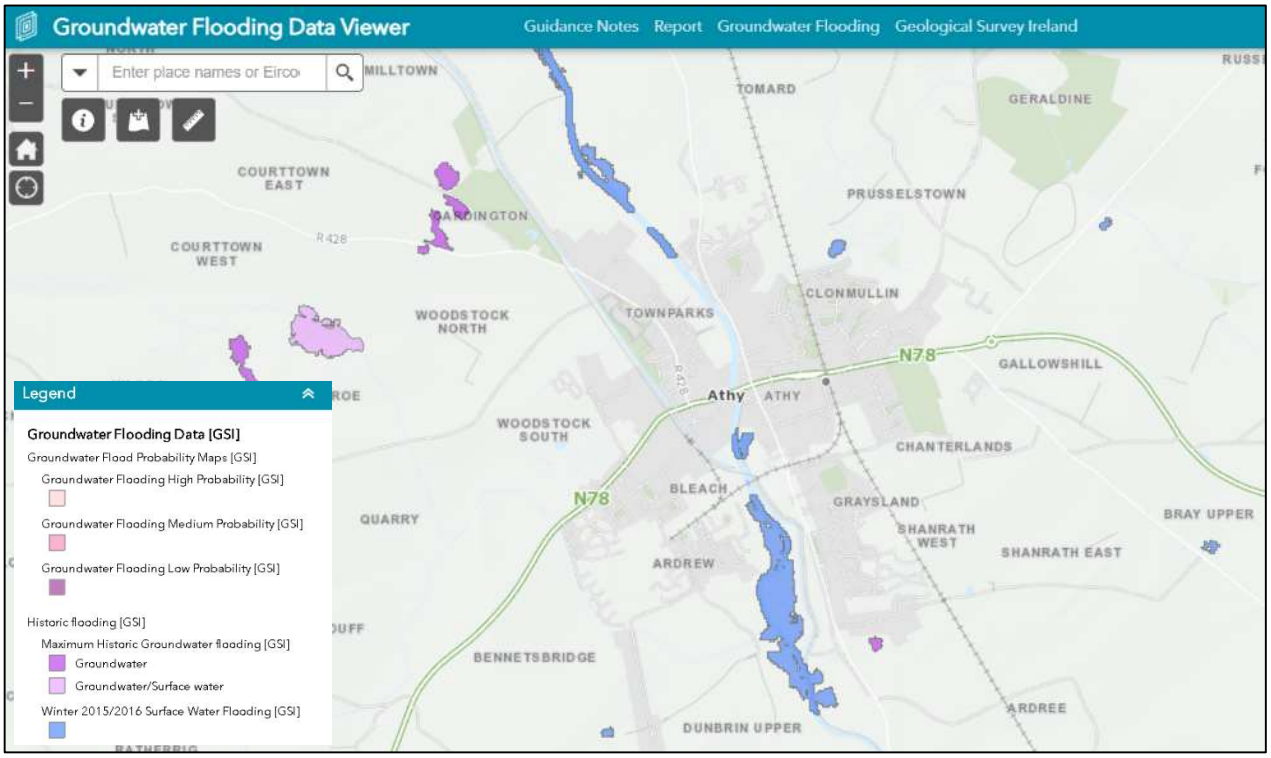


Figure 6-4 Groundwater Flooding Data from GSI Data Viewer

6.6 Conclusion of Stage 2

The town of Athy was identified to have a high fluvial flood risk and hence a further assessment of the implications to the town was necessary. A review of the available flood extent mapping and reports for the CFRAMS indicates the site is at risk from fluvial flooding for the 1% and 0.1% AEP events. Further additional hydraulic modelling (updating the CFRAMS modelling) procured by KCC indicates an increase in the flood extents for the town for both 1% and 0.1% AEP events. The risk of pluvial and groundwater flooding has been deemed to be low and does require further assessment for the SFRA, however they should still be assessed for SSFRAs as appropriate.

There is no existing flood scheme in place for Athy. The FRMP for the River Barrow identified a proposed flood relief scheme for Athy. This scheme will provide protection to existing residential and commercial properties at risk from fluvial flooding to 1% AEP event standard of protection. KCC is currently developing a brief for consultancy services for the design of the Athy Flood Relief Scheme. It is likely that the scheme will involve construction of defences along both sides of the River Barrow in the town centre. These proposed FRMP measures will be subject to further assessment and possible amendment before being presented to the public for consultation. The scheme will also be reviewed to integrate climate change considerations into its design, planning and construction.

As the flood extents for the updated modelling are the most up to date for Athy, show increased flood extents over the CFRAMS and the confidence in the accuracy of the maps is considered to be high due to the robust nature of the flood mapping and hydraulic modelling process, they have been adopted by KCC as the flood zones for Athy. KCC have used the flood zones to apply The Guidelines sequential approach, and where necessary the Justification Test, to appraise sites for suitable land zonings and identify how flood risk can be managed as part of the LAP which is described in **Section 7** below. The flood zone map is shown in **Appendix A**.

KCC have appraised the zonings against the flood zones and they do not require further hydraulic modelling to be in compliance with the Guidelines, therefore it is not required for the Athy LAP to progress to Stage 3 Detailed FRA. Detailed FRAs for some development areas may be required at planning level stage, see **Section 7** below for further detail.

7 DEVELOPMENT PLAN ZONING

7.1 Introduction

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

KCC reviewed the flood zones during the LAP process and followed the sequential approach to zone land appropriate to their flood risk vulnerability. Open Space and amenity areas have been zoned to coincide with flood risk areas in so far as possible. Where less vulnerable and highly vulnerable zonings coincide with flood zones, Justification Tests have been carried out as applicable and are shown in **Appendix B**.

Table 7-1 Land Use Zoning and Vulnerabilities

Objective	Vulnerability	Justification Test Required
A – Town Centre	High / Less	For highly vulnerable development in Flood Zone A or B For less vulnerable development in Flood Zone A
B – Existing Residential & Infill	High	For Development in Flood Zone A or B
C – New Residential	High	For Development in Flood Zone A or B
E – Community & Educational	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 – Agricultural	Less / Water Compatible	For Development in Flood Zone A
L – Leisure & Amenity	Less	For 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
Q – Enterprise& Employment	Less	For Development in Flood Zone A
SR – Strategic Reserve	High / Less	For highly vulnerable development in Flood Zone A or B For less vulnerable development in Flood Zone A
U – Transport & Utilities	High	For Development in Flood Zone A or B

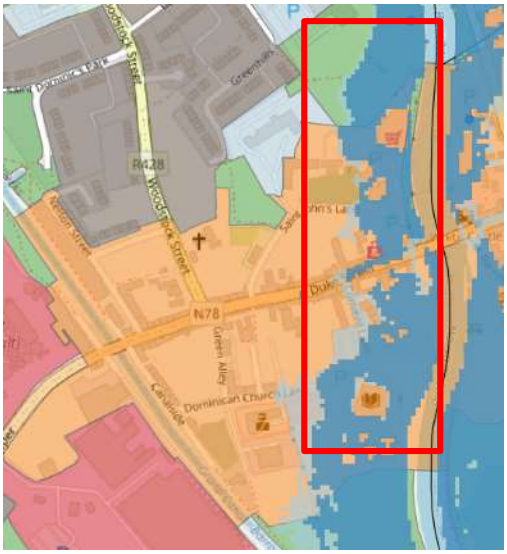
7.2 Pre-existing Zoned Areas

This section details flood risk reviews of pre-existing zonings affected by the Flood Zones**. Table 7-2** below summarises the applicability of the Justification Test to pre-existing zoned areas in Athy by overlaying the flood zones on the pre-existing land use zonings. Justification Tests where applicable for areas are shown in **Appendix B**.

Table 7-2 Pre-existing zoned areas vulnerable to potential flooding

Site No.	Location	Land Use Zoning	Land Use Vulnerability	Justification Test Requirement
1	Town Centre - Left Bank (Saint John's Lane, Duke Street, Covent Lane)	Town Centre & Existing Residential.	Highly / Less Vulnerable	Required as some of the existing residential zoning is located in Flood Zone A and B as well as commercial zoning in Flood Zone A.
2	Tegral lands	Enterprise & Employment	Less Vulnerable	Required as a section of the lands is in Flood Zone A.
3	Corran Ard Housing Development	Existing Residential	Highly Vulnerable	Required as some of the existing residential zoning is located in Flood Zones A and B.
4	Rowing Club/ Rathstewart Crescent	Existing Residential	Highly Vulnerable	Required as some of the existing residential zoning is located in Flood Zones A and B.
5	Saint Joseph's Terrace, White Castle Estate	Existing Residential	Highly Vulnerable	Required as some of the existing residential zoning is located in Flood Zones A and B.
6	Aldi Store	Neighbourhood Centre	Less Vulnerable	Required as commercial zoning in Flood Zone A.
7	Ardscoil Na Trinoide & Scoil Mhichil Naofa	Community & Educational	Highly Vulnerable	Required as some of the educational zonings are located in Flood Zones A and B.
8	Convent View	Existing Residential	Highly Vulnerable	Required as some of the existing residential zoning is located in Flood Zones A and B.
9	Clover Lodge Nursing Home	Community & Educational	Highly Vulnerable	Required as some of the community zoning is located in Flood Zones A and B.
10	Town Centre – Right Bank	Town Centre & Existing Residential	Highly / Less Vulnerable	Required as some of the existing residential zoning is located in Flood Zones A and B as well as commercial zoning in Flood Zone A.
11	Marina Court	Existing Residential	Highly Vulnerable	Required as some of the existing residential zoning is located in Flood Zones A and B.
12	Geraldine Road	New Residential	Highly Vulnerable	Required as some areas are located in Flood Zone A and B.

7.2.1 Town Centre - Left Bank (Saint John's Lane, Duke Street, Covent Lane)



Historical Flooding	Some historical flooding reported in the area on both sides of the N78 particularly in 2008 and 2009.
Flood Risk	Fluvial Flooding The flood zones show residential and commercial properties within the inundated within Flood Zones A and B on both sides of the N78. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates this area is susceptible to increases in flood extents for Flood Zones A and B, impacted streets and buildings more inland close to the Garda Station. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**. Any future development or regeneration in the town centre should be subject to a SSFRA. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% or 1% AEP level where appropriate, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the River Barrow to protect against the 1% AEP event. It should also be noted that the town centre is susceptible to increases in flood extents during

climate change scenarios. Any SSFRAs in the town centre should include an assessment of the impacts of climate change and the proposed flood defences from the FRMP.

Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

7.2.2 Tegral lands

Historical Flooding	Aerial Photography is inconclusive due to tree cover on the site but surrounding areas are flooded during the 2008 event.
Comment	Fluvial Flooding The flood zones show this site inundated adjacent to the riverbank within Flood Zones A and B. This area of the zoning is currently woodland and open space. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates this area is susceptible to increases in flood extents for Flood Zones A and B. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**. Any future development on this site should be subject to a SSFRA. The SSFRA should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% or 1% AEP level where appropriate, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. SSFRA should also examine climate change scenarios.

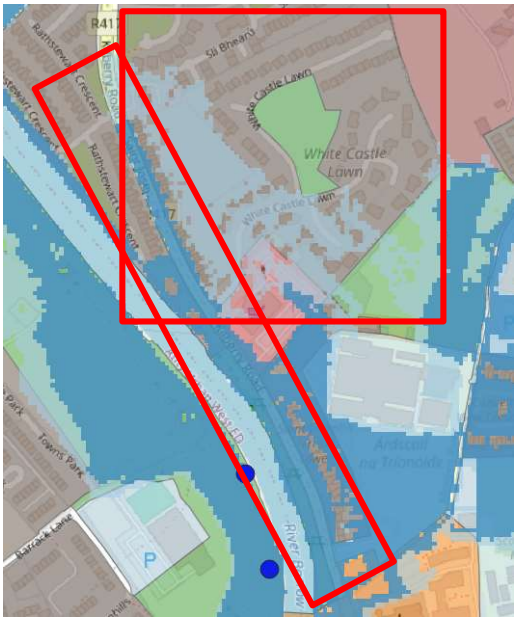
7.2.3 Corran Ard Housing Development

Historical Flooding	Historical flooding reported in the housing development in 2009.
Comment	Fluvial Flooding The flood zones show properties and roads within the residential estate inundated within Flood Zone A and B extents. The extents are predominantly contained within the road network. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for Flood Zones A and B with flooding extending along the road network further inland. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**. Any future significant development should be subject to a SSFRA. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% or 1% AEP level where appropriate, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. SSFRAs should also examine climate change scenarios. Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

7.2.4 Rowing Club/|Rathstewart

Historical Flooding	Some historical flooding reported in this area.
Comment	Fluvial Flooding The predictive flood maps show the area inundated for Flood Zones A and B. The predicted flood zones are largely contained to a rowing club building and its yard which are considering flood compatible in the Guidelines. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The mapping indicates an increase in flood extents for both Flood Zones A and B in this area. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**. Any future significant development should be subject to a SSFRA. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% or 1% AEP level where appropriate, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. SSFRAs should also examine climate change scenarios. Any SSFRAs should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the River Barrow in this area to protect against the 1% AEP event. Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

7.2.5 Saint Joseph's Terrace, White Castle Estate



Historical Flooding	Some historical flooding reported along Saint Joseph's Terrace.
Comment	Fluvial Flooding The flood zones show residential properties along Saint Joseph's Terrace and in the Castlelawn estate inundated within Flood Zone A and B extents. The lower of Saint Joseph's Terrace is particular vulnerable. Residential properties further north on Saint Joseph's Terrace appear to be raised higher than the road and flooding is predominantly confined to the road. The Castlelawn estate is impacted by the 0.1% AEP event and would be cut off during a 1% AEP as there is only one entrance to the estate. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for both the Flood Zones A and B. Castlelawn in particular is susceptible to be included in Flood Zone A in the future. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**. Any future significant development should be subject to a SSFRA. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% or 1% AEP level where appropriate, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. SSFRAs should also examine climate change scenarios.

Any SSFRAs should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the River Barrow in this area to protect against the 1% AEP event

Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

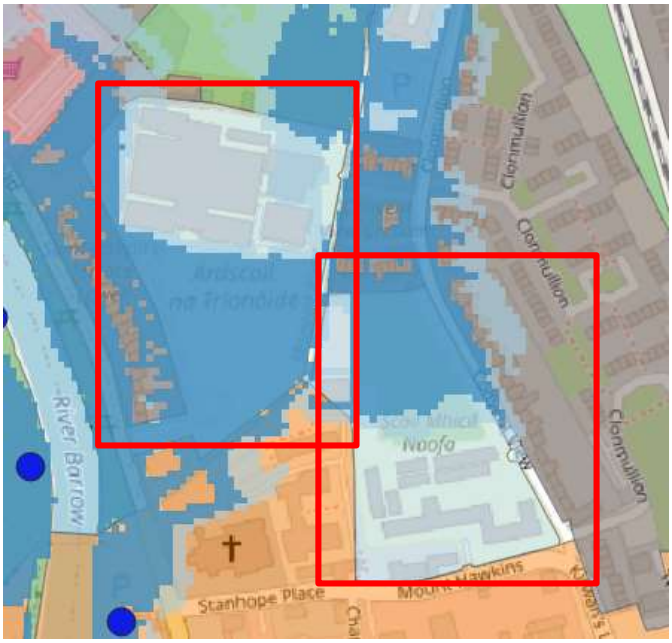
7.2.6 Aldi Store

Historical Flooding	Some historical flooding reported along Saint Joseph's Terrace which is access for the development.
Comment	Fluvial Flooding The flood zones show areas of the site lie within Flood Zone A and B extents. The predicted flood zones are contained within car parking areas of the site. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for Flood Zones A and B in the car parking area. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**. Any extension of the commercial property should be subject to a SSFRA. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 1% AEP level, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency

evacuation plan and defined access / egress routes should be developed for extreme flood events. SSFRAs should also examine climate change scenarios.

Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

7.2.7 Ardscoil Na Trinoide & Scoil Mhichil Naofa



Historical Flooding	Historical flooding reported along the banks of the Moneen River in this area.
Comment	Fluvial Flooding The flood zones show large areas of the sites impacted by the 1% AEP event with some predicted flooding for the 0.1% AEP event. The vast majority of the flooding is contained within playing pitches and green areas. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for both Flood Zones A and B across both sites. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zonings in this area remain suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test is included in **Appendix B**. Any future expansion of the schools should be subject to a SSFRAs.

The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% AEP level, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events.

Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the Moneen River to protect against the 1% AEP event. It should also be noted that the school zonings are susceptible to increases in flood extents during climate change scenarios. Any SSFRAs for the schools should include an assessment of the impacts of climate change and the proposed flood defences from the FRMP.

Applications for minor development to existing school buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

7.2.8 Convent View

Historical Flooding	Historical flooding reported along the banks of the Moneen River in this area.
Comment	Fluvial Flooding The flood zones show several residential properties inundated within Flood Zone A and B extents. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for Flood Zones A and B in the Convent View area. Justification Test

	It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test is included in **Appendix B**. Any future significant future development should be subject to a SSFRAs. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% AEP level, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the Moneen River to protect against the 1% AEP event. It should also be noted that the area is susceptible to increases in flood extents during climate change scenarios. Any SSFRAs should include an assessment of the impacts of climate change and the proposed flood defences from the FRMP. Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

7.2.9 Clover Lodge Nursing Home

Historical Flooding	Historical flooding reported along the banks of the Moneen River in this area.
Comment	<u>Fluvial Flooding</u> The flood zones show the site for the nursing home inundated within Flood Zone A and B extents.

	Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for Flood Zones A and B. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test is included in **Appendix B**. Any future significant future development should be subject to a SSFRAs. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% AEP level, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the Moneen River to protect against the 1% AEP event. It should also be noted that the area is susceptible to increases in flood extents during climate change scenarios. Any SSFRAs should include an assessment of the impacts of climate change and the proposed flood defences from the FRMP. Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

7.2.10 Town Centre – Right Bank

Historical Flooding	Some historical flooding reported in the area on both sides of the N78 particularly in 2008 and 2009.
Comment	Fluvial Flooding The flood zones show residential and commercial properties within the inundated within Flood Zones A and B on both sides of the N78. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for Flood Zones A and B on the left bank near Emily Square. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**. Any future development or regeneration in the town centre should be subject to a SSFRA. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% or 1% AEP level where appropriate, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. SSFRAs should also examine climate change scenarios Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the Rye Barrow to protect against the 1% AEP event. It should also be noted that the town centre is susceptible to increases in flood extents during

climate change scenarios. Any SSFRAs in the town centre should include an assessment of the impacts of climate change and the proposed flood defences from the FRMP.

Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

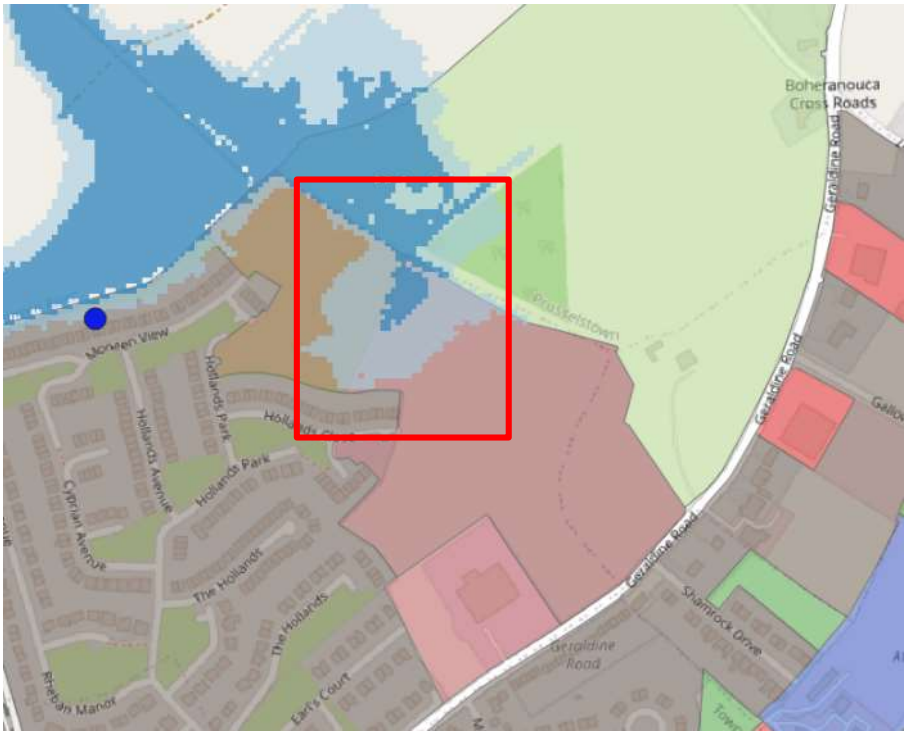
7.2.11 Marina Court

Historical Flooding	Some historical flooding reported in the area along the riverbank.
Comment	Fluvial Flooding The flood zones show limited flooding to the carparking and greenspaces of the residential property. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping doesn't indicates an significant increase in flood extents for climate change scenarios in this area. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.
Conclusion	KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**. Any future significant development should be subject to a SSFRA. The SSFRAs should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% or 1% AEP level where appropriate, flood resilient construction materials and fittings should be considered and the site should not impede existing flow paths or cause flood risk impacts to the surrounding

areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. SSFRAs should also examine climate change scenarios.

Applications for minor development to existing buildings in areas of flood risk such as small extensions and most changes of use must include a flood risk assessment of appropriate detail to demonstrate that they would not have adverse flood risk impacts and employ flood resilient construction materials and fittings.

7.2.12 Geraldine Road



Historical Flooding	Some historical flooding reported in the area along the riverbank.
Comment	Fluvial Flooding The flood zones show a large extent for the 1% AEP and 0.1% AEP events within the site. The updated modelling for this site shows an increase in extents for both the 1% AEP and 0.1% AEP events over the CFRAM modelling. There is an increase in flood height and volume on the site. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for Floods Zone A and B in this area. Justification Test It was recommended that the Planning Authority carry out the Development Plan Justification Test to assess if the zoning in this area remains suitable.

Conclusion

KCC carried out a Justification Test and found that it is considered appropriate to retain the pre-existing zoning. The Justification Test and proposed flood risk management measures are included in **Appendix B**.

These lands are the subject of a number of extant permissions (Pl Ref 17/751, 18/921, 19/233 & 19/234) where Site Specific Flood Risk Assessments were carried out to inform, the development management/decision making process. These assessments were prepared using the most up to date CFRAMS flooding data available at that time. The lands which were identified as being at risk of flooding (i.e. 1:100 year and 1:1000 year) are designated as public open space for the development and they also form part of the attenuation area for the development.

It is of importance to note that the applications outlined above were accompanied by a SSFRA prepared by independent consultants. The most recent OPW CFRAMS data (2016) indicated that part of the subject site experiences the 1 in 1000 year (0.1% AEP) fluvial event. The SSFRA recommended mitigation measures to address flood risk including inter alia ensuring that the proposed finished ground levels are at least 0.15 above the 0.1% flood level, i.e. 55.78m OD and finished floor levels at least 0.3m above at 55.93mOD which was considered acceptable at the time.

The development is being constructed in three phases. Phase 1 is not located within the predicted flood extents; however areas of Phase 2 and Phase 3 are located in Flood Zones A and B. It is recommended that KCC engage with the developer and their engineers to undertake a flood risk review of the flood storage volumes and flood extents for this development in light of the most up to date flood risk information to ensure that the development is constructed safely and Phases 2 and 3 are not at risk.

The flood risk review should address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% AEP level, the flood storage volumes within the designated attenuation areas, compensatory storage for potential loss of floodplain and ensure that their no flood risk impacts to the surrounding areas. An emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. The review should also examine climate change scenarios.

7.3 Proposed New Zonings

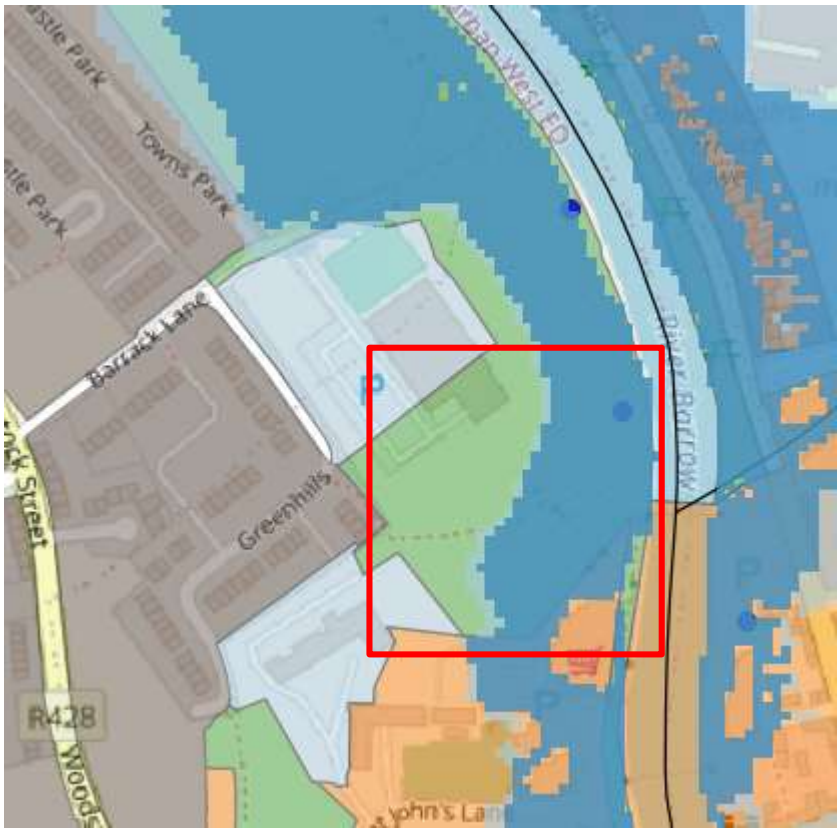
KCC utilised the most up to date flood risk information and flood zone maps to follow the sequential approach and has proposed to rezone several areas to ensure commercial and residential properties are not developed in flood risk areas. **Table 7-3** below surmises areas that will be rezoned due to potential flood risk.

Table 7-3 Proposed New Zoned areas vulnerable to potential flooding

Site No.	Location	Previous Land Use Zoning Athy LAP 2012 – 2018	Land Use Vulnerability	Proposed Land Zoning Athy LAP 2021- 2027	Land Use Vulnerability
14	Greenhills	Town Centre / Mixed Use	Highly / Less Vulnerable	Open Space & Amenity	Less / Water Compatible
15	Dominican Lands	Town Centre / Mixed Use	Highly / Less Vulnerable	Open Space & Amenity	Less / Water Compatible
16	Emily Square	Town Centre / Mixed Use	Highly / Less Vulnerable	Open Space & Amenity	Less / Water Compatible

17	Carlow Road	New Residential	Highly Vulnerable	Open Space & Amenity	Less / Water Compatible
18	Prusselstown	New Residential	Highly Vulnerable	Agricultural	Less / Water Compatible

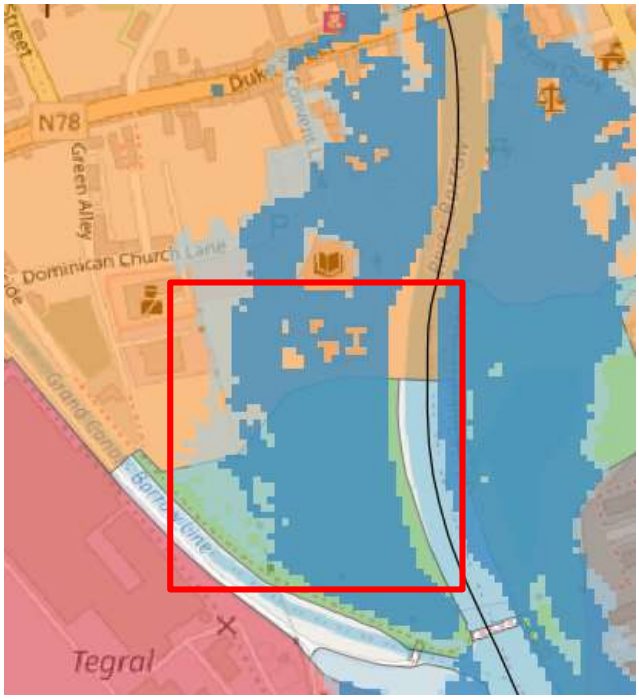
7.3.1 Greenhills



Historical Flooding	Some historical flooding reported in the area particularly in 2008 and 2009.
Comment	Fluvial Flooding The flood zones show significant flooding for Flood Zones A and B adjacent to the riverbank. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for both Flood Zones in this area. Justification Test This existing zoning would not pass a justification test and the sequential approach was followed to appropriately rezone the site.

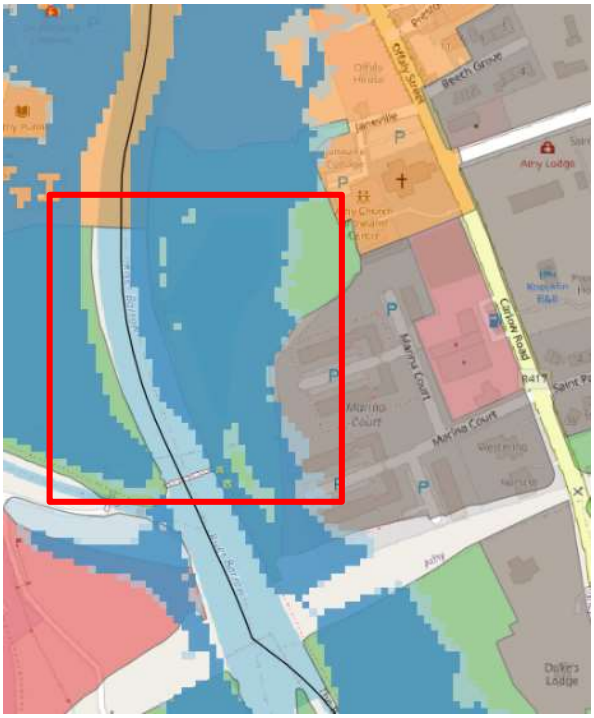
Conclusion	KCC reviewed the existing zoning from the Athy LAP 2012-2018 against all the available flood information, followed the sequential approach and to ensure that no inappropriate development is carried out in this area KCC are proposing to rezone the area to water compatible open space. This will maintain the existing flood storage in this area and help provide natural protection to developed at risk areas of the town.

7.3.2 Dominican Lands



Historical Flooding	Some historical flooding reported in the area particularly in 2008 and 2009.
Comment	Fluvial Flooding The flood zones show significant flooding for Flood Zones A and B adjacent to the riverbank. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for both Flood Zones in this area. Justification Test This existing zoning would not pass a justification test and the sequential approach was followed to appropriately rezone the site.
Conclusion	KCC reviewed the existing zoning from the Athy LAP 2012-2018 against all the available flood information, followed the sequential approach and to ensure that no inappropriate development is carried out in this area KCC are proposing to rezone the area to water compatible open space. This will maintain the existing flood storage in this area and help provide natural protection to developed at risk areas of the town.

7.3.3 Emily Square

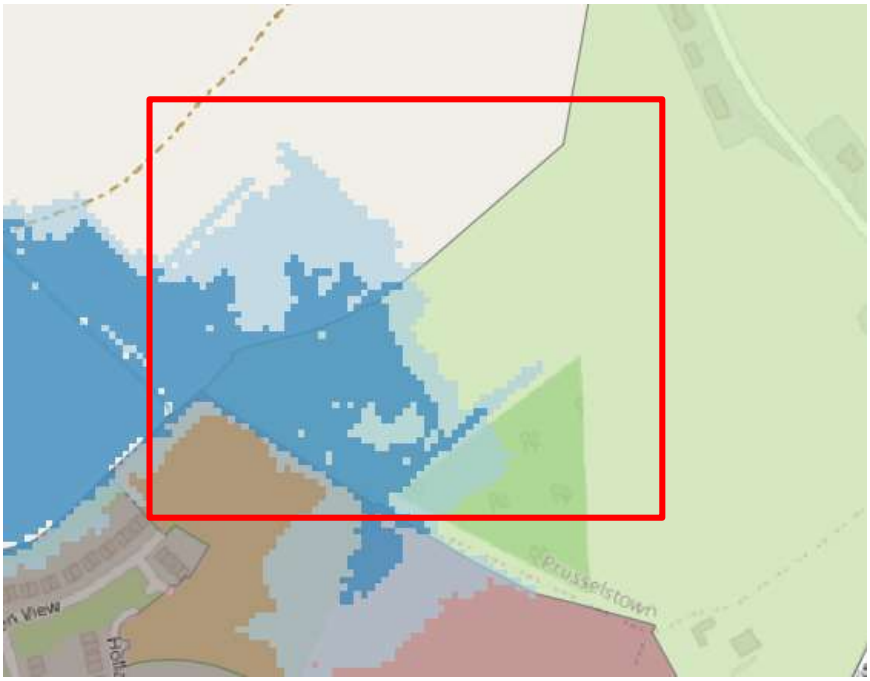


Historical Flooding	Some historical flooding reported in the area particularly in 2008 and 2009.
Comment	Fluvial Flooding The flood zones show significant flooding for Flood Zones A and B adjacent to the riverbank. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for both Flood Zones in this area. Justification Test This existing zoning would not pass a justification test and the sequential approach was followed to appropriately rezone the site.
Conclusion	KCC reviewed the existing zoning from the Athy LAP 2012-2018 against all the available flood information, followed the sequential approach and to ensure that no inappropriate development is carried out in this area KCC are proposing to rezone the area to water compatible open space. This will maintain the existing flood storage in this area and help provide natural protection to developed at risk areas of the town.

7.3.4 Carlow Road

Historical Flooding	Some historical flooding reported in the area particularly in 2008 and 2009.
Comment	Fluvial Flooding The flood zones show significant flooding for Flood Zones A and B adjacent to the riverbank. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping doesn't indicates an significant increase in flood extents for climate change scenarios in this area. Justification Test This existing zoning would not pass a justification test and the sequential approach was followed to appropriately rezone the site.
Conclusion	KCC reviewed the existing zoning against all the available flood information, followed the sequential approach and to ensure that no inappropriate development was carried out in this area the site was rezone to water compatible open space.

7.3.5 Prusselstown



Historical Flooding	Some historical flooding reported in the area along the riverbank.
Comment	Fluvial Flooding The flood zones show significant flooding for Flood Zones A and B adjacent to the riverbank. Pluvial Flooding The PFRA mapping does not highlight pluvial extents in this area. Climate Change The CFRAM mapping indicates an increase in flood extents for both Flood Zones in this area. Justification Test This existing zoning would not pass a justification test and the sequential approach was followed to appropriately rezone the site.
Conclusion	KCC reviewed the existing zoning against all the available flood information, followed the sequential approach and to ensure that no inappropriate development was carried out in this area the site was rezone to water compatible agricultural. This will maintain the existing flood storage in this area and help provide natural protection to developed at risk areas of the town.

7.4 Zoning Flood Risk Summary and Proposals

Table 7-4 outlines the SFRA proposals and the planning decisions made by KCC to address flood risk in the zoning review areas. Justification Tests where applicable are shown in **Appendix B**. Flood mapping for the Athy LAP is shown in **Appendix A**.

Table 7-4 Areas at risk of flood within the Athy area

Site No.	Location	Flood Risk Management Local Authority Decisions for each zoning
1	Town Centre - Left Bank (Saint John's Lane, Duke Street, Covent Lane)	Commercial buildings and residential properties should undertake SSFRAs to ensure that future development expansion or material alterations to sites are cognisant of flood risk. The sites should be developed in an appropriate manner to reduce the flood risk to residents and buildings. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios. Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the River Barrow to protect against the 1% AEP event. It should also be noted that the town centre is susceptible to increases in flood extents during climate change scenarios. Any SSFRAs in the town centre should include an assessment of the impacts of climate change and the proposed flood defences from the FRMP.
2	Tegral lands	Any development of the greenspace area of the commercial site should undertake a SSFRA to ensure that future development is cognisant of flood risk and do not increase flood risk in the surrounding areas. The SSFRA should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. The SSFRA should also examine climate change scenarios.
3	Corran Ard Housing Development	Residential properties should undertake SSFRAs to ensure that future development expansion or material alterations to sites are cognisant of flood risk. The sites should be developed in an appropriate manner to reduce the flood risk to residents and buildings. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios
4	Rowing Club/ Rathstewart Crescent	Commercial / ammenity buildings and residential properties should undertake SSFRAs to ensure that future development expansion or material alterations to sites are cognisant of flood risk. The sites should be

Site No.	Location	Flood Risk Management Local Authority Decisions for each zoning
		developed in an appropriate manner to reduce the flood risk to residents and buildings. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios. Any SSFRAs should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the River Barrow in this area to protect against the 1% AEP event.
5	Saint Joseph's Terrace, White Castle Estate	Residential properties should undertake SSFRAs to ensure that future development expansion or material alterations to sites are cognisant of flood risk. The sites should be developed in an appropriate manner to reduce the flood risk to residents and buildings. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios. Any SSFRAs should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the River Barrow in this area to protect against the 1% AEP event.
6	Aldi Store	Any expansion of the commercial building or site should undertake a SSFRA to ensure that future development or material alterations to the site is cognisant of flood risk and do not increase flood risk in the surrounding areas. The SSFRA should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. The SSFRA should also examine climate change scenarios.
7	Ardscoil Na Trinoide & Scoil Mhichil Naofa	SSFRAs should be undertaken to ensure that any future expansion of the schools is cognisant of flood risk. The sites should be developed in an appropriate manner to reduce the flood risk to students and staff. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios.

Site No.	Location	Flood Risk Management Local Authority Decisions for each zoning
		Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the Moneen River to protect against the 1% AEP event.
8	Convent View	Residential properties should undertake SSFRAs to ensure that future development expansion or material alterations to sites are cognisant of flood risk. The sites should be developed in an appropriate manner to reduce the flood risk to residents and buildings. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios. Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the Moneen River to protect against the 1% AEP event.
9	Clover Lodge Nursing Home	A SSFRA should be undertaken to ensure that any future expansion of the nursing home is cognisant of flood risk. The site should be developed in an appropriate manner to reduce the flood risk to residents and staff. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios. Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the Moneen River to protect against the 1% AEP event.
10	Town Centre – Right Bank	Commercial buildings and residential properties should undertake SSFRAs to ensure that future development expansion or material alterations to sites are cognisant of flood risk. The sites should be developed in an appropriate manner to reduce the flood risk to residents and buildings. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios. Any SSFRA should be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the River Barrow to protect against the 1% AEP event. It should also be noted that the town centre is susceptible to increases in flood extents during climate change scenarios. Any SSFRAs in the town centre should include an assessment of the impacts of climate change and the proposed flood defences from the FRMP

Site No.	Location	Flood Risk Management Local Authority Decisions for each zoning
11	Marina Court	Residential properties should undertake SSFRAs to ensure that future development expansion or material alterations to sites are cognisant of flood risk. The sites should be developed in an appropriate manner to reduce the flood risk to residents and buildings. SSFRAs should address the sequential approach in terms of site layout, finished floor levels, flood resilient construction materials and fittings, existing flow paths and flood risk impacts to the surrounding areas. Development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan. SSFRAs should also examine climate change scenarios.
12	Geraldine Road	These lands are the subject of a number of extant permissions (Pl Ref 17/751, 18/921, 19/233 & 19/234) where Site Specific Flood Risk Assessments were carried out to inform, the development management/decision making process. These assessments were prepared using the most up to date CFRAMS flooding data available at that time. The lands which were identified as being at risk of flooding (i.e. 1:100 year and 1:1000 year) are designated as public open space for the development and they also form part of the attenuation area for the development. It is of importance to note that the applications outlined above were accompanied by a SSFRA prepared by independent consultants. The most recent OPW CFRAMS data (2016) indicated that part of the subject site experiences the 1 in 1000 year (0.1% AEP) fluvial event. The FRA recommends mitigation measures to address flood risk including inter alia ensuring that the proposed finished ground levels are at least 0.15 above the 0.1% flood level, i.e. 55.78m OD and finished floor levels at least 0.3m above at 55.93mOD which was considered acceptable at the time.

8 FLOOD RISK MANAGEMENT POLICIES AND OBJECTIVES

8.1 General Development Plans and Strategies

The Kildare County Development Plan 2017-2023 outlines surface water and flooding flood risk management policies and objectives for the entire county. The Athy LAP will implement these policies to ensure flood risk and surface water management is considered during the planning process for development within the LAP boundary. The Athy LAP will also implement specific local policies and objectives which have also been adopted from the existing development plan and updated based on the information provided in the SFRA process and are shown in **Table 8-1**.

Table 8-1 LAP Flood Risk Management policies

Planning Policy / Objective	Policy Description
Policy I2 – Surface Water and Groundwater	It is the policy of the Council to maintain and enhance the existing surface water drainage systems in Athy and to protect surface and ground water quality in accordance with the Water Framework Directive.
IO2.1	Carry out an audit of the existing surface water infrastructure to identify improvement works as required.
IO2.2	Ensure that all new developments maintain surface water discharge at greenfield runoff rate, including an allowance for climate change.
IO2.3	Incorporate Sustainable Urban Drainage Systems (SuDS) and other nature-based surface water drainage solutions as part of all plans and development proposals in Athy. Priority shall be given to SuDS that incorporate green infrastructure and promote biodiversity including green roofs, walls and rain gardens. Proposals for all new residential developments and for the development of 'H' and 'Q' zoned employment lands must consider the potential for SuDS to control surface water outfall and protect water quality, with underground retention solutions only being considered when all other options have been exhausted.
IO2.7	Ensure that development along urban watercourses must comply with the Inland Fisheries Ireland Guidance 'Planning for Watercourses in the Urban Environment (2020), including the maintenance of a minimum riparian zone of 35 metres for river channels greater that 10 metres in width, and 20 metres for rivers channels less than 10 metres in width. Development within this zone will only be considered for water compatible developments.
Surface Water and Groundwater: Actions	To encourage 'daylighting'/deculverting and the restoration of culverted water bodies within the town as a natural method of flood management.
Policy I3 – Flood Risk Management	It is the policy of the Council to manage flood risk in Athy in conjunction with the Office of Public Works and in accordance with the requirements of the Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) and circular PL02/2014 (August 2014).
IO3.1	Manage flood risk in Athy 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).

Planning Policy / Objective	Policy Description
IO3.2	Ensure development proposals within the areas outlined on the Flood Risk Map are the subject of Site-Specific Flood Risk Assessment, appropriate to the nature and scale of the development proposed.
IO3.3	Maintain all existing overland flow routes.
I5	It is the policy of the Council to protect environmental quality in Athy through the implementation of European, national and regional policy and legislation relating to air quality, greenhouse gases, climate change, light pollution, noise pollution and waste management.

8.2 Flood Risk Management Plans

KCC have committed to implementing the recommendations from the River Barrow FRMP for Athy (adopted by the Council in July 2018). The lists of measures applicable to Athy are outlined previously in **Table 5-3**. Similarly as discussed in previous sections of the SFRA (**Section 5.5** and **Section 6.2.2**),KCC will work in conjunction with the OPW to deliver the proposed flood alleviation works. This scheme will provide protection to existing residential and commercial properties at risk from fluvial flooding to 1% AEP event standard of protection. KCC is currently developing a brief for consultancy services for the design of the Athy Flood Relief Scheme which reassess and possibly amend the proposed FRMP hard defence measures as shown in **Figure 6-1**.

8.3 Flood Risk Management Objectives

KCC will implement the proposed flood risk management objectives for specific areas, ensuring planning applications, where applicable, will require an FRA of appropriate detail. 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 must demonstrate that appropriate mitigation and management measures are put in place. For any development in flood risk areas that meet the Development Plan Justification Test, a Development Management Justification Test must then be applied. Development must satisfy all the criteria of the Development Management Justification Test.

9 SUMMARY

9.1 Overview

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

9.2 Flood Zones and Flood Risk

Athy is susceptible to several types of flood risk but the primary risk if fluvial flooding which occurs when rivers overtop their banks due to a blockage in the channel or the channel capacity is exceeded. Athy is affected by fluvial flooding from the River Barrow, Moneen River and the Bennetts Stream. 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 derived from model updates to the South Eastern CFRAMS hydraulic model. These model updates were procured by KCC to consider the most up to date hydrological data (water level and flow) in the River Barrow catchment. The Flood Zone mapping is based on the best currently available data and a more detailed, SSFRA may generate localised flood extents. Confidence in the accuracy of the maps is considered to be high due to the robust nature of the flood mapping process. The flood zones only account for inland flooding and are generated without the inclusion of climate change factors. They should not be used to suggest that any areas are free from flood risk as they do not account for potential flooding from pluvial and groundwater flooding. The flood zone maps are shown in **Appendix A**.

The SSFRAs should in general address the site layout with respect to vulnerability of the proposed development type, finished floor levels should be above the 0.1% or 1% AEP level where appropriate, flood resilient construction materials and fittings may be considered and the developments should not impede existing flow paths or cause flood risk impacts to the surrounding areas. It also may be necessary to develop emergency evacuation plans and defined access / egress routes for extreme flood events. SSFRAs should also examine climate change impacts as parts of the town are susceptible to increases in flood extents for climate change scenarios. Any SSFRAs should also be cognisant of the proposed Athy Flood Relief Scheme which identified proposed flood defences along the River Barrow and Moneen River to protect against the 1% AEP event. Any significant regeneration of the town centre should include an assessment of the impacts of the proposed flood defences from the FRMP.

9.3 Flood Management Policies and Objectives

The Kildare County Development Plan 2017-2023 outlines surface water and flooding flood risk management policies and objectives for the entire county. The Athy Local Area 2019 -2023 will implement these policies to ensure flood risk and surface water management is considered during the planning process for development within the LAP boundary. The Athy LAP will also implement specific local policies and objectives which have also been adopted from the existing LAP and updated based on the information provided in the SFRA process and are shown in **Table 8-1**. KCC have committed to supporting and co-operating with the OPW in delivering the recommendations from the River Barrow FRMP for Athy. KCC will also work in conjunction with the OPW to deliver the proposed flood alleviation works. This scheme will provide protection to existing residential and commercial properties at risk from fluvial flooding to 1% AEP event standard of protection.

KCC will implement the proposed flood risk management objectives for specific areas, ensuring planning applications, where applicable, will require an FRA of appropriate detail. 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 must demonstrate that appropriate mitigation and management measures are put in

place. For any development in flood risk areas that meet the Development Plan Justification Test, a Development Management Justification Test must then be applied. Development must satisfy all of the criteria of the Development Management Justification Test.

9.4 SFRA Review and Monitoring

The Athy SFRA will be reviewed and updated every six years in line with the Kildare Planning Authority's review process. Additionally, outputs from future studies and datasets may trigger a review and update of the SFRA during the lifetime of the LAP and also the Kildare County Development Plan. These include the outputs from the proposed Athy flood relief scheme or any updates to the River Barrow FRMP if they completed during the lifetime of the LAP. 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 SFRAs.

Appendix A

Fluvial Flood Zone Mapping

Client: Comhairle Contae Chill Dara, Kildare County Council

Project: Athy LAP 2021 - 2027

Title: Athy LAP Flood Zone Map

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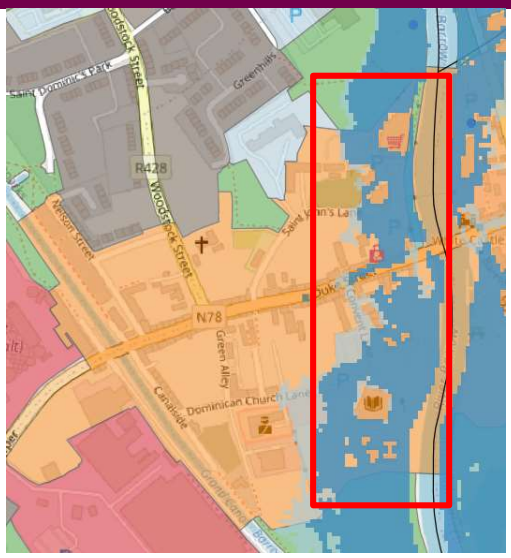
Issue Details

Drawn:	BT	**Project:**	MDW0873
Checked:	AC	**File Ref:**	MDW0873QG0003
Approved:	AC		
Scale:	NTS	**Projection:**	IRENET95 / ITM
Date:	15/12/2020		

Appendix B

Justification Tests

1	Athy Local Area Plan 2021-2027	Town Centre - west Bank (Saint John's Lane, Duke Street, Covent Lane)



1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Town Centre & Existing Residential. Lands are in located within and adjoining the town centre, zoning is required to maintain the proper planning and development of Athy.
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	No, as lands are already developed and are in primarily Town Centre/residential use.
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	No, as lands in the are already developed through historic town centre expansion.
	(v) There are no suitable alternative lands for the particular use or development type, in areas at	Having regard to the developed nature of lands it is considered reasonable to retain the use subject to a stipulation that any development within the areas of the

	lower risk of flooding within or adjoining the core of the urban settlement.	flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment	The flood mapping indicates that parts of the mixed-use town centre fall within Flood Zone A and Flood Zone B. The flood zones show residential and commercial properties within the inundated B on both sides of the N78. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zoning. And any future development in the town centre should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Bedrooms should be located in the upstairs of two-story buildings where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. The River Barrow FRMP has proposed flood defence works which would protect the town centre against the 1% AEP event. Any SSFRAs should be cognisant of the identified proposed flood defences. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan.

2	Athy Local Area Plan 2021-2027	Tegral lands

1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Q Enterprise & Employment. Flood Risk identified on a minimal portion to the south east of the existing overall industrial complex.
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Existing development
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands

	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Lands already developed
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 flood mapping indicates that part of the zoning falls within Flood Zone A and Flood Zone B. The existing site for the Tegral plant does not have any fluvial flood risk but any expansion into this greenspace should be cognisant of flood risk KCC carried out Justification Test and found that it is considered appropriate to retain the existing zoning but any future expansion of the plant should be subject to a SSFRA. SSFRAs 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 or elements critical to the operational capacity of the plant shall not be permitted in Flood Zone A or B, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan.

3	Athy Local Area Plan 2021-2027	Corran Ard Housing Development

1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Existing Residential Flood Risk identified on areas of public open space & roadways of the existing housing development.
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Existing development
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Lands already developed

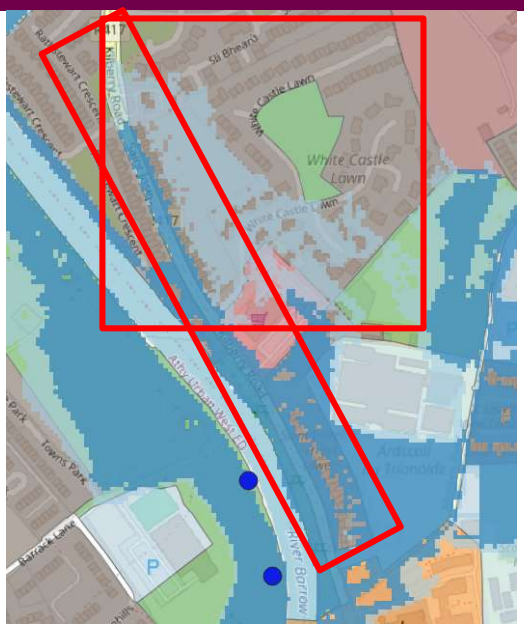
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands 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 flood mapping indicates that part of the existing residential areas fall within Flood Zone A and Flood Zone B. The extents are predominantly contained within the road network. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zonings. And any future development should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Bedrooms should be located in the upstairs of two-story buildings where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan.

4	Athy Local Area Plan 2021-2027	Rowing Club/ Rathstewart Crescent

1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
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:	Existing development
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Yes, comprises significant previously developed lands
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, is within the established designated urban settlement
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Lands already developed
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Existing development
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic	The flood mapping indicates that part of the existing residential zoning fall within Flood Zone A and Flood

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	Zone B. The predicted flood zones are largely contained to a rowing club building and its yard which are considering flood compatible in the Guidelines. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zonings. And any future development should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Bedrooms should be located in the upstairs of two-story buildings where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. The River Barrow FRMP has proposed flood defence works which would protect the town centre against the 1% AEP event. Any SSFRAs should be cognisant of the identified proposed flood defences. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan.

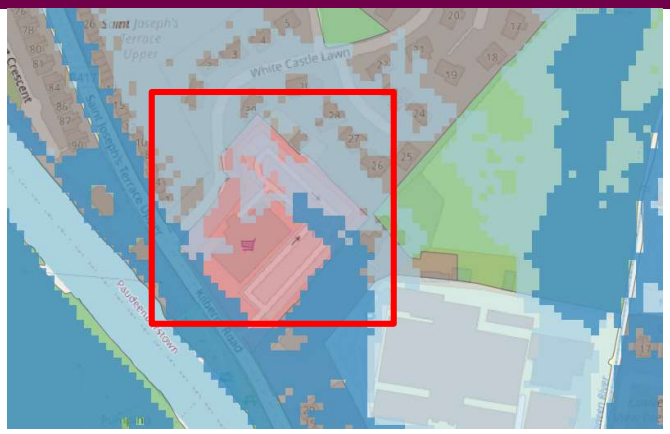
5	Athy Local Area Plan 2021-2027	Saint Joseph's Terrace, White Castle Estate



1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Existing Residential Zoning reflects the existing land use
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Existing development
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed
	(v) There are no suitable alternative lands for the particular use or development type, in areas at	Lands already developed

	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	The flood mapping indicates that areas of the existing residential zoning fall within Flood Zone A and Flood Zone B. The flood zones show residential properties along Saint Joseph's Terrace and in the Castlelawn estate inundated within Flood Zone A and B extents. The lower of Saint Joseph's Terrace is particular vulnerable. Residential properties further north on Saint Joseph's Terrace appear to be raised higher than the road and flooding is predominantly contained to the road. The Castlelawn estate is impacted by the 0.1% AEP event and would be cut off during a 1% AEP as there is only one entrance to the estate. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zonings. And any future development should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Bedrooms should be located in the upstairs of two-story buildings where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan.

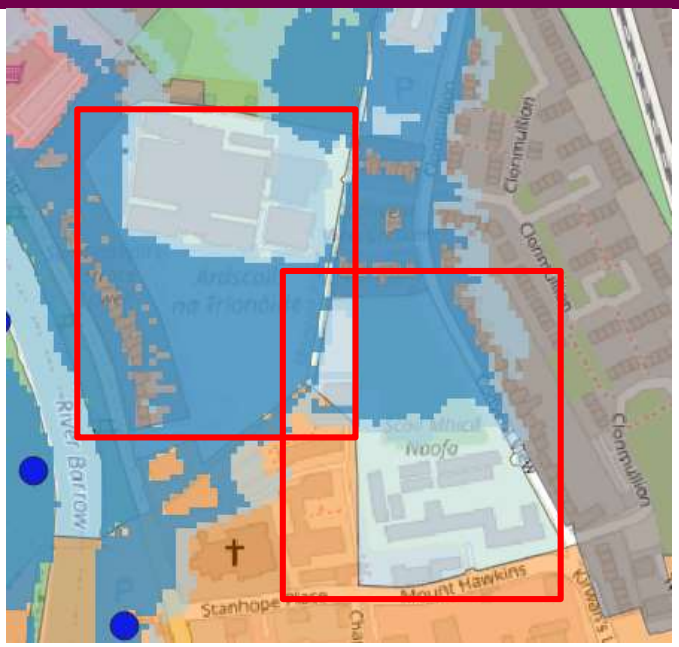
6	Athy Local Area Plan 2021-2027	Aldi Store



1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Neighbourhood Centre Zoning reflects the existing land use
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Existing development
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Lands already developed

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 flood zones show areas of the site lie within Flood Zone A and B extents. The predicted flood zones are contained within car parking areas of the site. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zoning. And any future development should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan

7	Athy Local Area Plan 2021-2027	Ardscoil Na Trinoide & Scoil Mhichil Naofa



1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Community & Educational Zoning reflects the existing & long-established land use
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Existing development
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed

(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Lands already developed
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 flood mapping indicates that large areas of the school sites fall within Flood Zone A and Flood Zone B. The worst flooding occurs in the car parks and the playing pitches. The existing educational zonings at risk of flooding will be retained but any further development shall be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events, and • Should address climate change scenarios in relation to FFLs and potential mitigation measures. The River Barrow FRMP has proposed flood defence works which would protect the schools against the 1% AEP event. Any SSFRAs should be cognisant of the identified proposed flood defences on the school site. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan.

8	Athy Local Area Plan 2021-2027	Convent View

1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Existing Residential Zoning reflects the existing & long-established land use
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Existing development
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed
	(v) There are no suitable alternative lands for the particular use or development type, in areas at	Lands already developed

	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	The flood mapping indicates that areas of the existing residential zoning fall within Flood Zone A and Flood Zone B. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zonings. And any future development should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Bedrooms should be located in the upstairs of two-story buildings where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. The River Barrow FRMP has proposed flood defence works which would protect the schools against the 1% AEP event. Any SSFRAs should be cognisant of the identified proposed flood defences on the school site. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan

9	Athy Local Area Plan 2021-2027	Clover Lodge Nursing Home

1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Community & Educational Zoning reflects the existing & long-established land use
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Existing development
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed

	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Lands already developed
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 flood zones show the site for the nursing home inundated within Flood Zone A and B extents. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zonings. And any future development should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Bedrooms should be located in the upstairs of two-story buildings where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. The River Barrow FRMP has proposed flood defence works which would protect the schools against the 1% AEP event. Any SSFRAs should be cognisant of the identified proposed flood defences on the school site. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan

10	Athy Local Area Plan 2021-2027	Town Centre – Right Bank

1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Town Centre & Existing Residential Lands are in located within and adjoining the town centre, zoning is required to maintain the proper planning and development of Athy
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	No, as lands are already developed and are in primarily Town Centre/residential use.
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	No, as lands in the are already developed through historic town centre expansion.
	(v) There are no suitable alternative lands for the particular use or development type, in areas at	Having regard to the developed nature of lands it is considered reasonable to retain the use subject to a stipulation that any development within the areas of the

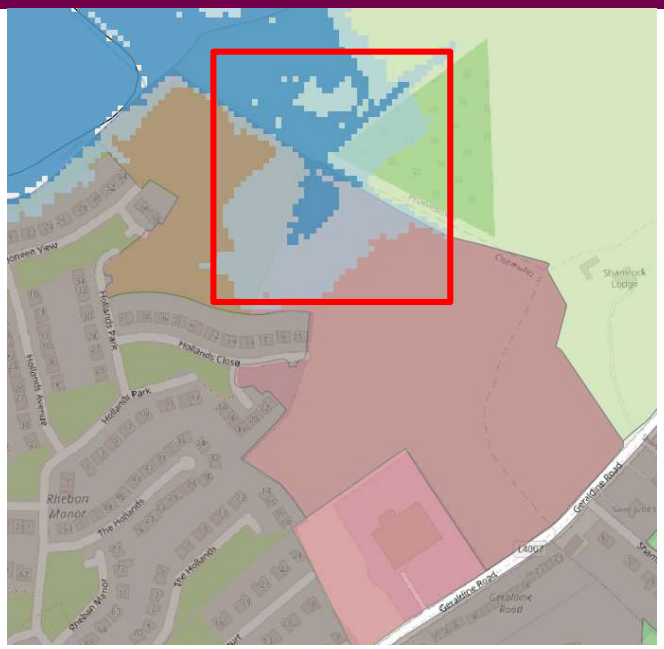
	lower risk of flooding within or adjoining the core of the urban settlement.	flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment	The flood mapping indicates that parts of the mixed-use town centre fall within Flood Zone A and Flood Zone B. The flood zones show residential and commercial properties within the inundated B on both sides of the N78. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zoning. And any future development in the town centre should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Bedrooms should be located in the upstairs of two-story buildings where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. The River Barrow FRMP has proposed flood defence works which would protect the town centre against the 1% AEP event. Any SSFRAs should be cognisant of the identified proposed flood defences. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan.

11	Athy Local Area Plan 2021-2027	Marina Court

1	The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: Existing Residential Zoning reflects the existing & long-established land use
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Existing development
	(ii) Comprises significant previously developed and/or underutilized lands,	Yes, comprises significant previously developed lands
	(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
	(iv) Will be essential in achieving compact and sustainable urban growth, and	Lands already developed
	(v) There are no suitable alternative lands for the particular use or development type, in areas at	Lands already developed

	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	The flood zones show limited flooding to the carparking and greenspaces of the residential property. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zonings. And any future development should be subject to a SSFRA. SSFRAs 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, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% or 1% AEP level where appropriate, • Bedrooms should be located in the upstairs of two-story buildings where appropriate, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. The River Barrow FRMP has proposed flood defence works which would protect the schools against the 1% AEP event. Any SSFRAs should be cognisant of the identified proposed flood defences on the school site. Any development shall also be required to be built in accordance with SuDS principles and in compliance with the surface water and drainage policies of the Athy LAP and Kildare County Development Plan

12	Athy Local Area Plan 2021-2027	Geraldine Road



1 The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 (now superseded by the Regional Spatial Economic Strategy for the Eastern Midlands Region 2019- 2031) set out the planned direction for growth within the Greater Dublin Area up to 2022 (2031) by giving regional effect to national planning policy under the National Spatial Strategy (NSS) (now superseded by Project Ireland 2040; the National Planning Framework & its Implementation Roadmap) County Development Plan or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	The town of Athy is designated as a Self-sustaining Growth Town under Variation No.1 of the Kildare County Development Plan 2017-2023. This is the second highest level within the settlement hierarchy of the county. Census 2016 recorded Athy to have a population of 9,677 persons. The population of the town was relatively unchanged from Census 2011. However, this period of stagnation in the town's growth followed a prolonged period of rapid population growth in the late 1990s and 2000s, which was not accompanied by a similar increase in employment. In this regard the Plan seeks to deliver a framework for development where the projected population growth is accompanied by targeted investment to improve local services and employment opportunities, in order for Athy to function as a more self-sustaining settlement.
2 The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land Zoned: New Residential These lands are the subject of a number of extant permissions (Pl Ref 17/751, 18/921, 19/233 & 19/234) where Site Specific Flood Risk Assessments were carried out to inform, the development management/decision making process. These assessments were prepared using the most up to date CFRAMS flooding data available at that time. The lands which were identified as being at risk of flooding (i.e. 1:100 year and 1:1000 year) are designated as public open space for the development.

(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement,	Yes
(ii) Comprises significant previously developed and/or underutilized lands,	Lands are contiguous to built-up area
(iii) Is within or adjoining the core of an established or designated urban settlement,	Yes, is within the established designated urban settlement
(iv) Will be essential in achieving compact and sustainable urban growth, and	Yes. Most suitable & sequential site for new housing
(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	No
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 flood zones show a large extent for the 1% AEP and 0.1% AEP events within the site. The updated modelling for this site shows an increase in extents for both the 1% AEP and 0.1% AEP events over the CFRAM modelling. There is an increase in flood height and volume on the site. KCC carried out Justification Test and found that it is considered appropriate to retain the existing zonings. These lands are the subject of a number of extant permissions (Pl Ref 17/751, 18/921, 19/233 & 19/234) where Site Specific Flood Risk Assessments were carried out to inform, the development management/decision making process. These assessments were prepared using the most up to date CFRAMS flooding data available at that time. The lands which were identified as being at risk of flooding (i.e. 1:100 year and 1:1000 year) are designated as public open space for the development and they also form part of the attenuation area for the development. It is of importance to note that the applications outlined above were accompanied by a SSFRA prepared by independent consultants. The most recent OPW CFRAMS data (2016) indicated that part of the subject site experiences the 1 in 1000 year (0.1% AEP) fluvial event. The SSFRA recommended mitigation measures to address flood risk including inter alia ensuring that the proposed finished ground levels are at least 0.15 above the 0.1% flood level, i.e. 55.78m OD and finished floor levels at least 0.3m above at 55.93mOD which was considered acceptable. The development is being constructed in three phases. Phase 1 is not located within the predicted flood extents; however areas of Phase 2 and Phase 3 are located in Flood Zones A and B. It is recommended that KCC engage with the developer and their engineers to undertake a flood

	risk review of the flood storage volumes and flood extents for this development in light of the most up to date flood risk information to ensure that the development is constructed safely and Phases 2 and 3 are not at risk. The flood risk review should address the following: • Application o the sequential approach to 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, • Finished floor levels should be above the 0.1% AEP level, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. • A review of the flood storage volumes within the designated attenuation areas • A review of compensatory storage for potential loss of floodplain

Legend

- Flood Zone A - 1% AEP Flood Event (1 in 100 chance in any given year)
- Flood Zone B - 1% AEP Flood Event (1 in 1000 chance in any given year)
- Watercourses
- LAP Boundary
- County Boundary

Client: Comhairle Contae Chill Dara, Kildare County Council

Project: **Athy LAP 2021 - 2027**

Title

Athy LAP Flood Zone Map

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Issue Details

Drawn:	BT	**Project:**	MDW0873
Checked:	AC	**File Ref:**	MDW0873QG0003
Approved:	AC		
Scale:	NTS	**Projection:**	IRENET95 / ITM
Date:	15/12/2020		