TOBIN

Longford County Council
Longford Town Local Area Plan
Strategic Flood Risk Assessment

BUILT ON KNOWLEDGE

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ABBREVIATIONS

AEP – Annual Exceedance Probability

CC – Climate Change

CDP – County Development Plan

CFRAM - Catchment Flood Risk Assessment and Management

CPO – County Policy Objective

DEHLG - Department of the Environment, Heritage and Local Government

DMS – Development Management Standard

EPA – Environmental Protection Agency

FRA – Flood Risk Assessment

FRMP – Flood Risk Management Plan

GDSDS – Greater Dublin Strategic Drainage Study

GSI – Geological Survey Ireland

HEFS – High-End Future Scenario

IUDMPs – Integrated Urban Drainage Management Plans

LAP – Local Area Plan

MP – Master Planning

MRFS – Mid-Range Future Scenario

NHB - National Heritage and Biodiversity

NPF – National Planning Framework

OP – Occupancy Permit

OPW – Office of Public Works

PFRA – Preliminary Flood Risk Assessment

PSFRM – Planning System and Flood Risk Management

RBMP – River Basin Management Plans

RFRA – Regional Flood Risk Appraisal

RSES – Regional Spatial and Economic Strategy

SFRA – Strategic Flood Risk Assessment

SuDS – Sustainable Drainage Systems

1. INTRODUCTION

1.1 PURPOSE OF REPORT

Longford County Council is reviewing the Longford Town Development Plan 2016-2022 (as varied) and preparing a new Longford Town Local Area Plan (LAP) 2024-2030.

The purpose of this report is to outline the findings of the Strategic Flood Risk Assessment (SFRA) for the Longford Town LAP 2024-2030.

This SFRA will provide an overall assessment of significant flood risk within Longford Town to inform strategic land-use planning decisions.

The SFRA was prepared and informed by the Department of the Environment, Heritage and Local Government (DEHLG) Guidelines for Planning Authorities (DEHLG and the Office of Public Works (OPW), 2009) on The Planning System and Flood Risk Management and Technical Appendices, (including Planning Circular PL2/2014). These Guidelines were issued under Section 28 of the Planning and Development Act 2000 as amended and require Planning Authorities to introduce flood risk assessment as an integral and leading element of their Development Planning functions. It sets out that Development Plans and local area plans, must establish the flood risk assessment requirements for their functional area.

1.2 DISCLAIMER

It is important to note that compliance with the requirements of the Flood Risk Management Guidelines is currently based on emerging and best available data at the time of preparing the assessment, including Flood Risk Management Plans, which will be updated on a cyclical basis.

Following adoption of the Plan, information in relation to flood risk may be altered in light of future data and analysis or future flood events. As a result, all landowners and developers are advised that Longford County Council and their agents can accept no responsibility for losses or damages arising due to assessments of the vulnerability to flooding of lands, uses and developments. Owners, users and developers are advised to take all reasonable measures to assess the vulnerability to flooding of lands and buildings in which they have an interest prior to making planning or development decisions.

Any future SFRAs for the area will integrate other new and emerging data.

1.3 PLANNING POLICY

1.3.1 Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009

The Planning System and Flood Risk Management (PSFRM) Guidelines for Planning Authorities and Technical Appendices, 2009, were issued under Section 28 of the Planning and Development Act 2000 as amended and require Planning Authorities to introduce flood risk assessment as an integral and leading element of their Development Planning functions. It sets out that Development Plans and local area plans, must establish the flood risk assessment requirements for their functional area. The policies and objectives for flood risk management in areas at risk of flooding must have been developed with regard to The Planning System and

Flood Risk Management Guidelines for Planning Authorities and Technical Appendices both dated November 2009.

The Guidelines require the planning system at national, regional and local levels to:

- Avoid developments in areas at (significant) risk of flooding, particularly floodplains, unless there are proven wider sustainability grounds that justify appropriate development and where the flood risk can be reduced or managed to an acceptable level without increasing flood risk elsewhere.
- Adopt a sequential approach to flood risk management when assessing the location for new development based on avoidance, reduction and mitigation of flood risk.
- Incorporate flood risk assessment into the process of making decisions on planning applications and planning appeals.

In addition to the Planning Guidelines, Circular PL 2/2014 provides further advice and detail to Planning Authorities on older developed areas of towns and cities located in Flood Zone A and B, and also guidance on the development of Flood Zones and use of indicative flood risk data.

1.3.2 National Policy Objectives

Table 1 in section 2.2 of the written statement sets out national policy objectives relevant to the plan. In this context it may be appropriate to include national policy objective NPO57 which is to:

- Enhance water quality and resource management by:
- Ensuring flood risk management informs place-making by avoiding inappropriate development in areas at risk of flooding in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities;
- Ensuring that River Basin Management Plan objectives are fully considered throughout the physical planning process; Integrating sustainable water management solutions, such as Sustainable Urban Drainage (SUDS), nonporous surfacing and green roofs, to create safe places.

1.3.3 Regional Spatial and Economic Strategy for the Eastern and Midland Region (2019-2031)

As part of the preparation of the Regional Assembly Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region, a Regional Flood Risk Assessment was undertaken so that the high-level impact of the proposed Policy Objectives on the environment could be evaluated and used to inform the direction of the RSES.

The Regional Flood Risk Appraisal (RFRA) was prepared as part of the Strategic Environmental Assessment of the Eastern and Midland Regional Spatial and Economic Strategy (RSES) in accordance with national and EU legislation. This RFRA was prepared by considering the requirements of The Planning System 3 and Flood Risk Assessment Guidelines for Planning Authorities (2009) and Circular PL02/2014 (August 2014).

The RFRA was based on the previous SFRA prepared for Longford Town as part of the Longford Town Development Plan 2016-2022.

1.3.4 Longford County Development Plan 2021-2027

The Longford County Development Plan (CDP) 2021 – 2027 gives 15 county policy objectives with regards to flood risk management. The objectives are found in Chapter 5 Transport, Infrastructure, Energy and Communications under "Flood Risk Management" Section 5.5.1. The CDP states that it is the County Policy Objective (CPO) to:

CPO 5.106

Support the implementation of recommendations in the CFRAM Programme to ensure that flood risk management policies and infrastructure are progressively implemented.

CPO 5.107

Support the implementation of recommendations in the Flood Risk Management Plans (FRMP's), including planned investment measures for managing and reducing flood risk.

CPO 5.108

Support, in co-operation with the OPW, the implementation of the EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No. 122 of 2010) and the DEHLG/OPW publication The Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) and Departmental Circular PL2/2014 (or any updated/superseding versions). This will include the following:

- Avoid, reduce and/or mitigate, as appropriate in accordance with the Guidelines, the risk of flooding within the flood risk areas indicated in the accompanying Strategic Flood Risk Assessment report, including fluvial, pluvial and groundwater flooding, and any other flood risk areas that may be identified during the period of the plan or in relation to a planning application.
- Development proposals in areas where there is an identified or potential risk of flooding or that could give rise to a risk of flooding elsewhere will be required to carry out a site-specific Flood Risk Assessment, and Justification Test where appropriate, in accordance with the provisions of The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009, (or any superseding document) and Circular PL2/2014 (as updated/superseded). Any flood risk assessment should include an assessment of the potential impacts of climate change, such as an increase in the extent or probability of flooding, and any associated measures necessary to address these impacts.
- Development that would be subject to an inappropriate risk of flooding or that would cause or exacerbate such a risk at other locations shall not normally be permitted.
- Where certain measures proposed to mitigate or manage the risk of flooding associated with new developments are likely to result in significant effects to the environment or

European sites downstream, such measures will undergo environmental assessment and Appropriate Assessment, as appropriate.

The Council shall work with other bodies and organisations, as appropriate, to help protect critical infrastructure, including water and wastewater, within the County, from risk of flooding. Future amendments to the plan shall consider, as appropriate any new and/or emerging data, including, when available, any relevant information contained in the CFRAM's Flood Risk Management Plans and as recommended in the SFRA for the Plan.

CPO 5.109

Protect Flood Zone A and Flood Zone B from inappropriate development and direct developments/ land uses into the appropriate Flood Zone in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (or any superseding document) and the guidance contained in DMS 16.205. Where a development/land use is proposed that is inappropriate within the Flood Zone, then the development proposal will need to be accompanied by a Development Management Justification Test and site-specific Flood Risk Assessment in accordance with the criteria set out under with The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 and Circular PL2/2014 (as updated/ superseded). In Flood Zone C, (Please also refer to Development Management Standard, , DMS 16.205, where the probability of flooding is low (less than 0.1%, Flood Zone C), site-specific Flood Risk Assessment may be required the developer should satisfy themselves that the probability of flooding is appropriate to the development being proposed. The County Plan SFRA datasets and the most up to date CFRAM Programme climate scenario mapping should be consulted by prospective applicants for developments in this regard and will be made available to lower-tier Development Management processes in the Council.

Flood Zone maps should not be used to suggest that any areas are free from flood risk as they do not include groundwater or artificial drainage system flood risk.

Applications for development on land identified as Benefitting Land (under Arterial Drainage Schemes /Drainage Districts) may be prone to flooding, and as such site-specific flood risk assessments may be required in these areas. The Council will ensure that new developments proposed in Arterial Drainage Schemes and Drainage Districts do not result in a significant negative impact on the integrity, function and management of these areas.

CPO 5.110

Site-specific Flood Risk Assessment (FRA) is required for all planning applications in areas at risk of flooding (fluvial, pluvial or groundwater), even for developments appropriate to the particular Flood Zone. The detail of these site-specific FRAs will depend on the level of risk and scale of development. A detailed site-specific FRA should quantify the risks, the effects of selected mitigation and the management of any residual risks. The assessments shall consider and provide information on the implications of climate change with regard to flood risk in relevant locations. The Draft Guidance on Assessment of Potential Future Scenarios for Flood Risk Management (OPW, 2009), (or any superseding document) and available information from the CFRAM Studies shall be consulted with to this effect.

CPO 5.111

Require all applications in areas prone to flooding to be subject to the Justification Test set out in the Planning System and Flood Risk Management Guidelines for Planning Authorities.

Compensatory flood storage provision or the provision of flood defences will not override the need for completion of the justification test.

CPO 5.112

Consult with the OPW in relation to proposed developments in the vicinity of drainage channels and rivers for which the OPW are responsible, and to retain a strip on either side of such channels where required, to facilitate maintenance access thereto.

CPO 5.113

Actively work with the CFRAM Programmes and catchment-based Flood Planning Groups, including where catchments go beyond the Council's administrative boundary, in the development and implementation of catchment-based strategies for the management of flood risk - including those relating to storage and conveyance.

CPO 5.114

Protect the integrity of any formal (OPW or Longford County Council) flood risk management infrastructure, thereby ensuring that any new development does not negatively impact any existing defence infrastructure or compromise any proposed new infrastructure.

CPO 5.115

Ensure that the reasonable requirements of Inland Fisheries Ireland are adhered to in the construction of flood alleviation measures in the county.

CPO 5.116

Protect water bodies and watercourses within the County from inappropriate development, including rivers, streams, associated undeveloped riparian strips, wetlands and natural floodplains. This will include protection buffers in riverine and wetland areas as appropriate. In addition, promote the sustainable management and uses of water bodies and avoid culverting or realignment of these features.

CPO 5.117

Recognise the important role of peatland and other wetland areas in flooding patterns. Development in these areas shall therefore be subject to a Flood Risk Assessment in accordance with the relevant guidance.

CPO 5.118

Ensure each flood risk management activity is examined to determine actions required to embed and provide for effective climate change adaptation as set out in the OPW Climate Change Sectoral Adaptation Plan Flood Risk Management applicable at the time.

CPO 5.119

Facilitate the appropriate management and sustainable use of flood risk areas designated as 'Constrained Land Use' on Settlement Plan zoning maps. Future development on these lands is limited to minor development where plan-making Justification Tests have not been undertaken, and the Constrained Land Use applies.

SFRA datasets will be made available to the lower-tier forward planning and Development Management and associated SFRA/FRA processes in the Council. These processes may lead to the identification of areas where the Constrained Land Use Zoning provisions contained within

this Plan may apply. In this regard, prospective applicants for developments in areas that have been previously developed and are at elevated levels of flood risk are encouraged to consult with the Planning Department at the earliest opportunity. Appendix II of the SFRA that accompanies the Longford CDP includes mapping at a County level of historic (page 2) and predictive (page 3) flood risk indicators.

CPO 5.120

Ensure that applications to existing developments in flood vulnerable zones shall provide details of structural and non-structural risk management measures to include but not be limited to specifications of the following - floor levels, internal layout, flood resilient construction, flood resistant construction, emergency response planning, access and egress during flood events. (Please Refer to CPO 5.119 and DMS 16.206).

1.3.5 Longford Town Local Area Plan 2025 – 2031

The Longford Town Local Area Plan (LAP) 2025 – 2031 has further objectives with regards to flood risk management. The objectives are under the headings; Master Planning (MP), National Heritage and Biodiversity (NHB), Surface Water (SW), Flood Risk Management (FR), and Climate Change (CC). The LAP states that it is an objective of the council to:

NHB 09

Ensure the provision of appropriate Riparian strips of not less than 10 meters from the top of the bank of all watercourses to enhance biodiversity and preserve the natural flood regime of the area. The full extent of the biodiversity protection zone should be determined on a case-by-case basis by the Council, based on site specific characteristics and sensitivities.

SW 02

Pursue the resolution of surface water drainage issues as required throughout the town, in conjunction with Uisce Eireann as appropriate. Changing the urban landscape to a more sustainable one that seeks to mimic the natural water balance is important for both new and existing developments.

SW 03

Require all proposed development to provide sufficient surface water drainage facilities, including attenuation and evidence of outfall suitability and capacity, and how such water is to be sufficiently treated prior to disposal in order to prevent pollution.

SW 04

Provide surface water attenuation measures where it is considered that the surface water run-off levels exceed permissible discharge rates. Storm water run-off design should be carried out in accordance with Sustainable Drainage Standards (SUDS) best operating practice.

SW 05

Minimise flood risk arising from pluvial (surface water) flooding in Longford Town by promoting the use of nature-based solutions including sustainable drainage systems (SuDS), minimising extent of hard surfaces/paving, and smart solutions such as innovative green infrastructure.

SW 06

Prohibit the discharge of surface water run-off into foul sewage systems.

SW 07

Maintain, improve and enhance the environmental and ecological quality of surface waters and groundwater in Longford Town in conjunction with the EPA and in accordance with the River Basin Management Plan for Ireland 2022-2027 and future cycles of this Plan.

FR 01

Support the implementation of the relevant County Policy Objectives (CPO's) contained within *Chapter 5: Transport, Infrastructure, Energy & Communications*, and other relevant chapters of the *County Longford Development Plan 2021-2027*.

FR 02

Require that development proposals within the 'Constrained Land Use' zone shall be accompanied by a detailed Flood Risk Assessment, carried out in accordance with *The Planning System and Flood Risk Assessment Guidelines* and *Circular PL 2/2014* (or as updated), which shall assess the risks of flooding associated with the proposed development, and consider the potential impacts of climate change in the application of these guidelines. Applicants should have regard to the most up-to-date Flood Mapping as presented on the Office of Public Works (OPW) maps.

FR 03

Require that developments in flood vulnerable areas comply with the requirements as set out in *the Longford County Development Plan 2021-2027* and in particular CPO 5.120 and DMS16.206.

FR 04

Demonstrate that future development will not result in increased risk of flooding elsewhere, restrict flow paths, where compensatory storage / storm water retention measures shall be provided on site.

FR 05

Ensure the protection of environmentally sensitive sites and habitats, including where flood risk management measures are planned.

CC 04

Support the implementation of Longford County Council's Climate Action Plan 2024-2029 any other subsequent Climate related documents deemed relevant by the Planning Authority such as the National Climate Action Plan 2024 (and annual revisions) and the National Adaptation Framework 2024.

CC 10

Avoid inappropriate development in flood prone lands zoned *'Constrained Land Use'.*

CC 11

Create an integrated green infrastructure network to support urban biodiversity, water retention and flood alleviation, allowing for natural and unhindered inundation during flood events.

The Longford Town Local Area Plan Consists of a written statement and accompanying appendices and maps including a land use zoning map (Figure 1-1:), The most relevant parts of the

CDP for this SFRA relate to the land use zoning map and provisions relating to flood risk management (recommendations with respect to these, which have been integrated into the CDP by the Council, are provided under Section 4).

GI01

Protect, enhance and further develop the Green Infrastructure network in Longford town to provide a shared space for amenity, recreation and biodiversity to thrive and to strengthen links to the wider regional network. This should be informed by ecological surveys and assessment: *which will inform existing Green Infrastructure Strategy, the identification of further potential Green Infrastructure and associated measures over the lifetime of the Local Area Plan.*

WS 22

Seek an efficient design in new developments and retrofitting programmes through the development of water efficient developments with a reduced net water usage /water neutrality aim through rainwater harvesting and other systems.

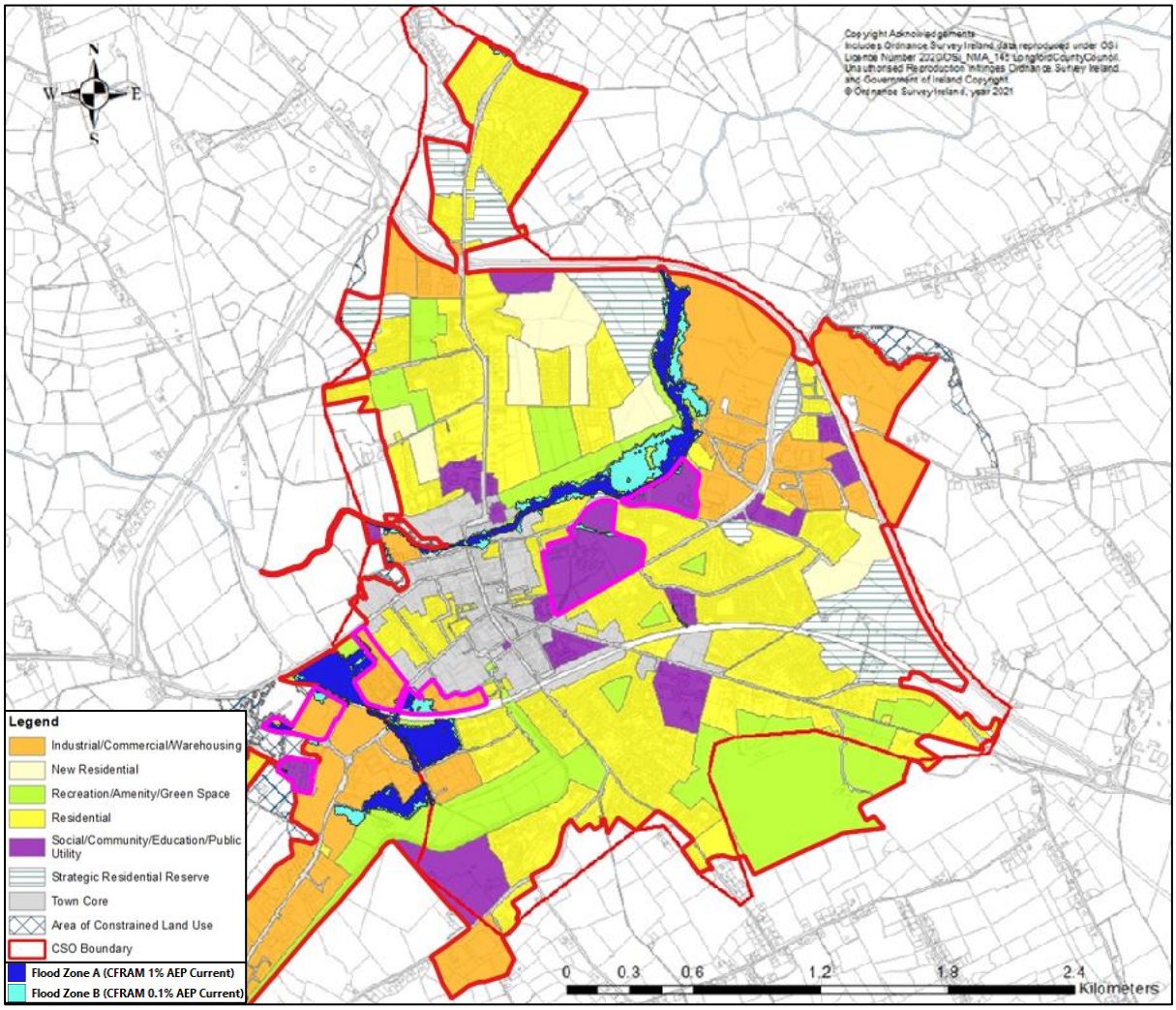


Figure 1-1: Longford Town Zoning map with Flood Zones, Excerpt from Longford County Development Plan 2021 – 2027

To show the effects of climate change on Longford Town, The Mid-Range Future Scenario (MRFS) and High-End Future Scenario (HEFS) events can be seen overlayed on the Longford Town zoning map in Figure 1-2 & Figure 1-3 below. The MRFS includes a 20% increase in flows, whereas the HEFS includes a 30% increase in flows.

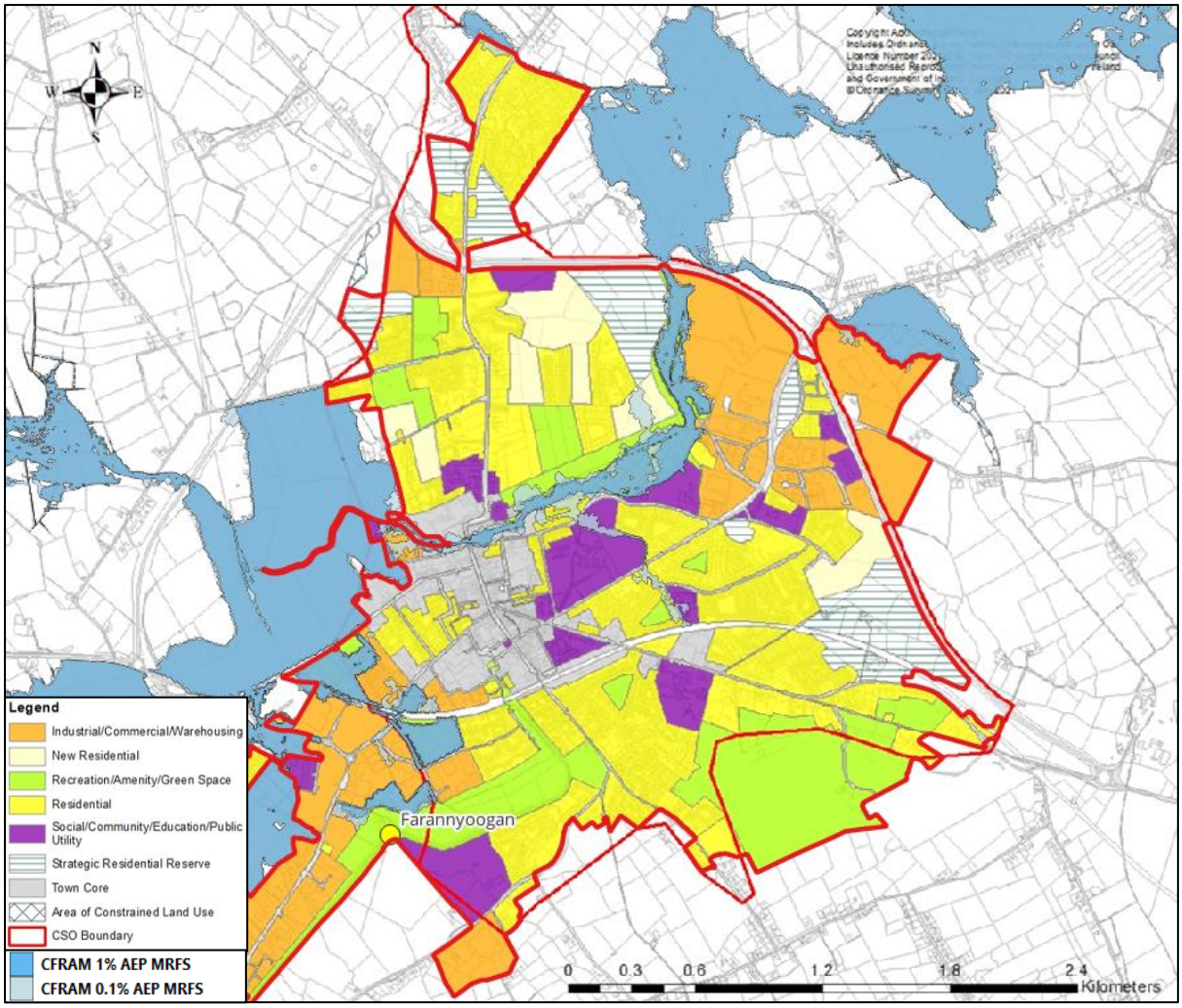


Figure 1-2 Longford Town Zoning map with CFRAM MRFS Flood Extents, Excerpt from Longford County Development Plan 2021 – 2027

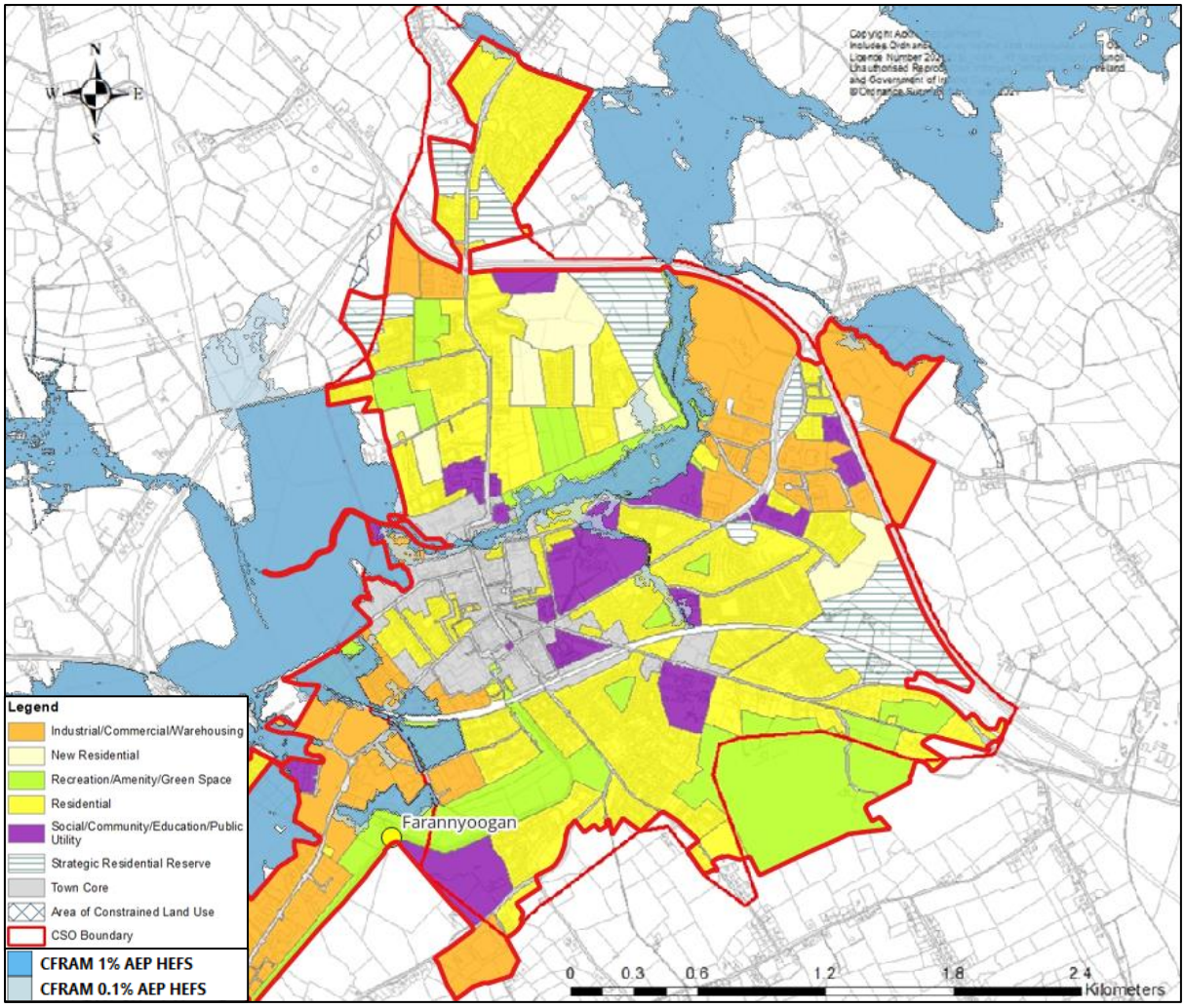


Figure 1-3: Longford Town Zoning map with CFRAM HEFS Flood Extents, Excerpt from Longford County Development Plan 2021 – 2027

1.3.6 River Basin Management Plan 2022 – 2027

European Union Member States implement the Water Framework Directive through River Basin Management Plans (RBMPs) in six-year cycles. This process allows for assessment, planning, implementation, and review at regular intervals. Ireland's approach to water quality management has developed over the first and second RBMPs and will continue to evolve into the third cycle RBMP 2022 – 2027 to protect and improve water quality nationally and locally.

Uisce Eireann are required to complete six Integrated Urban Drainage Management Plans (IUDMPs) with the support of relevant Local Authority and DHLGH. Longford town has been named as one of the IUDMPs to be developed.

1.3.7 Drainage Area Plan (DAP) for Longford.

UÉ has started work on a Drainage Area Plan (DAP) for Longford. Alongside addressing the issues already identified, the DAP will investigate the underlying causes of wastewater flooding in Longford. This plan will include modelling the current sewer network, analysing further scenarios, and developing solutions to address system limitations. The project is expected to take several years to complete. The main source of fluvial risk to the town is the Camlin 26 Stream, with the Lismore 26 and Faghey Streams also posing a flood risk. The DAP will also investigate the root cause of wastewater flooding incidents at locations including the following: Lisbrack Downs. Braedens Lane, Midara Gardens, Teffia Park, Battery Road, Athlone Road, and Lower Main Street.

The DAP will model the existing sewer network, future scenarios and develop solutions to resolve constraints. This will take a number of years to complete. As there is no upgrade project for Longford Town on UÉ's current Capital Investment Plan, the necessary wastewater infrastructure upgrades required to resolve certain constraints may not be completed within the lifespan of this Local Area Plan.

1.3.8 Longford Town Flood Relief Scheme

The Longford Town Flood Relief scheme currently being progressed by Longford County Council is referenced in section 9.3 of the written statement with respect to regeneration opportunities. Policy objectives included in the county development plan such as CPO 5.106, CPO 5.107, and CPO 5.114 will provide support to the development of this scheme.

A flood relief scheme, as outlined in the Planning System and Flood Risk Management (PSFRM) guidelines, must be designed to a specific standard of protection, typically aiming for a 1% Annual Exceedance Probability (AEP) for fluvial flooding. Additionally, the scheme must undergo comprehensive environmental assessments to evaluate its potential impacts on local ecosystems, water quality, and habitats. These assessments include Environmental Impact Assessments (EIA) and Appropriate Assessments (AA) under the Habitats Directive. The scheme should also incorporate Sustainable Drainage Systems (SuDS) to manage surface water sustainably and enhance the resilience of the area. Climate change considerations are crucial, as the scheme must account for potential increases in flood frequency and intensity, ensuring long-term effectiveness. Public consultation and stakeholder engagement are crucial throughout the planning and implementation phases to ensure community support and address any concerns.

The preliminary options report for the Shannon CFRAM[1] identified two AFA flood cells: LOD_A, with 13 residential properties at risk, and LOD_B, with 1 residential and 3 non-residential properties at risk. Six structural and four non-structural options were assessed. Among the structural options, flood defences and increased conveyance were deemed the most viable. All non-structural options, including flood forecasting/warning/response, public awareness, individual property resistance, and individual property resilience, were considered viable but were not included in the final option.

The final and most cost-beneficial was selected, which aims to provide a 1% Fluvial Annual Exceedance Probability (AEP) Design standard to all properties within the Area for Further Assessment (AFA) identified as being at risk. This option involves constructing flood defences as detailed in Figure 1-4 and removing the existing footbridge on the Camlin River upstream of the N63 bridge, as shown in Figure 1-4. The benefit-cost ratio (BCR) for this option is 3.11. It is expected that the proposed option will not increase the flood risk elsewhere.

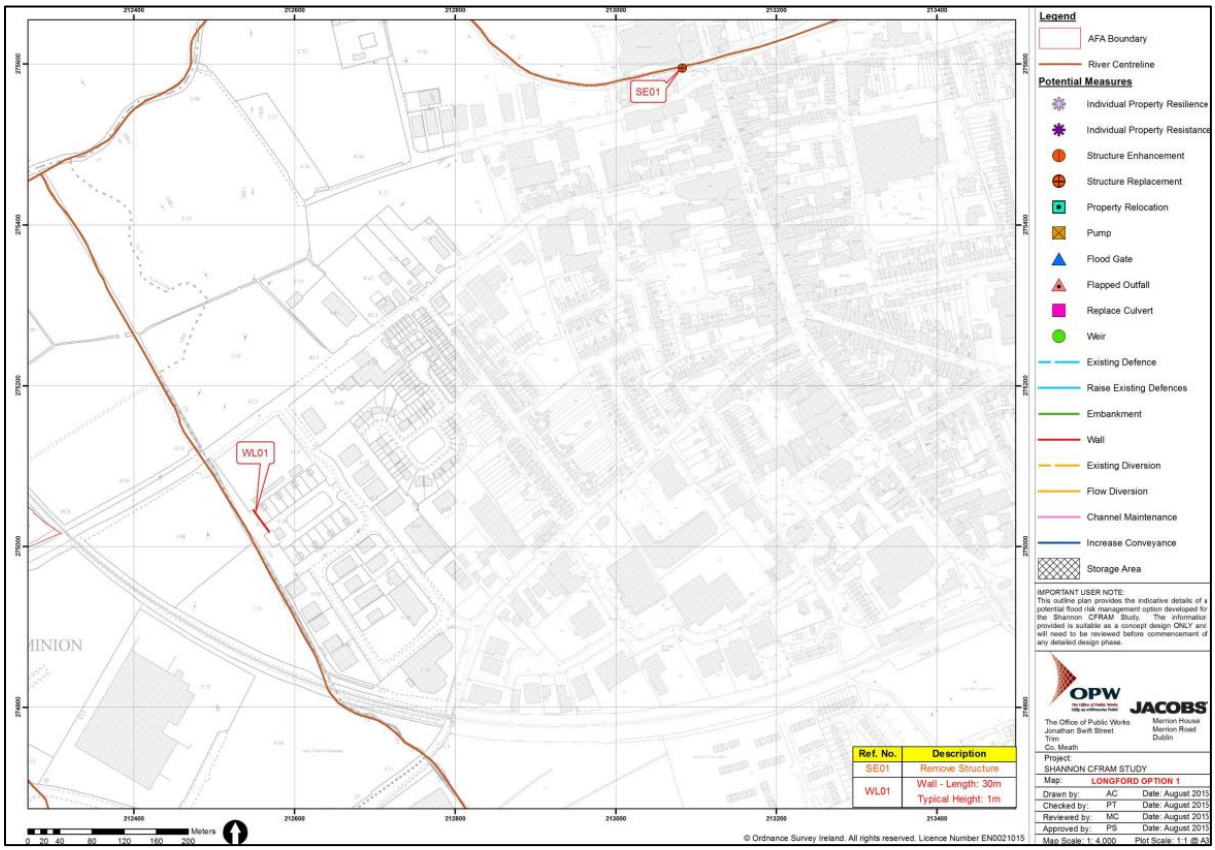


Figure 1-4: Preliminary Options Report – Chosen Option

1.4 FLOOD RISK

Flooding is a natural occurrence that cannot be completely avoided, it can usually be controlled to reduce its negative social and economic effects and to ensure that infrastructure and services continue to operate. Climate change is expected to exacerbate the issue in regions that are vulnerable to sporadic flooding.

[1] https://s3-eu-west-1.amazonaws.com/docs.floodinfo.opw/floodinfo_docs/Shannon_CFRAM/UOM2526/06_PreliminaryOptions/PRJ_POR_0417_V2_0_JAC_PreOptRpt_UOM2526.pdf

The Planning System and Flood Risk Management: Guidelines for Planning Authorities, published in November 2009, describe flooding as a natural process that can occur at any time and in a wide variety of locations. Flooding can often be beneficial, and many habitats rely on periodic inundation. However, when flooding interacts with human development, it can threaten people, their property and the environment.

This section will outline the definition of flood risk.

1.4.1 Definition of Flood Risk

Flood risk is generally defined as the combination of the likelihood of the flooding and the potential consequences from it. Flood risk is expressed as the following:

Flood Risk = Probability x Consequences of Flooding

The assessment of flood risk requires an understanding of the flooding mechanism, the flow path and the nature of the area affected. The source – pathway – receptor model, shown in Figure 1-5 below, outlines this relationship and is used to assess and inform the management of flood risk.

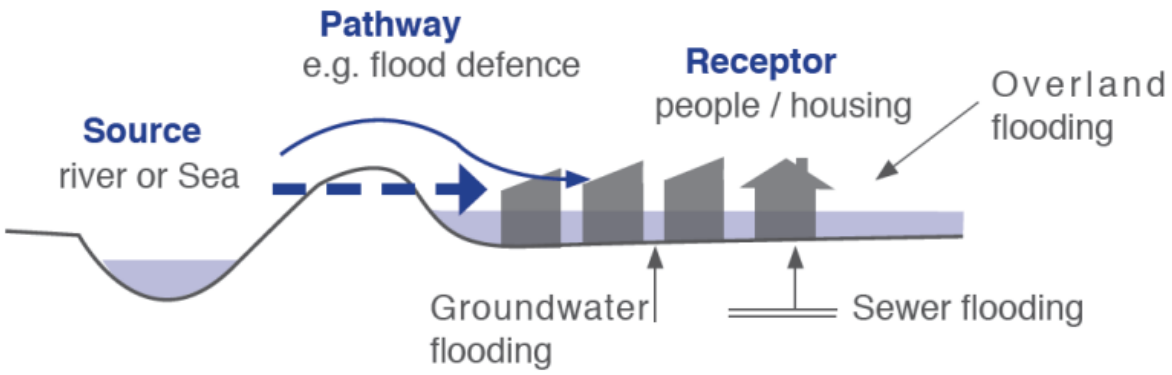


Figure 1-5: Source Pathway Receptor Model[2]

The main causes of flooding are rainfall or sea levels that are higher than usual, and the most typical routes include rivers, drains, sewers, overland flow, and coastal and river floodplains, along with associated defence features. Receptors might be the environment, other people, and their possessions. For there to be a flood risk, all three conditions must be met. Although mitigation methods, like defences or construction that is resilient to flooding, can obstruct or slow channels or eliminate receptors, they have little to no influence on the origins of floods. Receptor site is the main focus of the planning procedure, which appropriately considers various sources and paths that could jeopardise those receptors.

1.4.2 Likelihood of Flooding

Likelihood or probability of flooding of a particular flood event is classified by its annual exceedance probability (AEP) or return period (in years). A 1% AEP flood indicates the flood event that will occur or be exceeded on average once every 100 years and has a 1 in 100 chance of occurring in any given year.

[2] Figure A1 The Planning System and Flood Risk Management Guidelines Technical Appendices

Table 1-1 indicates the typical probabilities associated with flood events.

Table 1-1: Probability of Flooding

Return Period (Years)	Annual Exceedance Probability (%)
2	50
10	10
100	1
200	0.5
1000	0.1

1.4.3 Consequences of Flooding

Consequences of flooding depend on the hazards caused by flooding and the vulnerability of receptors.

The Planning System and Flood Risk Management guidelines provide three vulnerability categories, based on the type of development, which are detailed in Table 3.1 of the Guidelines, and are summarised as:

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

1.5 Definition of Flood Zones

In the Planning System and Flood Risk Management guidelines, Flood Zones are used to indicate the likelihood of a flood occurring. These Zones indicate a high, moderate or low probability of flooding from fluvial or tidal sources and are defined in Table 1-2 below.

Flood Zones are based on the current day scenario and do not take into account the presence of flood defences. This is due to the residual risk associated with overtopping or breaching of the defences. In addition to this there is no guarantee that the defences are being maintained.

Table 1-2: Definition of Flood Zones

Zone	Description
Zone A High probability of flooding	This zone defines areas with the highest risk of flooding from rivers (i.e. more than 1% probability or more than 1 in 100) and the coast (i.e. more than 0.5% probability or more than 1 in 200).
Zone B Moderate probability of flooding	This zone defines areas with a moderate risk of flooding from rivers (i.e. 0.1% to 1% probability or between 1 in 100 and 1 in

	1000) and the coast (i.e. 0.1% to 0.5% probability or between 1 in 200 and 1 in 1000).
Zone C Low probability of flooding	This zone defines areas with a low risk of flooding from rivers and the coast (i.e. less than 0.1% probability or less than 1 in 1000).

1.6 Objectives and Principles of the Planning Guidelines

The Planning System and Flood Risk Management Guidelines outline the methodology for good flood risk practice in terms of planning and development management. Planning authorities are directed to have regard to the guidelines in the preparation of Development Plans and Local Area Plans, and for development control purposes. The objective of the Planning System and Flood Risk Management Guidelines is to integrate flood risk management into the planning process, thereby assisting in the delivery of sustainable development. In order for this to be achieved, flood risk must be assessed as early as possible in the planning process. Paragraph 1.6 of the Guidelines states that the core objectives 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 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 aim to facilitate 'the transparent consideration of flood risk at all levels of the planning process, ensuring a consistency of approach throughout the country.' SFRAs therefore become a key evidence base in meeting these objectives. The 'Planning System and Flood Risk Management' works on several key principles, including:

- adopting a staged and hierarchical approach to the assessment of flood risk;
- adopting a sequential approach to the management of flood risk, based on the frequency of flooding (identified through Flood Zones) and the vulnerability of the proposed land use.

1.7 The Sequential Approach and the Justification Test

The Guidelines outline the sequential approach that is to be applied to all levels of the planning process. This approach should be used in the design and layout of a development and follow the steps outlined in Figure 1-6 below. It is advised to avoid development in areas of high flood risk in accordance with the sequential approach. However, many urban centres within flood zones are targeted for development.

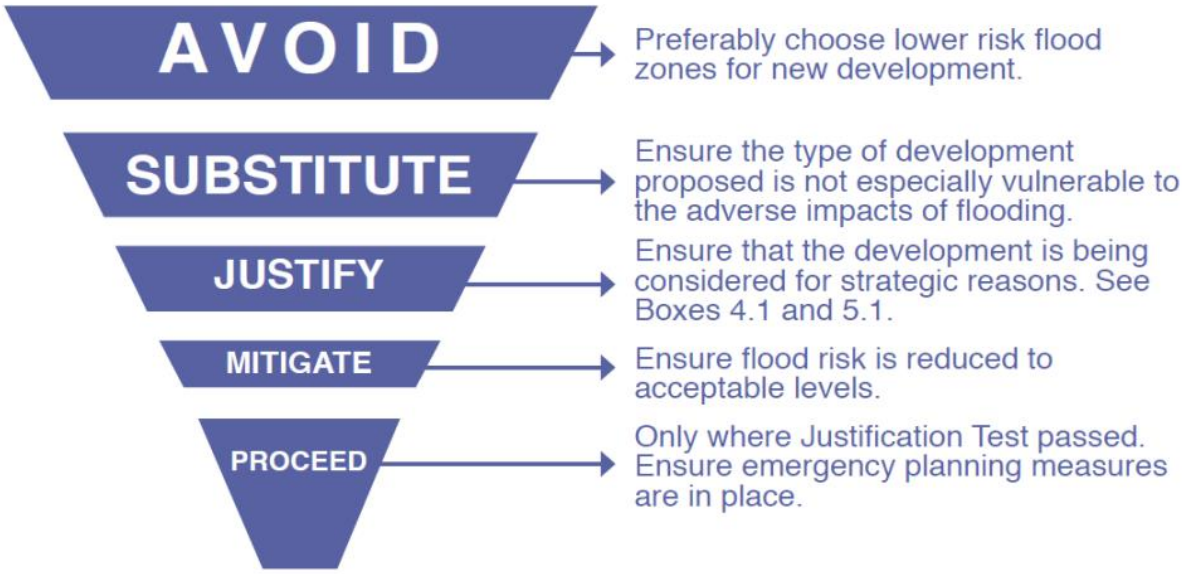


Figure 1-6: Source Pathway Receptor Model[3]

The Justification Test has been designed to rigorously assess the appropriateness, or otherwise, of such developments. The test is comprised of two processes: the Plan making Justification Test, and the Development Management Justification Test.

- Plan-making Justification Test 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.
- Development Management Justification Test 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 1-3: Vulnerability Class and Justification Test Requirement

Vulnerability Class	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

Any proposed development being considered in an inappropriate flood zone (as determined by Table 1-3) must satisfy the criteria of the Justification Test outlined in Figure 1-7 (taken from the PSFRM Guidelines). The vulnerability Classes can be found in the PSFRM Guidelines.[4]

[3] Figure 3.1 The Planning System and Flood Risk Management

[4] Table 3.1 The Planning System and Flood Risk Management

Box 5.1 Justification Test for development management (to be submitted by the applicant)

When considering proposals for development, which may be vulnerable to flooding, and that would generally be inappropriate as set out in Table 3.2, the following criteria must be satisfied:

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.

Note: See section 5.27 in relation to major development on zoned lands where sequential approach has not been applied in the operative development plan.

Refer to section 5.28 in relation to minor and infill developments.

Figure 1-7: Criteria of the Justification Test

1.8 Stages of Flood Risk Assessment

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

1. **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 local area plans or a proposed development site that may warrant further investigation at the appropriate lower-level plan or planning application levels;
2. **Stage 2** Initial flood risk assessment – to confirm sources of flooding that may affect a plan area or proposed development site, to appraise the adequacy of existing information and to scope the extent of the risk of flooding which may involve preparing indicative flood zone maps. Where hydraulic models exist the potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures can be assessed. In addition, the requirements of the detailed assessment should be scoped; and
3. **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.

1.9 The Flood Risk Management Climate Change Adaptation Plan

The Flood Risk Management Climate Change Sectoral Adaptation Plan was published in 2019 under the National Adaptation Framework and Climate Action Plan. This plan outlines the OPW's approach to climate change adaptation in terms of flood risk management.

This approach is based on a current understanding of the potential impacts of climate change on flooding and flood risk. Research has shown that climate change is likely to worsen flooding through more extreme rainfall patterns, more severe river flows, and rising mean sea levels.

To account for these changes, the Adaptation Plan presents two future flood risk scenarios to consider when assessing flood risk:

- Mid-Range Future Scenario (MRFS)
- High-End Future Scenario (HEFS)

Table 1-4 indicates the allowances that should be added to estimates for the future scenarios.

Table 1-4: Climate Change Adaptation Allowance for Future Flood Riak Scenarios

Parameter	Mid-Range Future Scenario (MRFS)	High-End Future Scenario (HEFS)
Extreme Rainfall Depths	+ 20%	+ 30%
Peak River Flood Flows	+ 20%	+ 30%
Mean Sea Level Rises	+ 500 mm	+ 1000 mm
Land Movement	-0.5 mm / year[5]	-0.5 mm / year[5]
Urbanisation	*No General Allowance – Review on Case-by-Case Basis*	*No General Allowance – Review on Case-by-Case Basis*
Forestation	-1/6 Tp[6]	-1/6 Tp[6] +10% SPR[7]

In tackling global warming, a comprehensive legislative and policy framework relating to climate action has been developed in Ireland over the past number of years. These provisions seek to ensure that climate considerations are fully integrated into spatial plans such as the Longford Local Area Plan. As per the National Planning Framework and National Strategic Outcome (NSO 8) is the need to initiate a transition to a low carbon and resilient society. The Regional Spatial and Economic Strategy for the Region includes Climate Action as one of the three key principles of the RSES. As indicated in '7.9 Climate Change' of the RSES Climate change will have diverse and wide-ranging impacts on the Eastern and Midland Region's environment, society and economic development, including managed and natural ecosystems, water resources, agriculture, food security and bioeconomy, human health and coastal zones. *Figure 7.4 Climate Strategy* of the RSES indicates the regional climate strategy and best practice approach (see Figure 1-8 below).

[5] Note: Applicable to the southern part of the country only (Dublin – Galway and south of this)

[6] Note: Reduction in the time to peak (Tp) to allow for potential accelerated runoff that may arise as a result of drainage of afforested land

[7] Note: Add 10% to the Standard Percentage Runoff (SPR) rate; This allows for temporary increased runoff rates that may arise following felling of forestry

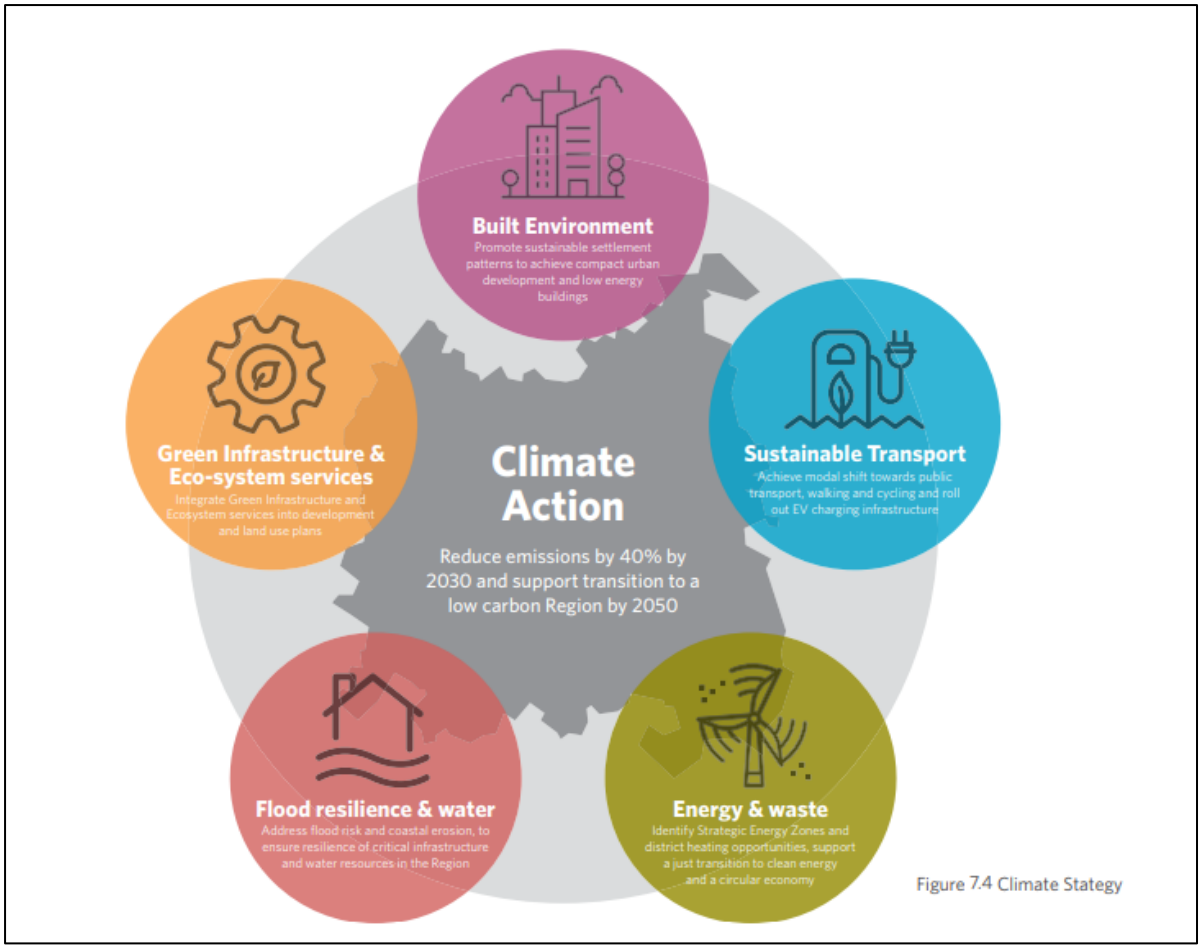


Figure 1-8: RSES Climate Strategy

Whilst the primary long-term goal is to achieve net zero emissions by 2050 (Climate Action Plan, 2019), recent policy developments reflect a widespread acceptance that climate change is happening now, and the associated impacts of same giving added urgency to the increasing emphasis of plans integrating mitigation and adaptation measures. In this regard, County Longford's Climate Adaptation Strategy 2019 has provided a critical point of reference in preparing this plan. As such climate this is therefore one of the cross-cutting principles of this Plan.

2. STAGE 1 SFRA – FLOOD RISK IDENTIFICATION

2.1 INTRODUCTION

Stage 1 SFRA (flood risk identification) was undertaken in order to identify whether there may be any flooding or surface water management issues within the town and consequently whether a Stage 2 SFRA should be proceeded to. The Stage 1 SFRA was based on existing information on flood risk indicators and involved consulting with a range as detailed under Section 2.3 below. The information provided in this section clearly identifies a potential flood risk issue within the area, therefore a Stage 2 SFRA was proceeded to.

2.2 DRAINAGE, DEFENCES AND EARLY WARNING SYSTEMS

Arterial Drainage Schemes were carried out by the Office of Public Works under the Arterial Drainage Act 1945 to improve land for agricultural purposes and to mitigate flooding. Arterial Drainage maintenance and monitoring of these schemes is still carried out by OPW on rivers, lakes, weirs, bridges, and embankments to maintain adequate conveyance and ensure that flood waters are retained in bank by lowering water levels during the growing season. As a result, reducing waterlogging on the adjacent land during wetter periods.

It is to be noted that there are restrictions on the construction, replacement or alteration of bridges and culverts over any watercourse, and that appropriate consent from the commissioners is required under Section 50 of the Arterial Drainage Act 1945.

The 2018 Flood Risk Management Plan (FRMP) for the Shannon Upper and Lower catchment identifies various general measures applicable to County Longford as part of the wider Shannon Upper and Lower catchment under “Measures applicable for all Area”. Some of the measures listed, among others, and which are further described in the FRMP are:

- Sustainable Planning and Development Management
- Sustainable Urban Drainage Systems (SUDS)
- Adaptation Planning
- Land Use Management and Natural Flood Risk Management
- Arterial Drainage Schemes
- Drainage Districts
- Maintenance of Channels not part of a Scheme

With regard to Longford town, the FRMP states that:

- Potentially viable flood relief works for Longford that may be implemented after project-level assessment and planning or exhibition and confirmation might include:
  - Construction of new flood defence wall which is to be 30m in length. The wall is proposed to be 1m in height. The location of the flood defence wall as shown in the FRMP can be seen in Figure 2-1.
  - Removal of the existing footbridge on the Camlin River upstream of the N63 Bridge.
- A Flood Relief scheme for Longford is being progressed with the OPW which will address flood considerations and support the appropriate use of riverside locations.
- During December 2016 and January 2017 there was significant flooding experienced in “The Mall” area of Longford. The flooding was not reflected on the CFRAM flood extents,

and it was as a result of a hydraulic connection between the drainage system and the River Camlin. As this flood risk is not predicted by the maps there is no measure proposed for this area and therefore it is recommended in the FRMP that a Minor Works funded Flood Risk Management application is considered.

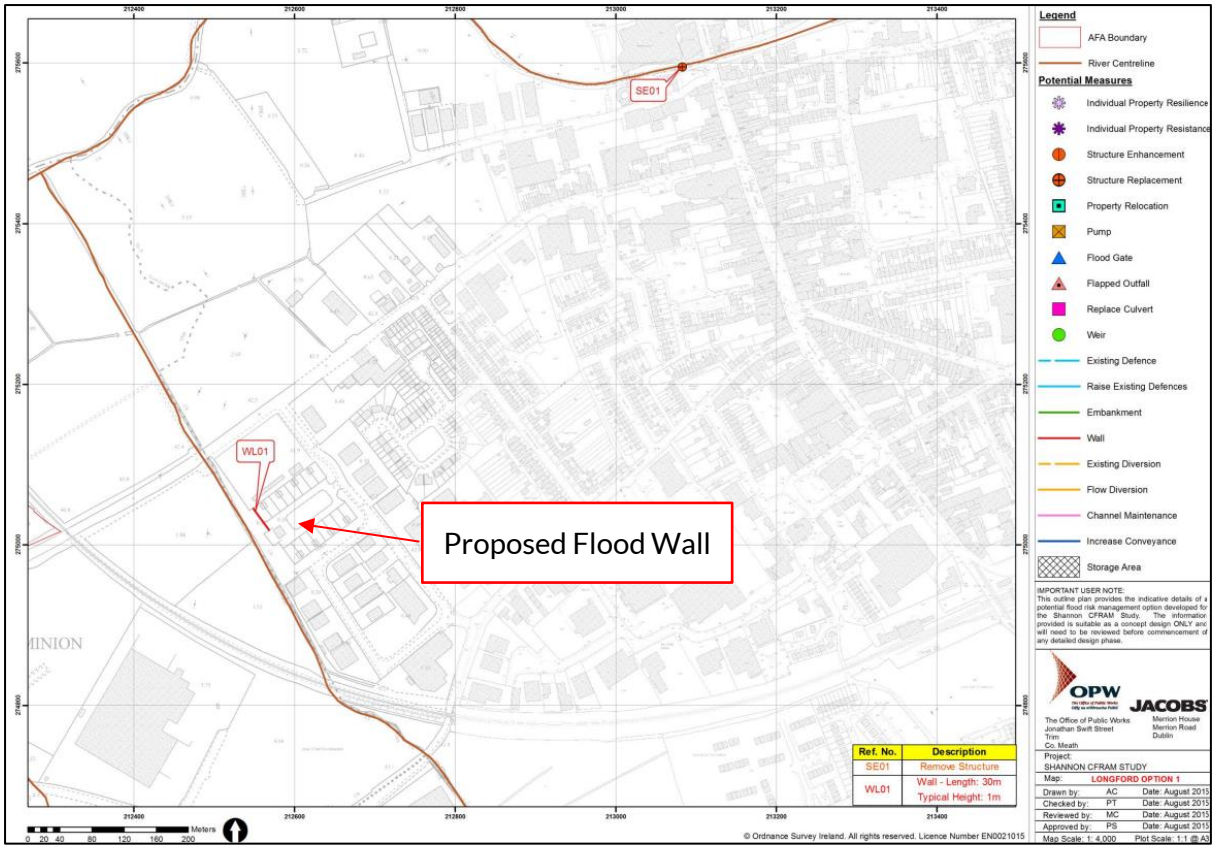


Figure 2-1: Flood Defence Wall Location as shown in FRMP

The provision of flood protection measures can significantly reduce flood risk. However, the Ministerial Guidelines require that the presence of flood protection structures should be ignored in determining flood zones. This is because of risks relating to failure and severe flood events that exceed design capacity (the risk of severe events is exacerbated with climate change). Notwithstanding this, new development can proceed in areas that are at elevated levels of flood risk subject to the Justification Test provided for by the Guidelines being passed, which takes into account proposals to manage flood risk, such as the development of defences.

As provided for under Plan measure County Policy Objective (CPO) 5.101 it is Council policy to "consult with the OPW in relation to proposed developments in the vicinity of drainage channels and rivers for which the OPW are responsible, and to retain a strip on either side of such channels where required, to facilitate maintenance access thereto". Such retention will, in combination with the direction of development within the existing footprints of settlements, safeguard flood plains from development throughout the County. It should be noted that the statutory maintenance of the drainage district channels within the plan area lies with the local authority, not the OPW.

2.3 FLOOD RISK INDICATORS

Indicators of flood risk that are based on historical flooding events are identified and described on Table 2-1.

Indicators of flood risk that are based on desktop studies of the CFRAM mapping and are identified and further described on Table 2-2 below.

Preliminary Flood Risk Assessment (PFRA) mapping was produced by the OPW in 2009. The maps were produced to assist in the development of a broad-scale FRA throughout Ireland. It was noted after completing the PFRA study that "*the flood extents shown on the maps are based on broad-scale simple analysis and may not be accurate for a specific location*".

In 2015, the OPW produced flood maps as part of the Catchment Flood Risk Assessment and Management (CFRAM) Study, which supersede the PFRA Study. The flood extents in these maps are based on detailed modelling of Areas for Further Assessment identified by the National Preliminary Flood Risk Assessment.[8].

Table 2-1: Historical Flood Risk Indicator Mapping[9]

Information Source	Description	Spatial Spread	Strategic Limitations
Alluvium Soils	Mineral alluvial soil mapping is indicative of recurrent or significant fluvial flooding at some point in the past and was generated by Teagasc with co-operation of the Forest Service, EPA and GSI. This project was completed May 2006.	Mineral Alluvium soil is identified within the LAP area surrounding the banks of the River Camlin.	Drainage may have changed significantly since these soils were deposited.
Photographs	Photography identifies that some developed and undeveloped lands flooded in 2009	Coverage limited to certain areas at certain times.	Coverage limited to certain areas at certain times.
Flood events and Flood Extents from the OPW	A flood event is the occurrence of recorded flooding at a given location on a given date. The flood event is derived from different types of information (reports, photographs etc.). A flood event that has occurred more than once at a certain area is named a recurring flood event. A flood extent is an inundated area as recorded at a certain moment in time.	There are 12 flood events recorded on floodmaps.ie – 8 of which are recurring flood events. The flood events listed are located within Longford Town and also to the east and west of the surrounding environs of the town.	This dataset only provides a spot location and does not list flood events which have not been recorded as part of the dataset.
Drainage Districts (OPW)	This drainage scheme mapping dataset was prepared on behalf of the Drainage Districts (Local Authorities with statutory responsibility for maintenance under the Arterial Drainage Act, 1925). These maps identify land that might benefit from the implementation of Arterial (Major) Drainage Schemes and	Historical mapping – Drainage Districts can be found within Longford Town and also to the east, west and north of the area.	Identifies large broad areas - very low. resolution for flood risk management.

[8] http://www.floodinfo.ie/

Information Source	Description	Spatial Spread	Strategic Limitations
	indicate areas of land subject to flooding or poor drainage.		

Table 2-2: Modelled Flood Risk Indicator Mapping

Information Source	Description	Spatial Spread	Strategic Limitations
CFRAM Study, Flood Extent Mapping, 2016	Following the undertaking of the PFRA, the OPW, through its engineering consultants and working with local authorities and other stakeholders, conducted extensive engineering assessments to better understand and detail the actual risk from flooding for areas that were at highest levels of risk. This was the subject of public consultation. The outcome of that work includes Predicted Flood Extent maps that were finalised in 2016. For fluvial flood levels, calibration and verification of the models make use of the best available data including hydrometric records, photographs, videos, press articles and anecdotal information.	The vast majority of watercourses within the Longford town development boundary were included as part of the CFRAM Study.	Spatial spread is limited, including to the areas that are considered to be at most risk of flooding.

2.4 Flood Risk Infrastructure

There have been 25 minor works completed for Longford County, however, only one is located within Longford Town, namely, Farannyoogan. The minor works were approved in 2021 and the project involved replacing the existing road culvert with a new culvert that was appropriately sized and raising the existing road levels. The location of the Minor works is shown in Figure 2-2.

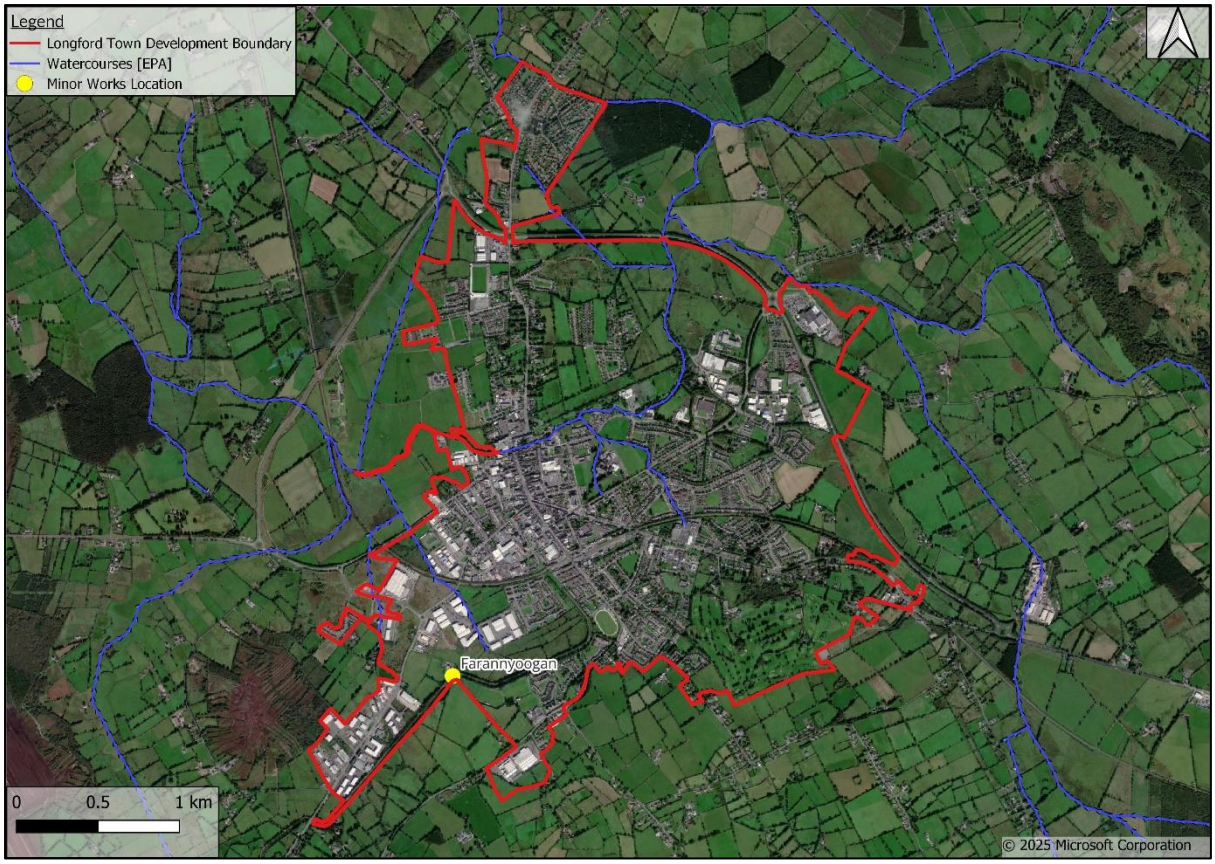


Figure 2-2: Longford Town Minor Works Locations

2.5 CONCLUSION OF STAGE 1 SFRA

The information detailed above indicates elevated levels of flood risk in Longford Town; therefore, a Stage 2 SFRA has been carried out.

3. STAGE 2 SFRA -FLOOD RISK ASSESSMENT

3.1 INTRODUCTION

A Stage 2 SFRA (initial flood risk assessment) was undertaken to:

- Confirm the sources of flooding that may affect zoned and adjacent areas;
- Appraise the adequacy of existing information as identified by the Stage 1 SFRA; and
- Scope the extent of the risk of flooding through the preparation of indicative flood zone maps.

3.2 FINDINGS AND ADEQUACY OF EXISTING INFORMATION AND DELINEATION OF FLOOD ZONES

Desk studies were undertaken taking into account the following factors:

- OPW's CFRAMS fluvial flood extent mapping (2016) and other predictive indicators;
- Historical indicators of flood risk;
- Documented Council knowledge of lands;
- Council Engineer review and input into indicators and flood zones (local knowledge);
- The potential source and direction of flood paths from rivers and streams;
- Vegetation indicative of flood risk; and
- The locations of topographic/built features that coincide with the flood indicator related boundaries/topographical survey.

Ground truthing was undertaken by CAAS in June 2020 for the Longford CDP Strategic Flood Risk Assessment. Ground truthing is the gathering of information that is known to be true, provided by direct observation and measurement as opposed to information provided by inference.

The findings of the ground truthing of flood risk indicators for Longford Town is as follows;

"Longford Town has a history of flooding, in its centre and up and downstream. The town is drained by the Camlin and a number of tributaries. During the December 2016 and January 2017 there was significant flooding experience in "The Mall" area of Longford. This flooding is not reflected by the CFRAM predicted flood extents as it is a result of a hydraulic connection between the drainage system and the River Camlin. Significant areas of flood risk were identified along the Camlin and downstream to the west of the town where there are various areas of raised ground. Various indicators of flood risk are mapped including alluvial soils. Available flood risk indicators generally reflect the topography, source of risk and flood paths observed. The Flood Risk Management Plan for the Shannon Upper and Lower (2018, see Section 2.2) proposes specific flood risk management measures for Longford Town".

TOBIN underwent a desktop study of available flood extent mapping and compiled mapping of their own using the data available. A meeting was then organised with Longford County Council and the mapping produced by TOBIN was presented to members of the council. The members of the council confirmed that the flood extents mapped were accurate and that no further mapping or particular attention to areas was required.

3.3 Flood Risk Zone Mapping

Flood Risk Zone maps have been produced taking into account the findings of the Stage 1 and Stage 2 SFRA desk and in field studies as identified above.

The maps are provided in Appendix A and a sample image is presented below in Figure 3-1. Flood Zone A is shown in darker blue, Flood Zone B in lighter blue and all other areas fall within Flood Zone C. As per the Guidelines, the flood zones in County Longford are as follows:

- Flood Zone A – where the probability of flooding from rivers is highest (greater than 1% or 1 in 100 for river flooding);
- Flood Zone B – where the probability of flooding from rivers is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding); and
- Flood Zone C – where the probability of flooding from rivers is low (less than 0.1% or 1 in 1000 for river flooding.

Figure 3-1: Excerpt of Flood Zone Mapping for Longford Town

3.4 Sustainable Drainage Systems

Sustainable Drainage Systems (SuDS) include devices such as swales, permeable pavements, filter drains, storage ponds, constructed wetlands, soakways and green roofs. In some exceptional cases, and at the discretion of the Council, where it is demonstrated that SuDS devices are not feasible, approval may be given to install underground attenuation tanks or enlarged pipes in conjunction with other devices to achieve the required water quality. Such alternative measures will only be considered as a last resort.

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

Development proposals will be required to be accompanied by a comprehensive SuDS assessment that addresses run-off rate, run-off quality and its impact on the existing habitat and water quality.

This approach using SuDS offers a total solution to rainwater management and is applicable in both urban and rural situations. Current best practice guidance on SuDS is available from the Guidance Documents produced by the Greater Dublin Strategic Drainage Study (GDSDS).

The Longford CDP SFRA details various provisions which address SuDS and Surface water management. These provisions include CPO 5.85, CPO 5.89, CPO 5.90, CPO 5.91, CPO 5.92, CPO 5.93, CPO 5.94 and DMS 16.107.

To avoid reliance on individual site-by-site solutions, integrated and area-based provision of SuDS and green infrastructure should be prioritized. This approach ensures a cohesive and efficient management of surface water across larger areas, enhancing the overall effectiveness of SuDS. Integrated SuDS can include networks of green spaces, such as parks and green corridors, which not only manage water but also provide recreational and ecological benefits. By planning and implementing SuDS at a broader scale, it is possible to achieve greater resilience against flooding, improve water quality, and support biodiversity.

Examples of integrated and area-based SuDS and green infrastructure that can be detailed on a broader scale include:

- **Green Roofs:** These can be implemented across multiple buildings in an area to reduce runoff, improve insulation, and enhance urban biodiversity.
- **Permeable Pavements:** Used extensively in parking lots, walkways, and roads to allow water infiltration, reducing surface runoff and recharging groundwater.
- **Swales and Bioswales:** Vegetated channels that can be integrated into urban landscapes to convey and treat stormwater, often used along roadsides and in parks.
- **Rain Gardens:** Planted depressions that absorb rainwater runoff from impervious urban areas like roofs, driveways, and compacted lawn areas.
- **Constructed Wetlands:** These can be designed to treat stormwater and wastewater, providing habitat for wildlife and recreational spaces for communities.
- **Detention Basins and Retention Ponds:** These can be incorporated into public parks or open spaces to manage large volumes of stormwater, reducing flood risk and improving water quality.

By adopting an integrated approach to SuDS and green infrastructure, communities can benefit from enhanced public spaces, increased biodiversity, and improved water management. This approach not only addresses immediate flood risks but also contributes to the long-term sustainability and resilience of urban and rural areas. Examples of potential SuDS measures are seen in Figure 3-2 & Figure 3-3 below.

Figure 3-2: Green Roof[10] and Permeable Paving[11] Examples

Figure 3-3: Tree Pits[12] and Swale[13] Examples

[10] https://www.commercialdesignindia.com/insights/green-architects-building-sustainable-future-in-a-changing-world

[11] https://soilandwater.ca.uky.edu/stormwater

[12]https://www.externalworksindex.co.uk/entry/141139/GreenBlue-Urban-Ltd/Sustainable-tree-planting-in-innovative-SuDS-scheme/

[13] https://www.linkedin.com/pulse/prevention-better-than-cure-kushal-gowda

4. RECOMMENDATIONS

4.1 INTRODUCTION

In order to comply with *The Planning System and Flood Risk Management - Guidelines for Planning Authorities* (DEHLG) and Office of Public Works (OPW), 2009) and Department of the Environment, Community and Local Government Circular (*PL 2/2014*) and contribute towards flood risk management within the Longford LAP area, the recommendations below have been made by the SFRA process and integrated into the Plan.

4.2 LAND USE ZONING

That the Indicative Flood Zones identified by the SFRA are used in line with the provisions contained in the Flood Risk Management Guidelines which are summarised in Sections 1.7& 1.9. Undeveloped land should not be zoned for incompatible uses and can be zoned as, for example, Recreation, Amenity, and open space.

With respect to lands which have already been developed, the potential conflict between zonings and highly and less vulnerable development (see Section 1.7) will be avoided by applying the constrained land use approach. The blue shaded zones ('Constrained Land Use") are used in order to show on the map that there is a flood risk issue present in that area. This approach is established and tested and consistent with the requirements of the Flood Risk Management Guidelines and associated Circular PL 2/2014.

To this effect, the following provisions were integrated into the Plan:

Within Chapter 5 of the Longford County Development Plan:

County Policy Objective COP 5.119

Facilitate the appropriate management and sustainable use of flood risk areas designated as 'Constrained Land Use' on Settlement Plan zoning maps. Future development on these lands is limited to minor development where plan-making Justification Tests have not been undertaken and the Constrained Land Use applies.

Constrained Land Uses

Flood risk areas in settlement plans are represented by a 'Constrained Land Use' designation. This designation generally limits new development but will facilitate existing development uses within these areas that may require small scale development such as small extensions. Development proposals within these areas shall be accompanied by a detailed Flood Risk Assessment, carried out in accordance with The Planning System and Flood Risk Assessment Guidelines and Circular PL 2/2014 (or as updated), which shall assess the risks of flooding associated with the proposed development.

Proposals shall only be considered favourably where it is demonstrated to the satisfaction of the Planning Authority that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities, or increase the risk of flooding to other locations and be in accordance with the proper planning and sustainable development of the area. The nature and design of structural and non-structural flood risk management measures required for development in such areas will also be required to be demonstrated, to ensure that flood

hazard and risk will not be increased. Measures proposed shall follow best practice in the management of health and safety for users and residents of the development.

Specifications for developments in flood vulnerable areas set out in this Plan shall be complied with as appropriate. (Please also refer to CPO 5.120 and DMS 206).

County Policy Objective COP 5.110

Site-specific Flood Risk Assessment (SFRA) is required for all planning applications in areas at risk of flooding (fluvial, pluvial or groundwater), even for developments appropriate to the particular Flood Zone. The detail of these site-specific FRAs will depend on the level of risk and scale of development. A detailed site-specific FRA should quantify the risks, the effects of selected mitigation and the management of any residual risks. The assessments shall consider and provide information on the implications of climate change with regard to flood risk in relevant locations. The 2009 OPW Draft Guidance on Assessment of Potential Future Scenarios for Flood Risk Management (or any superseding document) and available information from the CFRAM Studies shall be consulted with to this effect.

Chapter 16 Development Management Standards

DMS16.205 Flood Zones and Appropriate Land Uses

The table below indicates the types of land uses that are appropriate in each of the Flood Zones identified within the Longford LAP area, in accordance with the 2009 Flood Risk Management Guidelines for Planning Authorities and Departmental Circular PL2/2014 (or any updated/superseding legislation or policy guidance).

Where developments/land uses are proposed that are considered inappropriate to the Flood Zone that may be identified in the future at project level following adoption of the Plan, then a Development Management Justification Test and site-specific Flood Risk Assessment will be required in accordance with The Planning System and Flood Risk Management Guidelines 2009 (and as updated).

Flood Zones	Overall probability	Planning implications for land uses		
		Highly Vulnerable Development	Less Vulnerable Development	Water Compatible Development
Flood Zone A	Highest	Inappropriate – if proposed then Justification Test and detailed Flood Risk Assessment is required	Inappropriate – if proposed then Justification Test and detailed Flood Risk Assessment is required	Appropriate – screen for flood risk
Flood zone B	Moderate	Inappropriate – if proposed then Justification Test and detailed Flood Risk Assessment is required	Inappropriate due to climate change – if proposed then Justification Test and detailed Flood Risk Assessment is required	Appropriate – screen for flood risk
Flood Zone C	Lowest	Appropriate - detailed Flood Risk Assessment may be required	Appropriate - detailed Flood Risk Assessment may be required	Appropriate – screen for flood risk

Note (refer to Flood Risk Management Guidelines 2009 and 'SFRA for the Longford County Development Plan 2021-2027' for additional detail):

- Highly Vulnerable Development - Houses, schools, hospitals, residential institutions, emergency services, essential infrastructure, etc.
- Less Vulnerable Development - Economic uses (retail, leisure, warehousing, commercial, industrial, non-residential institutions, etc.), land and buildings used for agriculture or forestry, local transport infrastructure, etc.

- Water Compatible Development - Docks, marinas, wharves, water-based recreation and tourism (excluding sleeping accommodation), amenity open space, sports and recreation, flood control infrastructure, etc.

DMS16.206 Structural and Non-Structural Risk Management Measures in Flood Vulnerable Zones.

Applications for development in flood vulnerable zones shall provide details of structural and non-structural risk management measures to include, but not be limited to specifications of the following:

Floor Levels

In areas of limited flood depth, the specification of the threshold and floor levels of new structures shall be raised above expected flood levels to reduce the risk of flood losses to a building, by raising floor heights within the building structure using a suspended floor arrangement or raised internal concrete platforms.

When designing an extension or modification to an existing building, an appropriate flood risk reduction measure shall be specified to ensure the threshold levels into the building are above the design flood level. However, care must also be taken to ensure access for all is provided in compliance with Part M of the Building Regulations.

Where threshold levels cannot be raised to the street for streetscape, conservation or other reasons, the design shall specify a mixing of uses vertically in buildings - with less vulnerable uses located at ground floor level, along with other measures for dealing with residual flood risk.

Internal Layout

Internal layout of internal space shall be designed and specified to reduce the impact of flooding [for example, living accommodation, essential services, storage space for provisions and equipment shall be designed to be located above the predicted flood level]. In addition, designs and specifications shall ensure that, wherever reasonably practicable, the siting of living accommodation (particularly sleeping areas) shall be above flood level.

With the exception of single storey extensions to existing properties, new single storey accommodation shall not be deemed appropriate where predicted flood levels are above design floor levels. In all cases, specifications for safe access, refuge and evacuation shall be incorporated into the design of the development.

Flood-Resistant Construction

Developments in flood vulnerable zones shall specify the use of flood-resistant construction aimed at preventing water from entering buildings - to mitigate the damage floodwater caused to buildings.

Developments shall specify the use of flood resistant construction prepared using specialist technical input to the design and specification of the external building envelope – with measures to resist hydrostatic pressure (commonly referred to as “tanking”) specified for the outside of the building fabric.

The design of the flood resistant construction shall specify the need to protect the main entry points for floodwater into buildings - including doors and windows (including gaps in sealant around frames), vents, air-bricks and gaps around conduits or pipes passing through external building fabric.

The design of the flood resistant construction shall also specify the need to protect against flood water entry through sanitary appliances as a result of backflow through the drainage system.

Flood Resilient Construction

Developments in flood vulnerable zones that are at risk of occasional inundation shall incorporate design and specification for flood resilient construction which accepts that floodwater will enter buildings and provides for this in the design and specification of internal building services and finishes. These measures limit damage caused by floodwater and allow relatively quick recovery.

This can be achieved by specifying wall and floor materials such as ceramic tiling that can be cleaned and dried relatively easily, provided that the substrate materials (e.g. blockwork) are also resilient. Electrics, appliances and kitchen fittings shall also be specified to be raised above floor level, and one-way valves shall be incorporated into drainage pipes.

Emergency Response Planning

In addition to considering physical design issues for developments in flood vulnerable zones, the developer shall specify that the planning of new development also takes account of the need for effective emergency response planning for flood events in areas of new development.

Applications for developments in flood vulnerable zones shall provide details that the following measures will be put in place and maintained:

- Provision of flood warnings, evacuation plans and ensuring public awareness of flood risks to people where they live and work;
- Coordination of responses and discussion with relevant emergency services i.e. Local Authorities, Fire and Rescue, Civil Defence and An Garda Siochána through the SFRA; and
- Awareness of risks and evacuation procedures and the need for family flood plans.

Access and Egress During Flood Events

Applications for developments in flood vulnerable zones shall include details of arrangements for access and egress during flood events. Such details shall specify that:

- flood escape routes have been kept to publicly accessible land;
- such routes will have signage and other flood awareness measures in place, to inform local communities what to do in case of flooding; and this information will be provided in a welcome pack to new occupants.

Further information

Further and more detailed guidance and advice can be found at http://www.flooding.ie and in the Building Regulations.

4.3 JUSTIFICATION TEST

The Justification Test is required to be passed whereby "highly vulnerable" land uses are being proposed on lands in Flood Zone A or whereby "highly and/or less vulnerable" land uses are being proposed on lands in Flood Zone B.

The justification test areas were broken down into different areas based on locations named in the Longford CDP 2021 – 2027. The locations are previously developed lands.

Table 4-1: Industrial / Commercial / Warehousing Zoned Areas

Justification Test for sites within Flood Zone A and / or B	OP1 Northwest of Lanna Aoibhinn	OP2 ICW at crossover of railway line and N63	OP3 South of railway Line
The urban settlement is targeted for growth	Yes, Longford is an National Planning Framework (NPF) Key Town. The site is predominantly in Flood Zone C but is shown partially within CFRAMS Study Modelled extents of Flood Zone A and B.	Yes, Longford is an NPF Key Town. The site is predominantly in Flood Zone C but is shown partially within CFRAMS Study Modelled extents of Flood Zone A and B.	Yes, Longford is an NPF Key Town. The site is predominantly in Flood Zone C but is shown partially within CFRAMS Study Modelled extents of Flood Zone A and B.
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	The site is zoned for Industrial / Commercial / Warehousing.	The site is zoned for Industrial / Commercial / Warehousing and is located on a key transport location, being adjacent to the railway line.	The site is zoned for Industrial / Commercial / Warehousing and is located on a key transport location, being adjacent to the railway line.
Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.	There is an existing warehouse in the development area as well as the Athlone Road which flows through the study area. Extension of the warehouse is essential for the expansion of the urban settlement.	There are multiple existing warehouses in the development area which is adjacent to the N63 and Railway Line which is essential for the expansion of the urban settlement.	The site is essential to town centre expansion due to its location adjacent to the railway line.
Comprises significant previously developed and/ or under-utilised lands	Yes. The site accommodates a warehouse and car parking spaces.	Yes. The site accommodates multiple warehouses and car parking spaces.	Yes. The site accommodates a large warehouse and car parking spaces.

Justification Test for sites within Flood Zone A and / or B	OP1 Northwest of Lanna Aoibhinn	OP2 ICW at crossover of railway line and N63	OP3 South of railway Line
Is within or adjoining the core of an established or designated urban settlement	The site is adjoining the town core.	The site is adjoining the town core.	The site is a short distance from the town core.
Will be essential in achieving compact and sustainable urban growth	The site is a large block of land close to the town centre and is adjacent to the Connaught and Athlone Roads.	The site is a large block of land close to the town centre and adjacent to the N63 and railway line.	The site is a large block of land close to the town centre and adjacent to the railway line.
There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	There are no suitable alternatives of similar size with as ample access to roads.	There are no suitable alternatives of similar size which is located along the railway line	There are no suitable alternatives of similar size which is located along the railway line.
Requirements	There is a requirement that proposals for development will promote and facilitate sustainable transport for trips to work via such measures as car parking provision and management, provision for cyclists, shuttle bus services and general workplace travel plan activities.	There is a requirement that proposals for development will promote and facilitate sustainable transport for trips to work via such measures as car parking provision and management, provision for cyclists, shuttle bus services and general workplace travel plan activities.	There is a requirement that proposals for development will promote and facilitate sustainable transport for trips to work via such measures as car parking provision and management, provision for cyclists, shuttle bus services and general workplace travel plan activities.
A flood risk assessment to an appropriate level of detail has been carried out	Section 4.3.1	Section 4.3.2	Section 4.3.3
Result	**Pass**	**Pass**	**Pass**
Recommendation for zoning	Industrial / Commercial / Warehousing	Industrial / Commercial / Warehousing	Industrial / Commercial / Warehousing

Table 4-2: Social / Community / Education / Public Utility Zoned Areas

Justification Test for sites within Flood Zone A and / or B	OP4 South of Railway Line	OP5 North of Templemichael Terrace	OP6 South of Templemichael Terrace
The urban settlement is targeted for growth	Yes, Longford is an NPF Key Town. The site is	Yes, Longford is an NPF Key Town. The site is	Yes, Longford is an NPF Key Town. The site is

Justification Test for sites within Flood Zone A and / or B	OP4 South of Railway Line	OP5 North of Templemichael Terrace	OP6 South of Templemichael Terrace
	predominantly in Flood Zone C but is shown partially within CFRAMS Study Modelled extents of Flood Zone A and B.	predominantly in Flood Zone C but is shown partially within CFRAMS Study Modelled extents of Flood Zone A and B.	predominantly in Flood Zone C but is shown partially within CFRAMS Study Modelled extents of Flood Zone A and B.
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	The site is zoned for Social / Community / Education / Public Utility.	The site is zoned for Social / Community / Education / Public Utility.	The site is zoned for Social / Community / Education / Public Utility.
Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.	There is an existing medical park at the site which is essential to facilitate expansion of the urban development.	There is an existing educational facility at the site which is essential to facilitate expansion of the urban development.	There is an existing educational facility at the site which is essential to facilitate expansion of the urban development.
Comprises significant previously developed and/ or under-utilised lands	Yes. The site accommodates a medical park and car parking spaces.	Yes. The site accommodates St. Mel's College.	Yes. The site accommodates Templemichael College.
Is within or adjoining the core of an established or designated urban settlement	The site is a short distance from the town core.	The site is within the town core.	The site is within the town core.
Will be essential in achieving compact and sustainable urban growth	The site has further open areas which allow for further development.	The site has large undeveloped green areas allowing for further expansion.	The site has large undeveloped green areas allowing for further expansion.
There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	There are no suitable alternatives of similar size with as ample access to roads.	There are no suitable alternatives of similar size with as ample access to roads.	There are no suitable alternatives of similar size with as ample access to roads.
A flood risk assessment to an appropriate level of detail has been carried out	Section 4.3.4	Section 4.3.5	Section 4.3.6
Result	**Pass**	**Pass**	**Pass**

Justification Test for sites within Flood Zone A and / or B	OP4 South of Railway Line	OP5 North of Templemichael Terrace	OP6 South of Templemichael Terrace
Recommendation for zoning	Social / Community / Education / Public Utility	Social / Community / Education / Public Utility	Social / Community / Education / Public Utility

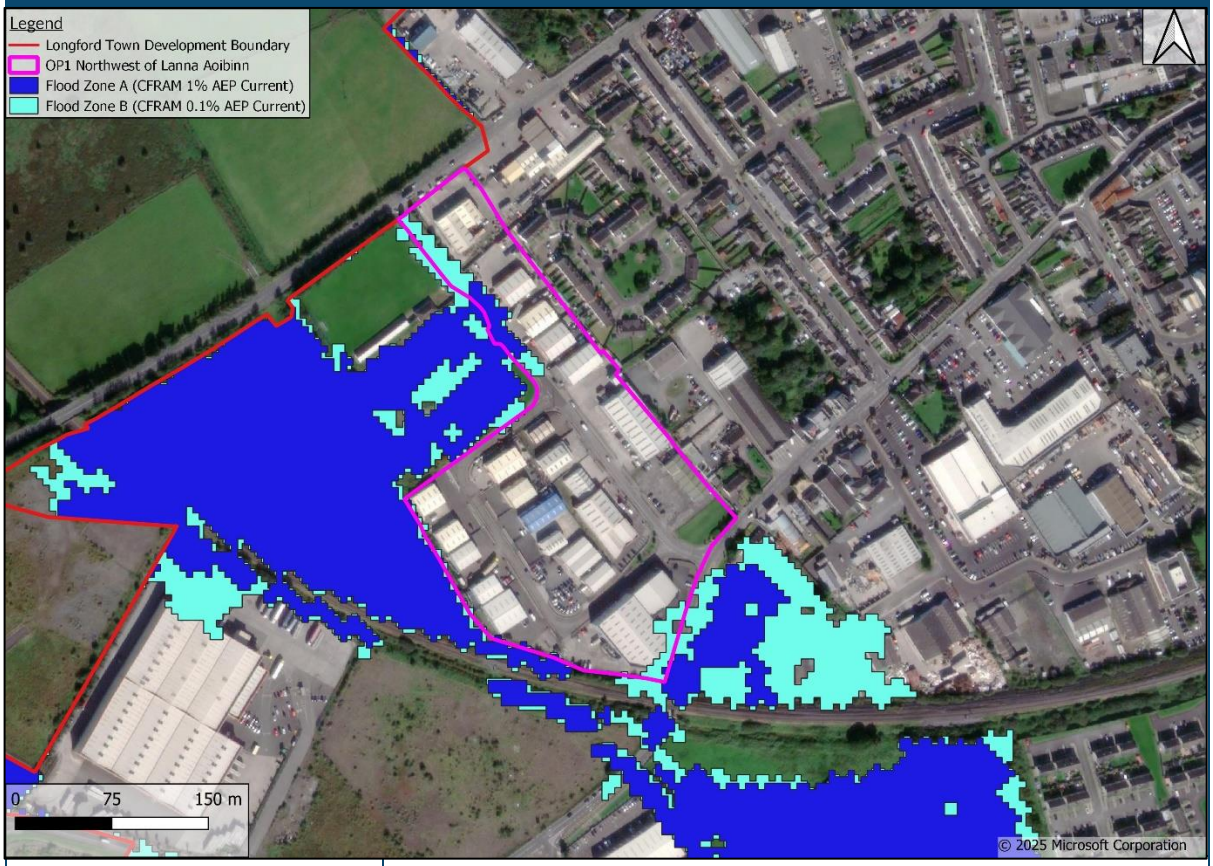
Table 4-3: Water Compatible

Justification Test for sites within Flood Zone A and / or B	OP7 North of Railway Line	OP8 North of Longford Town
The urban settlement is targeted for growth	Yes, Longford is an NPF Key Town. The site is predominantly in Flood Zone B but is shown partially within CFRAMS Study Modelled extents of Flood Zone A and C.	Yes, Longford is an NPF Key Town. The site is predominantly in Flood Zone C but is shown partially within CFRAMS Study Modelled extents of Flood Zone A and B.
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	The site is zoned for recreation/amenity/greenspace.	The site is zoned for recreation/amenity/greenspace.
Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.	It is proposed to zone the site residential which will contribute to sequential and compact growth through the development of a vacant underutilised site. The site will tie in with adjacent residential estates.	It is proposed to zone the site residential which will contribute to sequential and compact growth through the development of a vacant underutilised site. The site will tie in with adjacent residential estates.
Comprises significant previously developed and/ or under-utilised lands	Yes. The site comprises of under-utilised lands.	Yes. The site comprises of under-utilised lands.
Is within or adjoining the core of an established or designated urban settlement	The site is a short distance from the town core.	The site is a short distance from the town core.
Will be essential in achieving compact and sustainable urban growth	The site has large undeveloped green areas which will allow for further expansion and connection to the town centre.	The site has large undeveloped green areas currently the tennis club and rugby club which will allow for further expansion and connection to the town centre.
There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	There are no suitable alternatives of similar size.	There are no suitable alternatives of similar size .

Justification Test for sites within Flood Zone A and / or B	OP7 North of Railway Line	OP8 North of Longford Town
No Flood Risk Assessment is required as the site is water compatible	NA	NA
Result	**Pass**	**Pass**
Recommendation for zoning	Residential	Residential

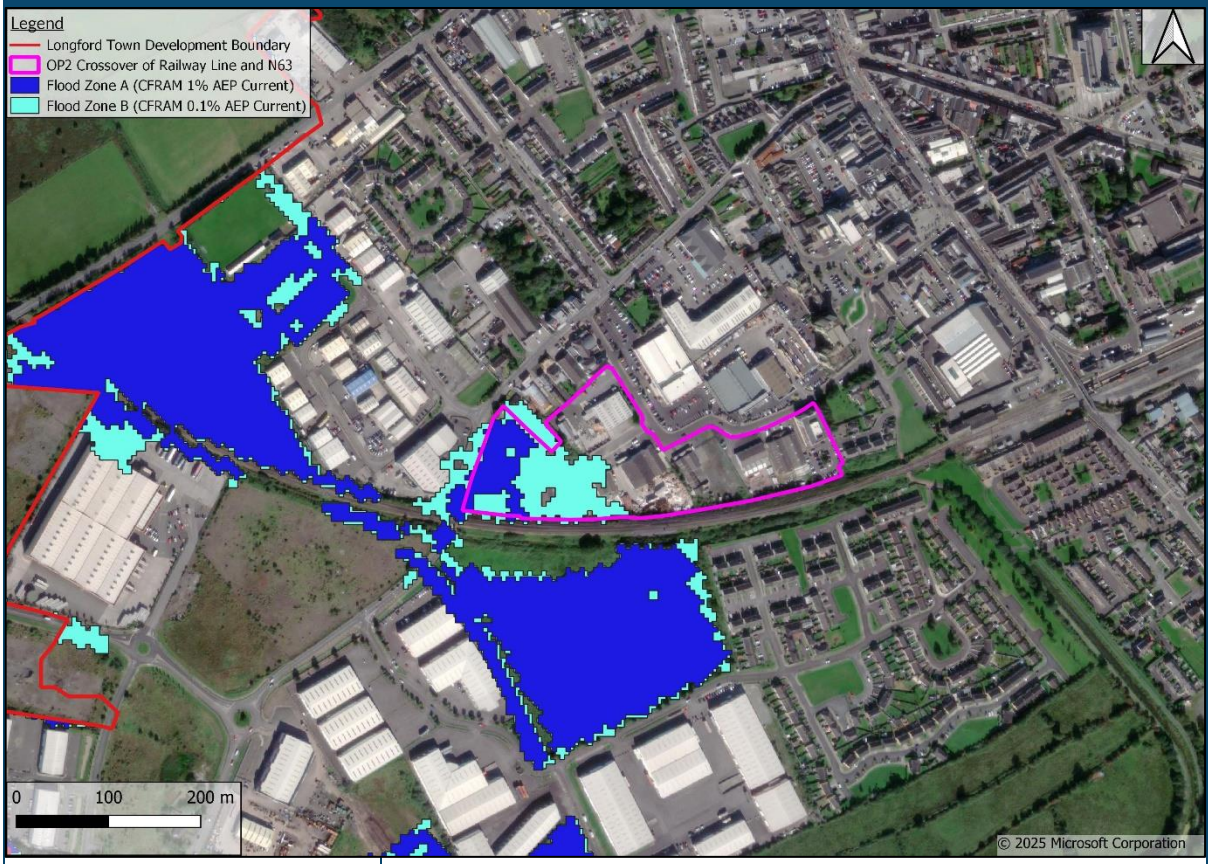
More detail of the 8 areas seen above, which underwent a justification test are seen in Sections 4.3.1 – 4.3.6 below.

4.3.1 OP1 Northwest of Lanna Aoibhinn

Site:	OP1 Northwest of Lanna Aoibhinn
	
Site Description	The lands are located to the north of the Railway line with the N63 bounding the lands to the east. The lands comprise of multiple commercial buildings. An unnamed River flows along the southwestern boundary of the site and results in flooding to areas of the land where no developments are in place.
Benefitting from defences (flood relief scheme works)	The lands have not benefited from any flood relief schemes but may benefit from future flood relief schemes, such as the Longford Flood Relief Scheme, as set out in Chapter 1.3.8.

Site:	OP1 Northwest of Lanna Aoibhinn
Sensitivity to Climate Change	Moderate to high, with flood zones only for a current scenario with climate change not considered. Impacts relating to groundwater are unknown.
Residual Risk	Low
Historical flooding	The lands are flooded yearly, The Tributary of the River Camlin and its tributaries overflow their banks every year after heavy rain. The inundated lands are a significant flood plain and properties are affected in surrounding lands.
Surface Water	Should further development be permitted, best practice with regards to surface water management should be implemented across the development area, and it is important to ensure that any increase in runoff is managed within the existing systems, or through new drainage networks.
Sustainable Drainage Systems (SuDS)	The OP 1 site is already largely developed but it is recommended to incorporate Sustainable Drainage Systems (SuDS) such as tree pits, swales, filter drains, green roofs, and permeable paths to enhance surface water management and improve site resilience of the site.
Commentary on Flood Risk	The site is predominantly in Flood Zone C, but it is shown partially within the CFRAM study extents of Flood Zone A and B. The flooding across the site appears to be due to a Tributary of the River Camlin and its tributaries breaking their banks and flowing over adjacent lands before inundating part of the site. The potential land uses range from Industrial to Commercial to Warehousing and therefore, are appropriate in this location.
Development Options	OP1 is subject to Industrial/Commercial/Warehouse Zoning. Development within OP1 is likely to involve redevelopment of existing uses. Any redevelopment of the industrial/commercial/warehouse businesses should be subject to a Detailed FRA at Development Management Stage that assesses residual risk. It will likely be possible to manage flood risk through site layout (both horizontal and vertical use of space) and finished floor levels.

4.3.2 OP2 Crossover of Railway Line and N63

Site:	OP2 Crossover of Railway Line and N63
	
Site Description	The lands are located to the north of the Railway line with the N63 bounding the lands to the west. The lands comprise of multiple commercial and warehouse buildings. An unnamed River, which is a tributary of the River Camlin flows south of the site on the opposite side of the railway line before passing under the railway line and flowing to the west of the site, resulting in flooding to approximately one third of the lands where a series of warehouses are located.
Benefitting from defences (flood relief scheme works)	The lands have not benefited from any flood relief schemes but may benefit from future flood relief schemes, such as the Longford Flood Relief Scheme, as set out in Chapter 1.3.8.
Sensitivity to Climate Change	Low, Climate change scenarios only inundate the site slightly further.
Residual Risk	Low
Historical flooding	The lands are flooded yearly, The Tributary of the River Camlin and its tributaries overflow their banks every year after heavy rain. The inundated lands are a significant flood plain and properties are affected.
Surface Water	Should further development be permitted, best practice with regards to surface water management should be implemented across the development area, and it is important to ensure that any increase in runoff is managed within the existing systems, or through new drainage networks.

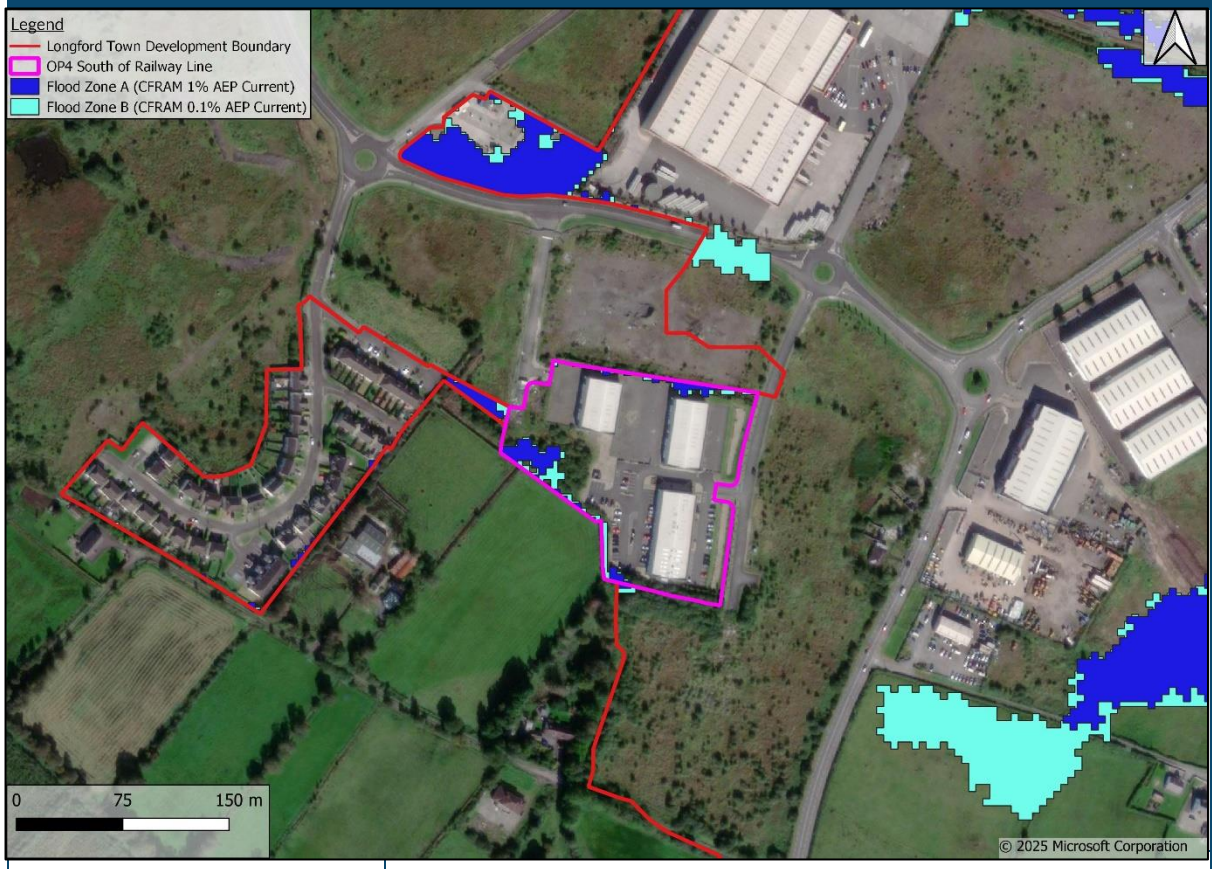
Site:	OP2 Crossover of Railway Line and N63
Sustainable Drainage Systems (SuDS)	The OP 2 site is already largely developed but it is recommended to incorporate Sustainable Drainage Systems (SuDS) such as tree pits, swales, filter drains, green roofs, and permeable paths to enhance surface water management and improve site resilience of the site.
Commentary on Flood Risk	The site is predominantly in Flood Zone C, but it is shown partially within the CFRAM study extents of Flood Zone A and B. The flooding across the site appears to be due to a Tributary of the River Camlin and its tributaries breaking their banks and flowing over adjacent lands along the north of the railway line before inundating part of the site. The potential land uses range from Industrial to Commercial to Warehousing and therefore, are not appropriate in Flood Zone A.
Development Options	OP2 is subject to Industrial/Commercial/Warehouse Zoning. Development within OP2 is likely to involve redevelopment of existing uses. Any redevelopment of the industrial/commercial/warehouse businesses should be subject to a Detailed FRA at Development Management Stage that assesses residual risk. It will likely be possible to manage flood risk through site layout (both horizontal and vertical use of space) and finished floor levels.

4.3.3 OP3 Industrial/Commercial/Warehouse South of Railway Line

Site:	OP3 South of Railway Line
	
Site Description	The lands are located to the south of the Railway line, with the Gleann Riada road bounding the lands to the south. The lands comprise of a large warehouse, with underutilised lands located to the west of the site. An unnamed River, which is a tributary of the River Camlin flows through the underutilised areas of the site on the west. This tributary results in flooding to approximately 75% of the underutilised area. A further tributary flows to the west of the lands and results in flooding to the northern corner of the lands which is a car parking area.
Requirements	Under this land use zoning there is a requirement that proposals for development will promote and facilitate sustainable transport for trips to work via such measures as car parking provision and management, provision for cyclists, shuttle bus services and general workplace travel plan activities.
Benefitting from defences (flood relief scheme works)	The lands have not benefited from any flood relief schemes but may benefit from future flood relief schemes, such as the Longford Flood Relief Scheme, as set out in Chapter 1.3.8.
Sensitivity to Climate Change	Low, Climate change scenarios only inundate the site slightly further.
Residual Risk	Low
Historical flooding	The lands are flooded yearly, The Tributary of the River Camlin and its tributaries overflow their banks every year after heavy rain. The inundated lands are a significant flood plain and properties to the north of the railway line are affected.

Site:	OP3 South of Railway Line
Surface Water	Should further development be permitted, best practice with regards to surface water management should be implemented across the development area, and it is important to ensure that any increase in runoff is managed within the existing systems, or through new drainage networks.
Sustainable Drainage Systems (SuDS)	The OP 3 site is already largely developed but it is recommended to incorporate Sustainable Drainage Systems (SuDS) such as tree pits, swales, filter drains, green roofs, and permeable paths to enhance surface water management and improve site resilience of the site.
Commentary on Flood Risk	The site is predominantly in Flood Zone C, but it is shown partially within the CFRAM study extents of Flood Zone A and B. The flooding across the site appears to be due to a Tributary of the River Camlin and its tributaries breaking their banks and flowing over the railway line before inundating part of the lands. The potential land uses range from Industrial to Commercial to Warehousing and therefore, and are appropriately located everywhere on the site bar the western portion, which is in Flood Zone A.
Development Options	OP3 is subject to Industrial/Commercial/Warehouse Zoning. Development within OP3 is likely to involve redevelopment of existing uses. Any redevelopment of the industrial/commercial/warehouse businesses should be subject to a Detailed FRA at Development Management Stage that assesses residual risk. It will likely be possible to manage flood risk through site layout (both horizontal and vertical use of space) and finished floor levels.

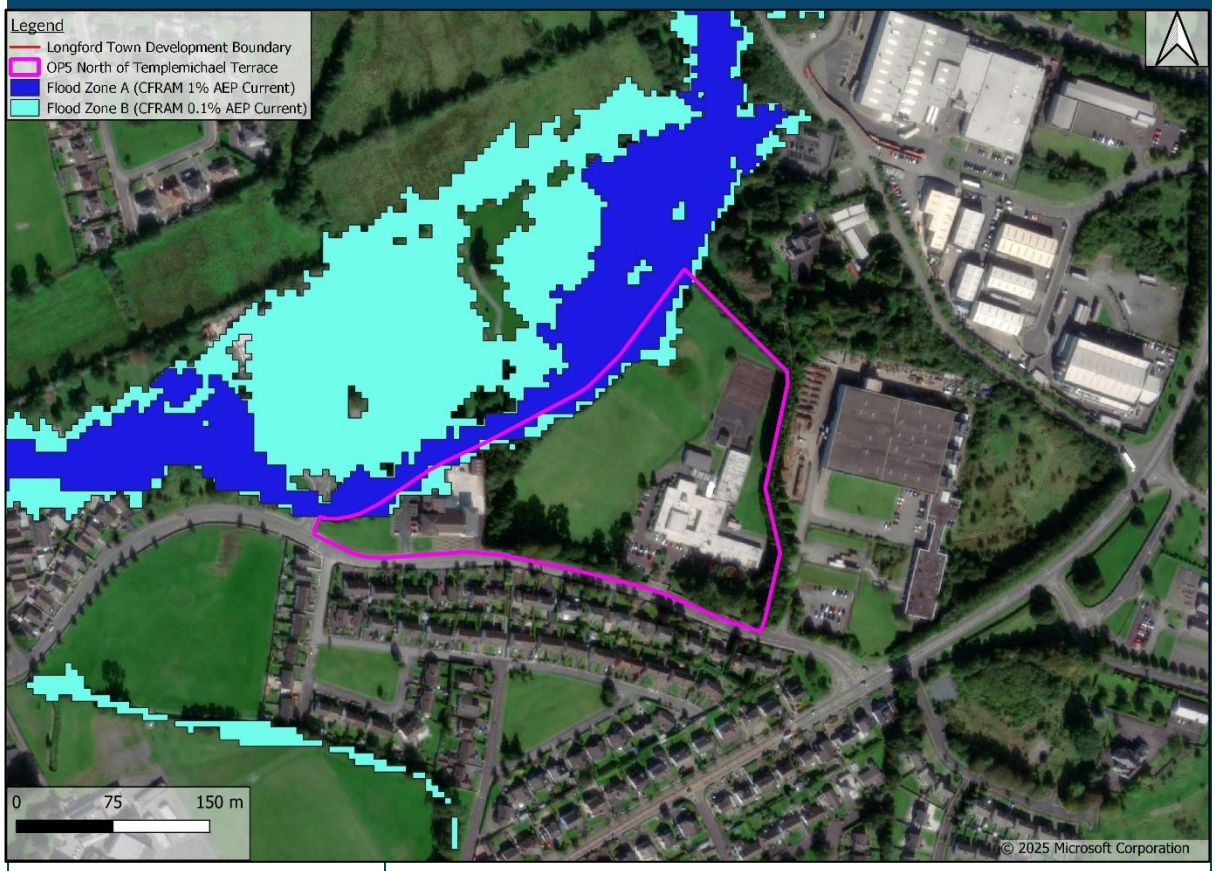
4.3.4 OP4 Social / Community / Education / Public Utility South of Railway Line

Site:	OP4 South of Railway Line
	
Site Description	The lands are located to the east of Gleann Riada road, with two access points provided by the road. The lands are also just 300m south of the railway line. The lands comprise of the existing Longford Medical Park. An unnamed River, which is a tributary of the River Camlin flows through the centre of the lands. The tributary results in small amounts of flooding along the western and northern boundaries.
Benefitting from defences (flood relief scheme works)	The lands have not benefited from any flood relief schemes but may benefit from future flood relief schemes, such as the Longford Flood Relief Scheme, as set out in Chapter 1.3.8.
Sensitivity to Climate Change	Low, Climate change scenarios only inundate the site slightly further.
Residual Risk	Low
Historical flooding	There are no recorded flood events in the vicinity of the lands, the closest recorded flood event is approximately 500m North of the lands on the opposite side of the railway line.
Surface Water	Should further development be permitted, best practice with regards to surface water management should be implemented across the development area, and it is important to ensure that any increase in runoff is managed within the existing systems, or through new drainage networks.

Site:	OP4 South of Railway Line
Sustainable Drainage Systems (SuDS)	The OP 4 site is already largely developed but it is recommended to incorporate Sustainable Drainage Systems (SuDS) such as tree pits, swales, filter drains, green roofs, and permeable paths to enhance surface water management and improve site resilience of the site.
Commentary on Flood Risk	The site is predominantly in Flood Zone C, but it is shown partially within the CFRAM study extents of Flood Zone A and B. The flooding across the site appears to be due to a Tributary of the River Camlin and its tributaries breaking their banks and flowing over adjacent lands along the north of the railway line before inundating part of the site. The potential land uses are Social / Community / Education / Public Utility and are appropriate in this location.
Development Options	OP4 is subject to Social / Community / Education / Public Utility Zoning. Development within OP4 is likely to involve redevelopment of existing uses. Any redevelopment of the Social / Community / Education / Public Utility businesses should be subject to a Detailed FRA at Development Management Stage that assesses residual risk. It will likely be possible to manage flood risk through site layout (both horizontal and vertical use of space) and finished floor levels.

4.3.5 OP5 North of Templemichael Terrace

Site:	OP5 North of Templemichael Terrace

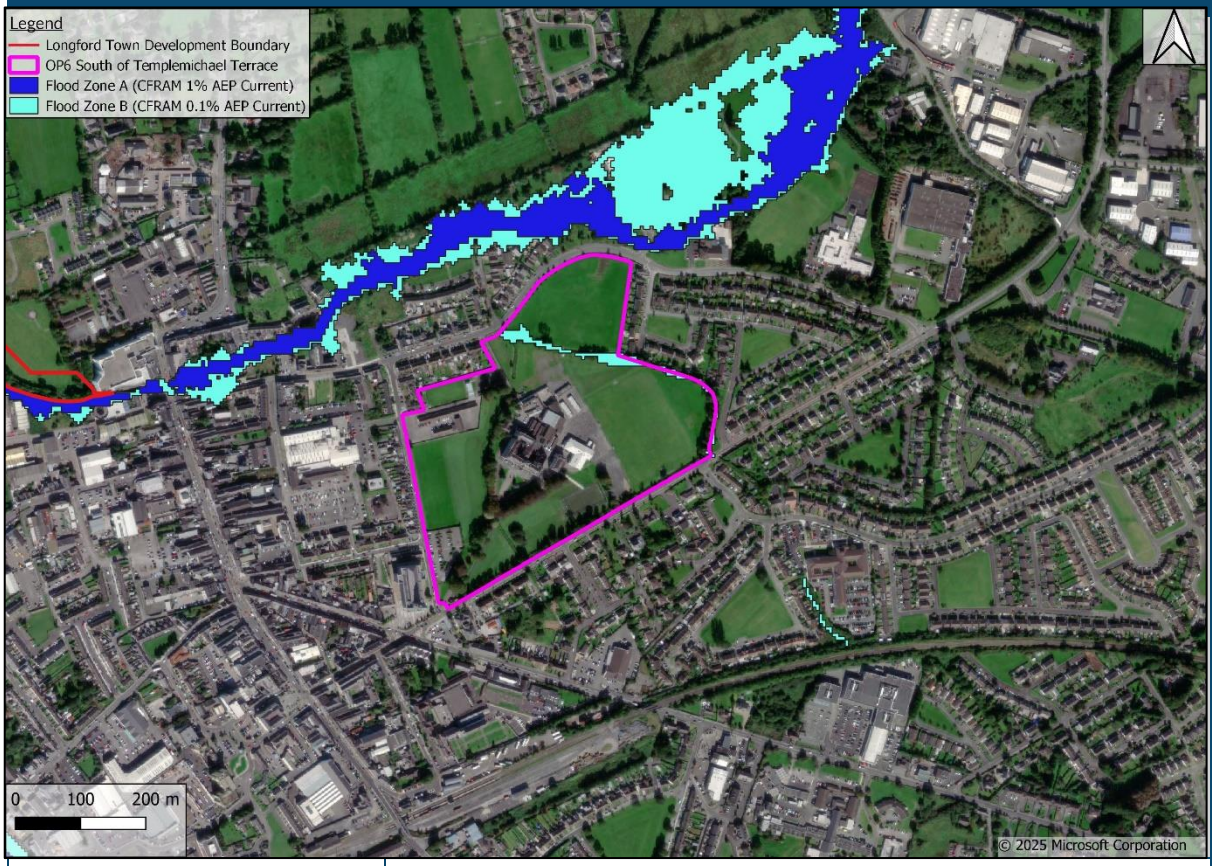


Site Description	The lands are located along the banks of the River Camlin, with Templemichael Terrace Road bounding the lands to the south. The lands comprise of the existing Templemichael college. The River Camlin, which flows along the northwestern boundary of the site causes flooding to the areas of the lands on the immediate banks of the river.
Benefitting from defences (flood relief scheme works)	The lands have not benefited from any flood relief schemes but may benefit from future flood relief schemes, such as the Longford Flood Relief Scheme, as set out in Chapter 1.3.8.
Sensitivity to Climate Change	Low, Climate change scenarios only inundate the site slightly further.
Residual Risk	Low
Historical flooding	There are no recorded flood events in the vicinity of the lands, the closest recorded flood events are approximately 300m South of the lands as a result of flooding from the River Demesne.
Surface Water	Should further development be permitted, best practice with regards to surface water management should be implemented across the development area, and it is important to ensure that any increase in runoff is managed within the existing systems, or through new drainage networks.
Sustainable Drainage Systems (SuDS)	The OP 5 site is already largely developed but it is recommended to incorporate Sustainable Drainage Systems (SuDS) such as tree pits,

Site:	OP5 North of Templemichael Terrace
	swales, filter drains, green roofs, and permeable paths to enhance surface water management and improve site resilience of the site.
Commentary on Flood Risk	The site is predominantly in Flood Zone C, but it is shown partially within the CFRAM study extents of Flood Zone A and B. The flooding across the site appears to be due the River Camlin breaking its banks. The potential land uses are Social / Community / Education / Public Utility and are appropriate in this location.
Development Options	It is expected that any developments on the site will be extensions to the existing educational facility. Any new development masterplan should include a site-specific flood risk assessment, which is likely to reduce the extent of mapped flooding. It will be possible to manage any remaining flood risk through site layout (both horizontal and vertical use of space) and finished floor levels.

4.3.6 OP6 South of Templemichael Terrace

Site:	OP6 South of Templemichael Terrace



Site Description	The lands are located just south of the River Camlin. The Templemichael and Demesne rivers, which are tributaries of the River Camlin flow through the lands. The Templemichael Terrace road bounds the lands to the north, Mel's Road bounds the lands to the west and the N63 bounds the lands to the south. Flooding at the site seems to be as a result of the Demesne river.
Benefitting from defences (flood relief scheme works)	The lands have not benefited from any flood relief schemes but may benefit from future flood relief schemes, such as the Longford Flood Relief Scheme, as set out in Chapter 1.3.8.
Sensitivity to Climate Change	Low to moderate, Climate change scenarios inundate the site further and flood water depths around the Demesne River will increase.
Residual Risk	Low
Historical flooding	There are a series of flood events approximately 150m southeast of the lands. Floodings is as a result of the River Demesne, which is a tributary of the River Camlin. The river overflows its banks upstream of a culvert every year after heavy rain. The pipe size is inadequate to take the volume of water. The road and properties in the vicinity of the lands are affected.
Surface Water	Should further development be permitted, best practice with regards to surface water management should be implemented across the development area, and it is important to ensure that any increase in runoff is managed within the existing systems, or through new drainage networks.

Site:	OP6 South of Templemichael Terrace
Sustainable Drainage Systems (SuDS)	The OP 6 site is already largely developed but it is recommended to incorporate Sustainable Drainage Systems (SuDS) such as tree pits, swales, filter drains, green roofs, and permeable paths to enhance surface water management and improve site resilience of the site.
Commentary on Flood Risk	The site is predominantly in Flood Zone C, but it is shown partially within the CFRAM study extents of Flood Zone A and B. The flooding across the site appears to be due the Demesne River breaking its banks. The potential land uses are Social / Community / Education / Public Utility and are appropriate in this location.
Development Options	It is expected that any developments on the site will be extensions to the existing educational facility. Any new development masterplan should include a site-specific flood risk assessment, which is likely to reduce the extent of mapped flooding. It will be possible to manage any remaining flood risk through site layout (both horizontal and vertical use of space) and finished floor levels.

Appendix A FLOOD MAPPING

Site Overview:
Scale @ 1:750,000

Legend

- Longford Town Development Boundary
- Lakes [WFD]
- Watercourses [EPA]

Client
Longford County Council

Project
Longford Town SFRA

Title
Overview Map

Scale @ A3: As Shown		
Prepared by: FOC	Checked: KD	Date: March 2024
Project Director PC		
Drawing Status Draft		

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www.tobin.ie

Issue

Drawing No. 11485-DG-1000 D01

Site Overview:
Scale @ 1:750,000

Legend

- Longford Town Development Boundary
- Lakes [WFD]
- Watercourses [EPA]

Drainage District (DD)

- DD Benefitted Lands
- Land commission watercourses

0 0.5 1 km

Client
Longford County Council

Project
Longford Town SFRA

Title
OPW Drainage Districts

Scale @ A3: As Shown		
Prepared by: FOC	Checked: KD	Date: March 2024
Project Director PC		
Drawing Status Draft		

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Drawing No. 11485-DG-1001

Issue D01

N

Site Overview:
Scale @ 1:750,000

Legend

- Longford Town Development Boundary
- Lakes [WFD]
- Watercourses [EPA]
- Past Flood Extents

Past Flood Event Points

- Recurring Event
- Past Event

0 0.5 1 km

Client
Longford County Council

Project
Longford Town SFRA

Title
Past flood Events

Scale @ A3: As Shown		
Prepared by: FOC	Checked: KD	Date: March 2024
Project Director PC		
Drawing Status Draft		

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Issue

Drawing No. 11485-DG-1002 D01

N

0 0.5 1 km

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Site Overview:
Scale @ 1:750,000

Legend

- Longford Town Development Boundary
- Lakes [WFD]
- Watercourses [EPA]
- GSI Historic Groundwater Flood Map
- GSI Surface Water Flood Map
- Alluvial Soil

Client
Longford County Council

Project
Longford Town SFRA

Title
Groundwater and Surface Water flood mapping and Alluvial Soils

Scale @ A3: As Shown		
Prepared by: FOC	Checked: KD	Date: March 2024
Project Director PC		
Drawing Status Draft		

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Issue

Drawing No. 11485-DG-1003 D01

N

0 0.5 1 km

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Site Overview:
Scale @ 1:750,000

Legend

- Longford Town Development Boundary
- Lakes [WFD]
- Watercourses [EPA]
- CFRAM Modelled River Centreline

CFRAM Current Fluvial Flood Extents

- 100 year
- 1000 year

Client
Longford County Council

Project
Longford Town SFRA

Title
CFRAM Fluvial Flood Extents

Current Scenario

Scale @ A3:	As Shown	
Prepared by: FOC	Checked: KD	Date: March 2024
Project Director	PC	
Drawing Status	Draft	

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Issue

Drawing No. 11485-DG-1004

D01

N

0 0.5 1 km

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Site Overview:
Scale @ 1:750,000

Legend

- Longford Town Development Boundary
- Lakes [WFD]
- Watercourses [EPA]
- CFRAM Modelled River Centreline

CFRAM MRFS Fluvial Flood Extents

- 100 year
- 1000 year

Client
Longford County Council

Project
Longford Town SFRA

Title
CFRAM Fluvial Flood Extents

Mid-Range Future Scenario

Scale @ A3: As Shown		
Prepared by: FOC	Checked: KD	Date: March 2024
Project Director PC		
Drawing Status Draft		

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Issue

Drawing No. 11485-DG-1005 D01

N

0 0.5 1 km

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Site Overview:
Scale @ 1:750,000

Legend

- Longford Town Development Boundary
- Lakes [WFD]
- Watercourses [EPA]
- CFRAM Modelled River Centreline

CFRAM HEFS Fluvial Flood Extents

- 100 year
- 1000 year

Client
Longford County Council

Project
Longford Town SFRA

Title
CFRAM Fluvial Flood Extents

High-End Future Scenario

Scale @ A3: As Shown		
Prepared by: FOC	Checked: KD	Date: March 2024
Project Director PC		
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Drawing No. 11485-DG-1006

D01

N

0 0.5 1 km

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Site Overview:
Scale @ 1:750,000

Legend

- Longford Town Development Boundary
- Lakes [WFD]
- Watercourses [EPA]

Indicative Flood Zone

- Flood Zone A
- Flood Zone B

Client
Longford County Council

Project
Longford Town SFRA

Title
Flood Zone Mapping

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