

# Strategic Flood Risk Assessment Screening of Variation No. 5 of the Meath CDP 2021-2027

30<sup>th</sup> March 2026

Prepared for:  
Meath County Council

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comhairle chontae na mí  
*meath county council*

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This report describes work commissioned by Meath County Council. Ross Bryant and Fiona Byrne of JBA Consulting carried out this work.

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## Abbreviations

|             |  |
|-------------|--|
| 1D .....    | One Dimensional (modelling)                          |
| 2D .....    | Two Dimensional (modelling)                          |
| AEP .....   | Annual Exceedance Probability                        |
| AFA.....    | Area for Further Assessment                          |
| AONB.....   | Area of Outstanding Natural Beauty                   |
| CFRAM ..... | Catchment Flood Risk Assessment and Management       |
| DHLGH ..... | Department of Housing, Local Government and Heritage |
| FFL .....   | Finished Floor Level                                 |
| FRA.....    | Flood Risk Assessment                                |
| FRR .....   | Flood Risk Review                                    |
| GSI.....    | Geological Survey of Ireland                         |
| HEFS .....  | High End Future Scenario                             |
| HPW .....   | High Priority Watercourse                            |
| JLAP .....  | Joint Local Area Plan                                |
| LA .....    | Local Authority                                      |
| LAP .....   | Local Area Plan                                      |
| LCC.....    | Laois County Council                                 |
| LiDAR ..... | Light Detection And Ranging                          |
| MRFS.....   | Medium Range Future Scenario                         |
| NCFHM.....  | National Coastal Flood Hazard Mapping                |
| NIFM.....   | National Indicative Fluvial Mapping                  |
| OPW .....   | Office of Public Works                               |
| PFRA .....  | Preliminary Flood Risk Assessment                    |
| SAR .....   | Synthetic Aperture Radar                             |
| SFRA .....  | Strategic Flood Risk Assessment                      |
| SPR .....   | Standard percentage runoff                           |
| SUDS .....  | Sustainable Urban Drainage Systems                   |
| Tp.....     | Time to Peak   |
| WFD.....    | Water Framework Directive                            |

# 1 Introduction

Meath County Council has commissioned JBA Consulting to prepare a Strategic Flood Risk Assessment (SFRA) Addendum to the existing County Development Plan SFRA to incorporate Proposed Variation No. 5 to the Meath County Development Plan (MCDP) 2021–2027.

Following the adoption of the National Planning Framework First Revision (April 2025), the Minister issued Section 28 Guidelines in July 2025 containing updated Housing Growth Requirements. The Guidelines require local authorities to review, and if appropriate amend, their County Development Plans to align with the revised NPF and ensure sufficient zoned land is available to meet updated national housing targets.

For County Meath, this process involves amending the land use zonings in the MCDP 2021–2027 to bring the Core Strategy into compliance with a revised annual housing target of 2,942 units. The Variation primarily involves the rezoning of lands to residential use (A2 New Residential) across a range of settlements, with particular focus on Metropolitan Areas (Dunboyne, Kilcock), the Regional Growth Centre (Southern Environs of Drogheda) and the Key Town of Navan.

The Variation process will proceed under the Section 58 of the Planning and Development Act 2024 (as amended), with public display of Variation No. 5.

The purpose of this Addendum is to assess the proposed land use zoning changes and to inform zoning decisions in accordance with the Planning System and Flood Risk Management Guidelines (2009). This Addendum should be read in conjunction with the MCDP 2021–2027 SFRA (the parent SFRA), which remains the primary reference for flood risk methodology, policy context and countywide mapping.

## 1.1 Scope of Variation No. 5 Relevant to Flood Risk

Variation No.5 comprises a number of amendments to the Meath County Development Plan 2021–2027.

A summary of proposed amendments and flood risk screening summaries as part of Variation No. 5 of the MCDP 2021-2027 are summarised in Table 1-1 below.

Table 1-1 Proposed Amendments and Flood Risk Screening Summary

| Settlement               | Relevant Proposed Amendment                              | Flood Risk Screening Summary  |
|--------------------------|--|---|
| Dunboyne / Clonee / Pace | Earlier release of Post-2027 lands to A2 New Residential | Lands are within Flood Zone A and B. A detailed Flood Risk Assessment, including hydrological and hydraulic assessment to accurately define Flood Zones A and B, is required before development proceeds on lands within or adjacent to the NIFM flood extents. |

|  |   |  |
|--|---|--|
| <b>Southern Environs of Drogheda</b>             | Two parcels of Tier 1 land that are currently zoned White Lands have been identified for A2 – New Residential. (20.66 ha; 661 units)  | Both sites are in Flood Zone C under the 2025 updated CFRAM dataset. A watercourse previously mapped near Site No. 2 has been confirmed as diverted and no longer active. Zoning is appropriate on flood risk grounds.   |
| <b>Navan</b>                                     | Earlier release of Post-2027 lands: Sites No. 1–4 to A2 New Residential; Site No. 5 to E1/E3 Strategic Employment Zone (26.37 ha; 1,164 units)  | All five sites are in Flood Zone C. Sites No. 1, 2 and 3 are within the HEFS 0.1% AEP CFRAM extent; site-specific Flood Risk Assessments for these sites must address climate change flood risk in detail, including assessment of the Swan River culvert capacity and its influence on flood risk in the vicinity of the sites. Sites No. 4 and 5 are outside the HEFS 0.1% AEP extent.   |
| <b>Dunshaughlin</b>                              | Earlier release of Post-2027 lands to A2 New Residential (6.81 ha; 190 units)   | Site is in Flood Zone C. A watercourse to the west of the site is confirmed to remain within bank under CFRAM current and HEFS scenarios. Zoning is appropriate on flood risk grounds.   |
| <b>Enfield</b>                                   | Earlier release of Post-2027 lands: two parcels to A2 New Residential (4.29 ha; 120 units)  | Both sites are in Flood Zone C. No HEFS mapping is available. CFRAM HEFS extents to the east and south-west of the settlement do not affect either site. Zoning is appropriate on flood risk grounds.  |
| <b>Bettystown/Laytown/Mornington/Donacarne y</b> | Earlier release of Post-2027 lands: Sites No. 1 and 3 to A2 New Residential; Site No. 2 to G1 Community Infrastructure (Laytown-Bettystown); Site No. 1 to A2 New Residential (Donacarne y) (combined 14.7 ha; 503 units) | All proposed A2 and G1 sites are in Flood Zone C. The settlement cluster has a significant coastal and fluvial flood risk history. Two flood relief schemes are in place but settlements are treated as undefended for planning purposes. Residual risk remains in Mornington East; a further scheme has approved funding but no confirmed construction timescale. Climate change sea level rise is a material consideration given the coastal location. |
| <b>Duleek</b>                                    | Rezoning of Sites No. 1 and 2 to A2 New Residential; Site No. 3 to WL White Lands (3.32 ha; 80 units)   | All three sites are in Flood Zone C. Significant Flood Zone A and B extents associated with the River Nanny are present to the east and south-   |

|                    |  |   |
|--------------------|--|---|
|                    |  | east of the settlement but do not affect the proposed sites. The Duleek Flood Relief Scheme (1998) is in place; the settlement is treated as undefended for planning purposes. No HEFS mapping is available.                  |
| <b>Stamullen</b>   | Rezoning of de-zoned lands to A2 New Residential (5.11 ha; 143 units)  | Site is in Flood Zone C, well removed from the River Delvin flood corridor. No HEFS mapping is available. Zoning is appropriate on flood risk grounds.  |
| <b>Athboy</b>      | Regularisation of community use lands and rezoning of replacement parcel to A2 New Residential (3.63 ha; 90 units) | Sites are outside Flood Zones A and B and the HEFS 0.1% AEP extent. The Athboy River corridor runs through the settlement centre but does not affect the proposed rezoning lands. Zoning is appropriate on flood risk grounds |
| <b>Carlanstown</b> | Rectification of mapping error: rezoning of omitted parcel to A2 New Residential (0.8 ha; 20 units)                | Site is in Flood Zone C. NIFM extents associated with the Moynalty River to the south-west, including under the HEFS 0.1% AEP scenario, do not reach the site. Zoning is appropriate on flood risk grounds.                   |

## 1.2 Policy and Guidance Update

There have been no substantive changes to national flood risk planning guidance since publication of the parent SFRA. Flood risk assessment continues to be undertaken in accordance with The Planning System and Flood Risk Management Guidelines (2009) and Circular PL2/2014. The parent SFRA anticipated that updates would be required as changes are made to the Plan, and this Addendum should be read as an extension of that approach rather than a replacement of the adopted SFRA methodology or policy framework.

The key development at national planning policy level since the adoption of the parent SFRA is the NPF First Revision (April 2025), which is now the operative national planning framework. From a flood risk perspective, the revised NPF introduced a strengthened suite of flood risk National Policy Objectives. NPO 78 is the primary flood risk objective, requiring planning authorities to apply the Sequential Approach in accordance with the 2009 Guidelines, avoid inappropriate development in flood risk areas that cannot satisfy the Justification Test, and take account of climate change impacts on flooding. NPOs 79, 80 and 81 require that all new development incorporates Sustainable Drainage Systems (SuDS) and nature-based solutions to manage surface water runoff to at least the greenfield rate. These NPOs are consistent with and reinforce the approach set out in the parent SFRA.

There have also been updates to the national flood mapping datasets available since preparation of the parent SFRA. The National Indicative Fluvial Mapping (NIFM) dataset,

produced by the OPW, provides second-generation indicative fluvial flood maps for catchments not covered by the CFRAM Programme and supersedes the first-cycle PFRA indicative mapping for those areas. For coastal flood risk, the National Coastal Flood Hazard Mapping (NCFHM, 2021), also produced by the OPW, provides updated national-scale coastal flood extents for a range of AEP events and climate change scenarios, and supersedes the Irish Coastal Protection Strategy Study (ICPSS) as the primary national coastal dataset. CFRAM data remains the primary dataset where available, with NIFM and NCFHM applied as the best available alternatives for fluvial and coastal assessments respectively. Both datasets are available on floodinfo.ie.

### 1.3 Terms of Reference

Under the Planning System and Flood Risk Management Guidelines (2009), the purpose of an SFRA is to provide a broad assessment of all types of flood risk to inform strategic land use planning decisions. SFRAs enable the planning authority to undertake the Sequential Approach, including the Justification Test, allocate appropriate sites for development, and identify how flood risk can be reduced as part of the development plan process.

It is important that the Variation continues to fulfil the requirements of the Guidelines, which require flood risk management to be integrated into spatial planning policies at all levels of the planning process. The scope of this SFRA Addendum is to:

- Undertake flood risk screening of the proposed zoning changes across County Meath;
- Review and interpret Flood Zone A and B extents using the most up-to-date available datasets, including CFRAM, NIFM, NCFHM, OPW flood mapping, Flood Relief Scheme mapping and post-CFRAM flood defence information;
- Apply the Sequential Approach and, where required, the Justification Test at Development Plan stage; and
- Provide flood risk management guidance to inform zoning decisions and development management, including finished floor levels, residual risk, and Sustainable Drainage Systems.

### 1.4 Methodology

This report should be read in conjunction with the SFRA prepared for the MCDP 2021–2027 (the parent SFRA). The parent SFRA sets out the planning context and general methodology for strategic flood risk assessment, and describes the study area and flood risk data available for County Meath.

Assessment of flood risk is based on Flood Zones derived from the best available dataset, supported by information on any completed flood defence infrastructure or site-specific flood risk assessments where available. The climate change layer shown in the figures in Section 2.2 represents a combined High End Future Scenario (HEFS) flood extent, derived from the 0.1% AEP outlines from the best available dataset where appropriate. This layer illustrates the potential spatial extent of flooding under extreme future climate change conditions.

Flood risk management continues to be informed by flood levels, application of freeboard, and assessment of residual risk through site-specific Flood Risk Assessment.

## 2 Flood Risk Assessment

### 2.1 Study Area

County Meath is located in the Eastern and Midland Region. The county contains settlements at Metropolitan Area, Regional Growth Centre, Key Town and lower tier levels within the regional settlement hierarchy, reflecting its strategic location adjoining Dublin. The county is traversed by several significant river systems, including the Boyne and its tributaries in the north and west, the Nanny and Delvin systems along the east coast, and the Tolka and its tributaries in the south. Coastal flood risk is present along the eastern seaboard, principally at East Meath (Laytown-Bettystown, Donacarney) and the Southern Environs of Drogheda.

Land use zoning objectives are included for settlements across County Meath as defined in the MCDP 2021–2027. The settlements subject to proposed zoning changes under Variation No. 5 are set out in Table 2-1 below. This table reflects the settlement hierarchy established in the MCDP 2021–2027, consistent with the NPF First Revision (April 2025) and the RSES for the Eastern and Midland Region (2019).

Table 2-1 Settlements Covered by Proposed Variation No. 5

| Settlement Tier                    | Settlement   |
|------------------------------------|--|
| <b>Metropolitan Area</b>           | Dunboyne/Clonee/Pace, Kilcock                                      |
| <b>Regional Growth Centre</b>      | Southern Environs of Drogheda                                      |
| <b>Key Town</b>                    | Navan  |
| <b>Self-Sustaining Growth Town</b> | Dunshaughlin, Enfield, East Meath (Laytown-Bettystown, Donacarney) |
| <b>Self-Sustaining Town</b>        | Athboy   |
| <b>Town</b>                        | Duleek, Stamullen  |
| <b>Village</b>                     | Carlanstown  |

### 2.1.1 Review of Flood Zone Data

This section reviews the sources of Flood Zone mapping used in this SFRA Addendum. As set out in the RSES Regional Flood Risk Appraisal and under the Planning Guidelines, the Flood Zone mapping for County Meath is principally derived from CFRAM where available. A number of settlements included in this Variation are not covered by the CFRAM, and in these cases the best available alternative dataset has been used, as described in Table 2-2. All sources of available flood mapping were reviewed and professional judgement applied in determining the most appropriate dataset for each settlement.

Advice on climate change allowances for flood risk management in Ireland is set out in the OPW Flood Risk Management Climate Change Sectoral Adaptation Plan. Two scenarios are considered: the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS). Climate change is presented using the HEFS in this Addendum, as defined in Table 2-4, consistent with the approach set out in the parent SFRA and the requirement under NPO 78 of the NPF First Revision to take account of the potential impacts of climate change on flood risk.

Table 2-2 Available Flood Data for Flood Zone Development

| Description   | Coverage   | Robustness | Comment on Usefulness  |
|---|--|------------|--|
| <b>CFRAM Study – including FEM FRAMS</b>                | Areas for Further Assessment (AFAs) along modelled river reaches in County Meath | High       | Best available dataset where it exists. Provides Flood Zones A and B, flood extents and design water levels for current and future (MRFS/HEFS) scenarios. Detailed 1D/2D modelling underpins the outputs. Site-specific FRAs still required at planning application stage, but CFRAM informs finished floor level decisions. CFRAM does not cover all watercourses; NIFM is used where CFRAM is unavailable. |
| <b>Kilcock Site Specific FRA</b>                        | Kilcock  | High       | Site specific FRA including detailed hydraulic modelling for new residential. Work undertaken by the CFRAM and original Kilcock FRAM consultant. Detailed 1D/2D modelling underpins the outputs, MRFS climate change.  |
| <b>Dunshaughlin Site Specific FRA</b>                   | West of Dunshaughlin   | High       | Site specific FRA including hydraulic modelling for local planning application, confirmed Flood Zone A/B is contained within channel.  |
| <b>National Indicative Fluvial Mapping — NIFM (OPW)</b> | Watercourses not covered by CFRAM, catchments $\geq 5 \text{ km}^2$              | Moderate   | Second-generation indicative fluvial flood maps produced by the OPW (2019–2020). Higher quality than first-cycle PFRA indicative mapping. Used to define Flood Zones where CFRAM is not available. No modelled water levels or depths — extents only. NIFM should be validated through site visits and professional judgement before informing zoning decisions. NIFM may                                    |

|   |  |            |  |
|---|--|------------|--|
|   |  |            | overestimate flood extents in some locations; site-specific FRA required to confirm risk.  |
| <b>National Coastal Flood Hazard Mapping — NCFHM (OPW, 2021)</b>                        | National coastline and tidal areas                             | Moderate   | Updated national-scale coastal flood extent and depth maps produced by the OPW, using extreme water level outputs from the Irish Coastal Wave and Water Level Modelling Study (ICWWS 2018). Covers 0.1%–50% AEP events for present-day and climate change scenarios (MRFS, HEFS and higher-end sea level rise). Supersedes the ICPSS as the primary national coastal dataset. Applied for coastal and tidal settlements in this Variation. |
| <b>Historical Flood Event Data</b>  | Various — OPW floodinfo.ie records and Local Authority sources | Indicative | Can be used to validate flood zones and identify non-fluvial flooding. Useful background information for site-specific FRAs. Note: the database is not exhaustive — absence of a record does not indicate absence of flood risk.   |
| <b>Other datasets for the wider county are set out under the Parent SFRA Section 3.</b> |  |            |  |

Table 2-3 Other Available Data

| Description  | Coverage        | Robustness | Comment on Usefulness   |
|--|-----------------|------------|---|
| <b>GSI Groundwater and Surface Water Flood Information</b> | Full Study Area | Moderate   | Provides historic and predictive flood extents for groundwater and surface water flooding. Useful for settlements with groundwater or pluvial flood risk. |
| <b>Alluvial Soils Maps</b>                                 | Full Study Area | Low        | Indicative of potential flood risk in areas with no other mapping. Not used as a primary flood zone dataset.  |
| <b>Groundwater Vulnerability Maps</b>                      | County-wide     | Moderate   | Initial assessment of groundwater vulnerability. Provides a screening tool for use in FRA.  |

### 2.1.2 Climate Change Allowances

The OPW Flood Risk Management Climate Change Sectoral Adaptation Plan sets out the framework for applying climate change allowances in flood risk assessments in Ireland. Two scenarios are applied in this Addendum: the MRFS and the HEFS. The HEFS is used as the primary planning scenario, consistent with the approach in the parent SFRA and with NPO 78 of the NPF First Revision. Allowances are set out in Table 2-4 below.

Table 2-4 Allowances for Future Climate Change Scenarios

| Criteria   | MRFS  | HEFS  |
|--|---|---|
| <b>Extreme Rainfall Depths</b>   | +20%  | +30%  |
| <b>Flood Flows</b>   | +20%  | +30%  |
| <b>Mean Sea Level Rise</b>   | +500mm  | +1000mm   |
| <b>Land Movement</b>   | -0.5mm / year*                                      | -0.5mm / year*                                      |
| <b>Urbanisation</b>  | No General Allowance - Review on Case by Case Basis | No General Allowance - Review on Case by Case Basis |
| <b>Forestation</b>   | -1/6 Tp**   | -1/3 Tp**+10% SPR***                                |
| Notes:<br>* Applicable to the southern part of the country only (Dublin - Galway and south of this).<br>** Reduction in the time to peak (Tp) to allow for potential accelerated runoff that may arise as a result of drainage of afforested land.<br>*** Add 10% to the Standard Percentage Runoff (SPR) rate; this allows for increased runoff rates that may arise following felling of forestry. |   |   |

### 2.1.3 Implications for finished floor levels and development management

In areas where there are flood relief schemes that have not yet been completed, there are to be no new or infill highly vulnerable residential development permitted within Flood Zone A or Flood Zone B prior to completion of the Flood Relief Scheme.

Where development within Flood Zone A or Flood Zone B is limited to extensions, alterations, or change of use of existing buildings, finished floor levels shall be set relative to the undefended design flood level, with an allowance for climate change and an appropriate freeboard applied. Indicative minimum finished floor levels are set out in Table 2-5.

Until any flood relief scheme is completed and operational, the relevant settlement shall be treated as undefended for the purposes of flood risk assessment and development management. The finished floor level approach set out in Table 2-5 shall apply to all developments.

If minimum FFLs are not able to be met then bedrooms shall not be permitted at ground floor level within Flood Zone A or Flood Zone B prior to completion of the Flood Relief Scheme. Flood-resilient construction materials and fittings shall be incorporated where development is proposed within these zones.

Table 2-5 Recommended Minimum Finished Floor Levels

| Scenario   | Finished Floor Level to be Based On  |
|--|--|
| <b>Fluvial – undefended</b>  | 1% AEP flood level + climate change allowance + 300 mm freeboard   |
| <b>Coastal / tidal – undefended</b>  | 0.5% AEP flood level + climate change allowance + 300 mm freeboard, having regard to NCFHM outputs and site-specific FRA |
| For defended sites then refer to guidance in Section 4 of the Parent SFRA. |  |

## 2.2 Settlement Review

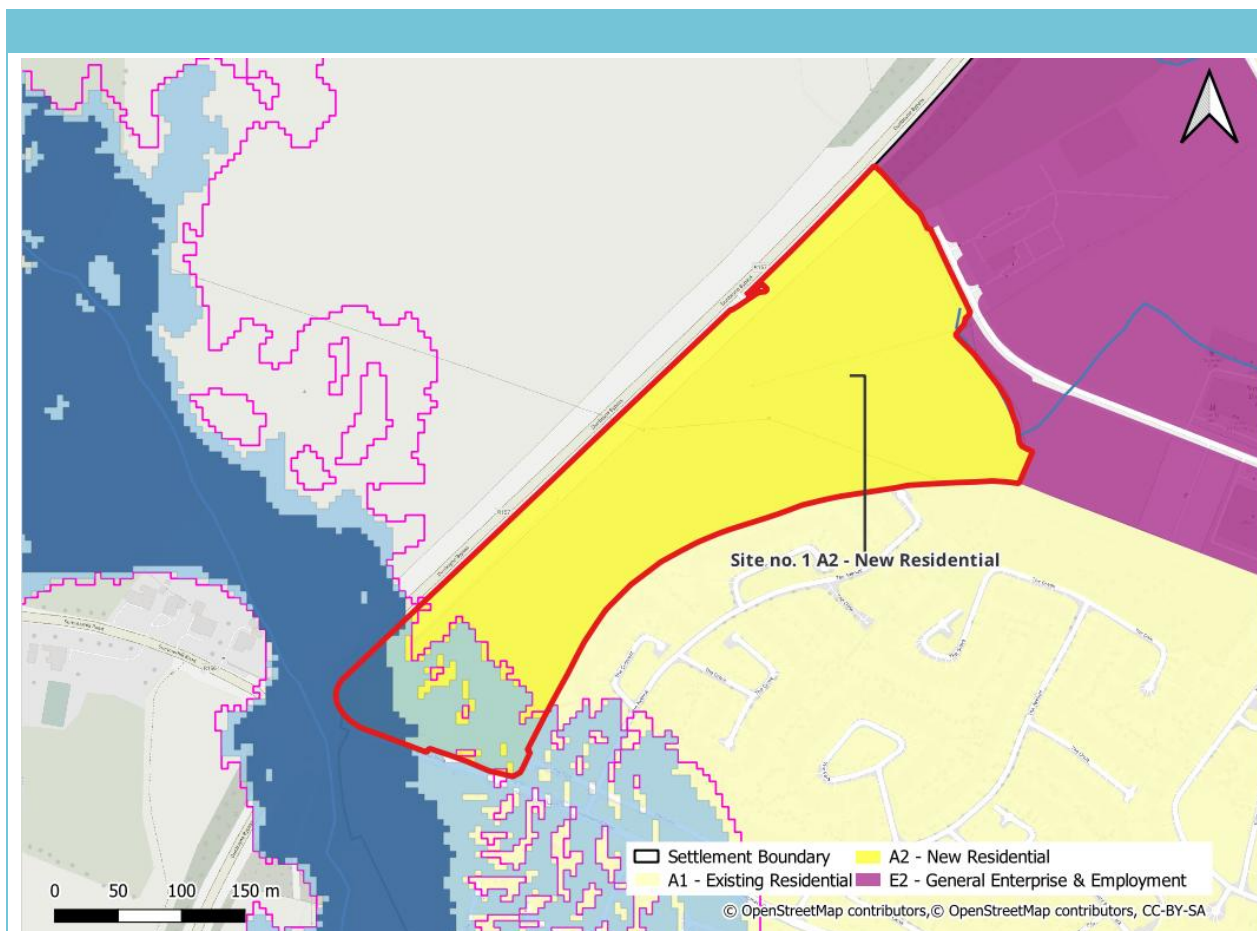
A strategic approach to flood risk management is important in County Meath given the varied nature of flood risk across the county, with scales of risk and vulnerability differing between inland fluvial settlements and coastal locations. Following the Planning Guidelines, development should always be located in areas of lowest flood risk first, and only when it has been established that there are no suitable alternative options should development (of the lowest vulnerability) proceed. Consideration may then be given to factors which moderate risks, such as flood defences, followed by suitable flood risk mitigation and site management measures.

It is important to note that whilst it may be technically feasible to mitigate or manage flood risk at site level, strategically it may not be a sustainable approach.

A summary of flood risk associated with each proposed zoning change is provided in the settlement reviews below. The flood risk commentary indicates whether a particular zoning, in Flood Zone A or B, will require the Plan-Making Justification Test to be applied and passed. When carrying out a site-specific FRA, or when planning applications are being assessed, it is important to note that not all uses within a zoning objective will be appropriate on flood risk grounds.

A summary of flood risks and mitigation associated with each zoning objective is provided within the relevant settlement zoning objectives set out in the Settlement Review.

## 2.2.1 Dunboyne/Clonee/Pace

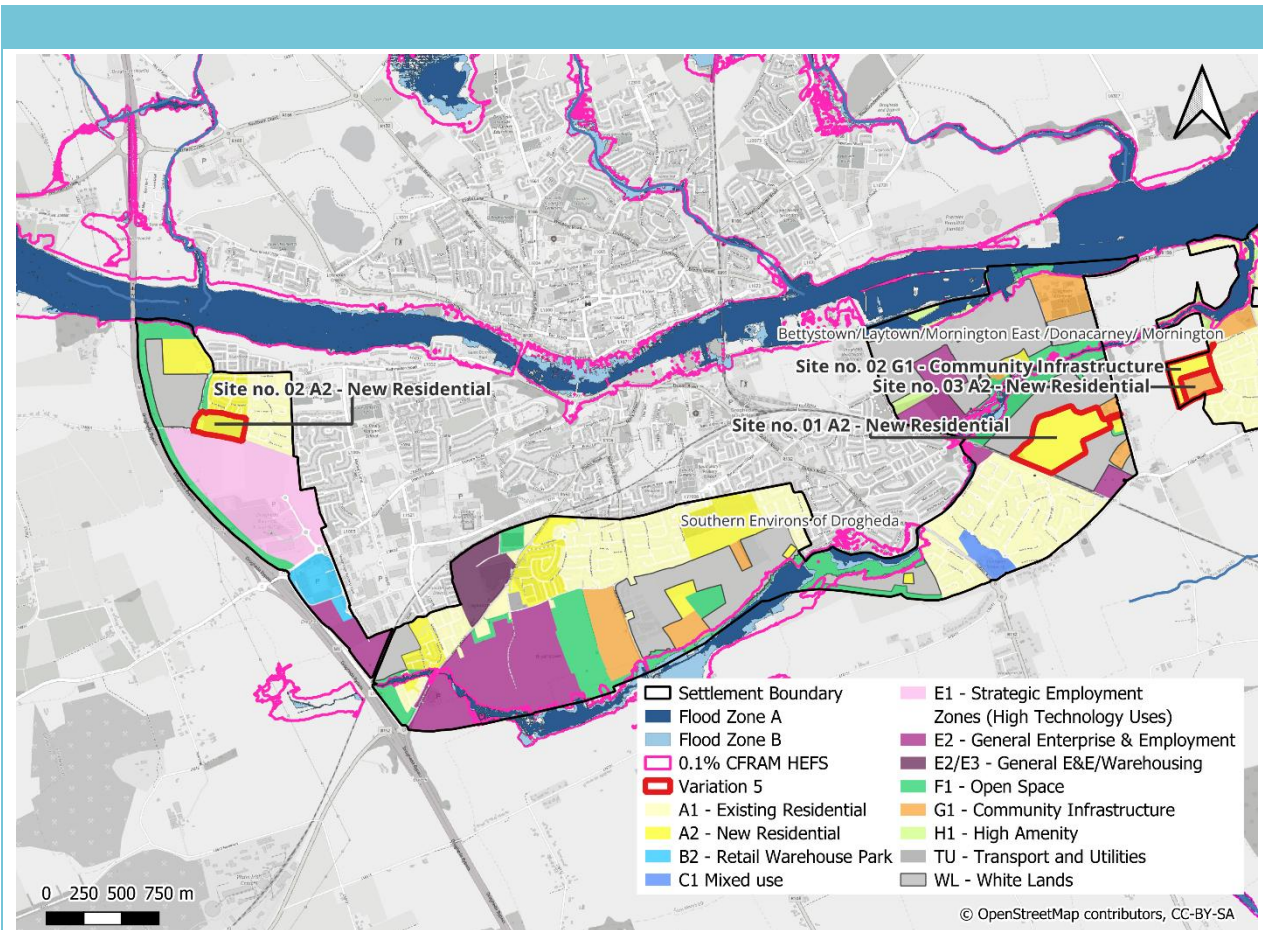


The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                          |  |
|--------------------------|--|
| <p>Flood Zone Data</p>   | <p>The primary dataset for this site is National Indicative Fluvial Mapping (NIFM).</p> <p>Updated CFRAM modelling of the Tolka catchment does not extend along the watercourse reach relevant to the A2 – New Residential Lands, as opposed to downstream areas of Dunboyne. NIFM is therefore the best available dataset at this time for the area within the redline boundary (A2 lands).</p> <p><i>Note: NIFM is a broadscale indicative dataset based on remotely sensed terrain modelling. It is considered likely that the NIFM overestimates flood extents in this location. A more detailed flood study will be required to accurately define flood zones prior to any development proceeding on lands shown to be within Flood Zones A or B in the NIFM mapping.</i></p> |
| <p>Historic Flooding</p> | <p>A significant flood event in November 2002 caused extensive inundation in Dunboyne and Clonee during an extreme rainfall event exceeding a 1% AEP (100-year) 48-hour rainfall scenario. Flooding was associated with restricted downstream conveyance at the N3 culvert on the Tolka, causing storage at the confluence of the Tolka and Castle Stream, inundation of residential areas in Dunboyne, marginal flooding of the commercial centre from the Castle Stream, and further flooding extending through Clonee towards Littlepace. A similar event was recorded in 2000. Historic flood event data is available on floodinfo.ie.</p>   |

|                |  |
|----------------|--|
| Climate Change | <p>The NIFM HEFS extents show marginal increases in flood extent across most of the settlement relative to the current scenario. More significant increases in extent are indicated at the Tolka/Castle Stream confluence to the south-east of the settlement under extreme future climate change conditions. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.</p>   |
| Conclusion     | <p>Dunboyne, Clonee and Pace are located in the south-east of County Meath, at the confluence of the Tolka River and its tributary the Castle Stream, which flows through the centre of Dunboyne. The Tolka system and its tributaries are a significant source of flood risk in this area. The combined settlements function as a Metropolitan Area under the MCDP 2021–2027 and the NPF First Revision.</p> <p>Proposed Variation No. 5 involves the earlier release of Post-2027 lands already identified for future residential development within the MCDP 2021–2027. Portions of the proposed A2 New Residential zoning fall within the NIFM 1% AEP and 0.1% AEP flood extents.</p> <p>Given that the Tolka CFRAM update model does not extend along the relevant reach, NIFM is the best available mapping at this time. However, as NIFM is likely to overestimate flood extents in this location. Given this fact, the proposed A2 New Residential zoning is considered appropriate on a precautionary basis.</p> <p>The Justification Test cannot pass for the proposed A2 New Residential lands shown to be within the NIFM Flood Zone A/B, on the basis that the lands are not located within or adjoining the core of the settlement. On this basis the following is recommended:</p> <ul style="list-style-type: none"> <li>• A site-specific Flood Risk Assessment (as per DCE OBJ 23), including detailed hydrological and hydraulic assessment, shall be required to accompany any planning application for development on lands shown to be within or adjacent to the NIFM flood extents.</li> <li>• The site specific FRA shall be in accordance with guidance under Section 4.5 to 4.11 of the Parent SFRA.</li> <li>• Highly vulnerable residential development shall not be permitted on lands confirmed to be within Flood Zone A or B. Lands confirmed within Flood Zone A or B following detailed assessment shall be designated to an appropriate water-compatible or less vulnerable use, such as open space.</li> <li>• Any future development shall be subject to a site-specific Flood Risk Assessment in accordance with the guidance in the parent SFRA and shall be required to incorporate SuDS in accordance with NPOs 79–81 of the NPF First Revision and MCC policy.</li> <li>• Development proposals shall not impede existing flood flow paths or cause flood risk impacts to surrounding areas.</li> </ul> <p>With the above approach in place, flood risk will be managed in line with approved MCDP Policy, SuDS approach and the guidance provided within the Meath County Development Plan SFRA 2021-2027.</p> |

## 2.2.2 Southern Environs of Drogheda



The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |  |
|-------------------|--|
| Flood Zone Data   | <p>CFRAM (Eastern CFRAM Study).</p> <p>The CFRAM dataset was updated by the OPW in 2025. The update removed a previously mapped watercourse and its associated flood extents in the vicinity of Site No. 2, following confirmation that the channel had been diverted and no longer operates as an active watercourse. The updated CFRAM mapping is the best available dataset for both sites and has been used as the basis for flood zone delineation in this Addendum.</p>                  |
| Historic Flooding | <p>No historical flood events have been recorded on either site. The closest recorded instance of flooding in the area is at Colp West, located to the south-east of Site No. 1, where low-lying land is subject to recurring pluvial flooding following heavy rainfall. No flood extents are available for this event.</p>  |
| Climate Change    | <p>CFRAM HEFS mapping shows moderate increases in flood extent along the Stagrennan River relative to the current scenario. Along the River Boyne within the Meath area of management, changes in flood extent under the HEFS are minor. Neither site is within the HEFS 0.1% AEP flood extent. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.</p> |
| Conclusion        | <p>The River Boyne and the Stagrennan River define the principal flood risk constraints within the Southern Environs of Drogheda, with fluvial</p>   |

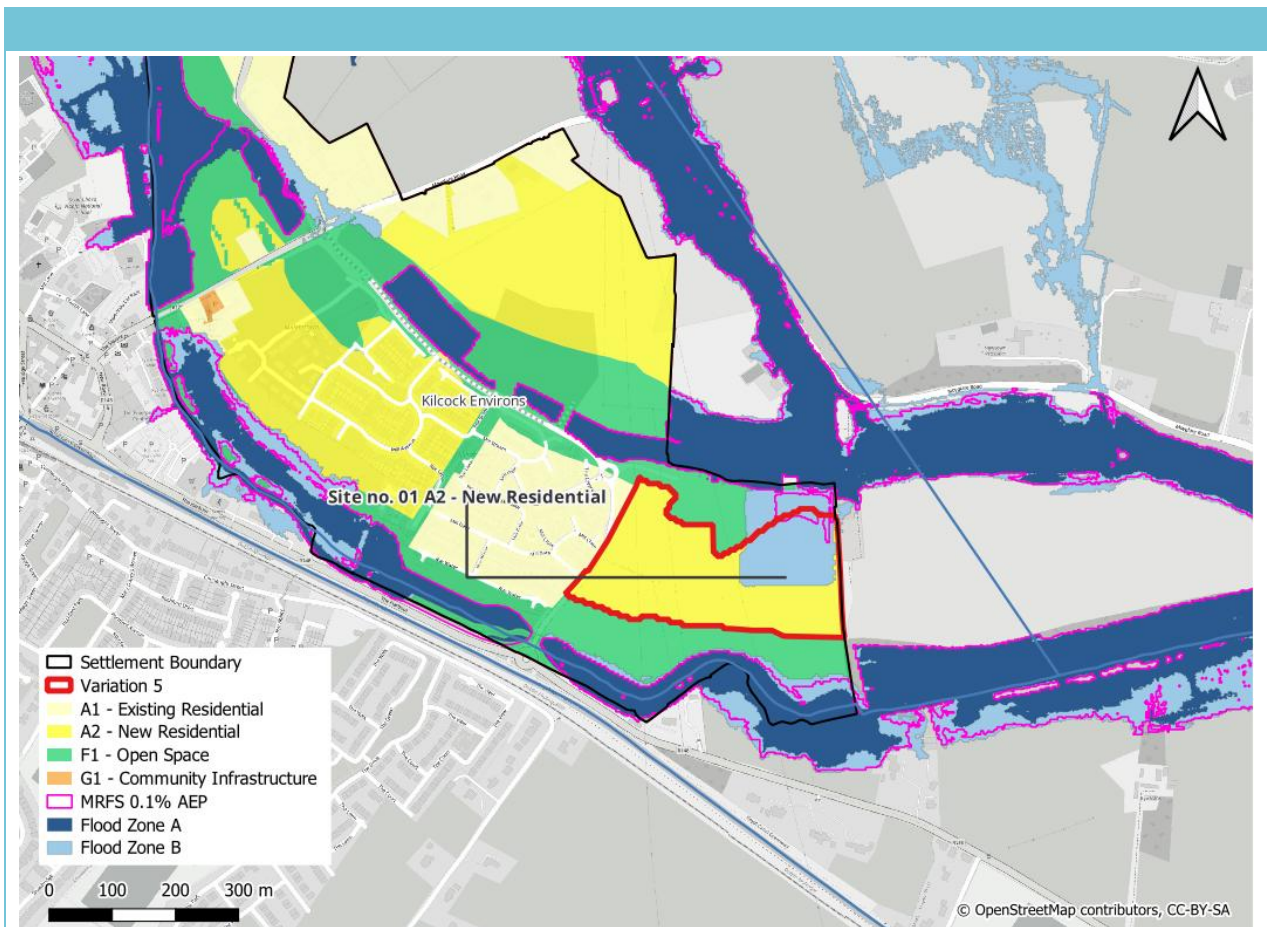
and tidal influences affecting lands along the river corridor. The Meath side of the settlement remains undefended for planning purposes; the Drogheda and Baltray Flood Relief Scheme is a Louth County Council and OPW scheme currently at Stage 1 (Scheme Development and Preliminary Design), with no consented defences in place and no scheme elements extending to the Meath bank.

Both Site No. 1 and Site No. 2 are located outside Flood Zones A and B and are not within the HEFS 0.1% AEP flood extents in the updated 2025 CFRAM mapping. The 2025 CFRAM update confirms that the previously mapped watercourse in the vicinity of Site No. 2 has been diverted and removed from the flood mapping; the proposed zoning for Site No. 2 does not therefore introduce additional flood risk or increase exposure to flooding.

The proposed A2 New Residential zoning is appropriate for both sites on flood risk grounds.

With the above approach in place, flood risk will be managed in line with approved MCDP Policy, SuDS approach and the guidance provided within the Meath County Development Plan SFRA 2021-2027.

### 2.2.3 Kilcock Environs



The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |   |
|-------------------|---|
| Flood Zone Data   | <p>Primary dataset: Site specific FRA hydraulic model (bespoke; supersedes CFRAM for this settlement).</p> <p>Updated Flood Zone and climate change GIS datasets derived from the Kilcock FRAM hydraulic model have been confirmed and issued to Meath County Council. These datasets are the best available at this time and form the basis for flood zone delineation in this Addendum.</p>   |
| Historic Flooding | <p>Kilcock has a documented history of fluvial flooding from the River Rye Water. Recurring flooding from the River Rye Water is noted along with events in August 2008 and November 2000. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.</p>   |
| Climate Change    | <p>The MRFS climate change GIS dataset has been issued and this is the basis for climate change assessment for this settlement. The proposed residential land has an overlap with the MRFS 1% AEP flood extent in the updated mapping. Increased surface water runoff resulting from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.</p> |
| Conclusion        | <p>The River Ryewater River flows through the centre of the settlement. Proposed Variation No. 5 involves the earlier release of Post-2027 lands, rezoning them to A2 New Residential in response to the housing target requirements of the NPF Implementation: Housing Growth</p>  |

Requirements Guidelines (July 2025). The flood data source and flood risk findings for the site are set out in the review table below.

The Kilcock Flood Risk Assessment and Management Study (RPS 2025 – referred to as Kilcock FRAMS) has created mitigation which incorporates flood storage areas with embankments, culverts and flow control as well as land raising to facilitate residential development within the scheme area.

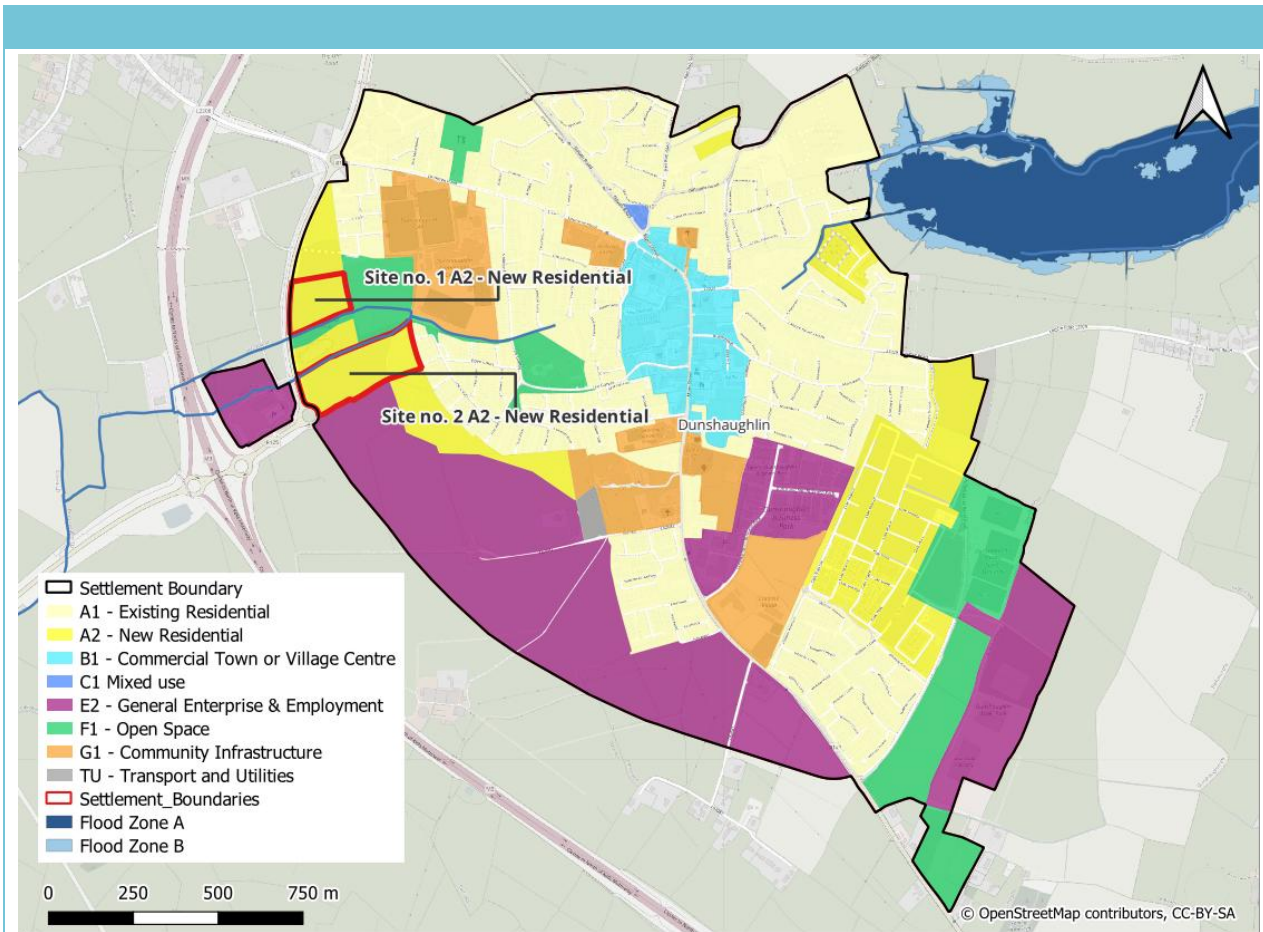
The proposed A2 New Residential zoning, which is incorporated within Area G as outlined by the Kilcock FRAM is located in Flood Zone B and C. Within the lands designated Flood Zone B is minor overlap with the MRFS 1% AEP flood extent in the northeast of the site. The lands impacted by Flood Zone B and climate change are designated as a storage area within the Kilcock FRAMS and will not form part of the residential lands.

A site-specific Flood Risk Assessment for this site shall be required to accompany any further planning applications (as per Spot Objective KIL OBJ 5B) and must:

- Include detailed Flood Risk Assessment incorporating 1D/2D hydraulic modelling, including full consideration of the FRAMS/flood mitigation measures and inclusion of climate change impacts.
- Confirm that development can be designed to an appropriate finished floor level and that there are no negative impacts to the local area from any such new development.
- Incorporate SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.

With the above approach in place, flood risk will be managed in line with approved MCDP Policy, SuDS approach and the guidance provided within the Meath County Development Plan SFRA 2021-2027.

## 2.2.4 Dunshaughlin



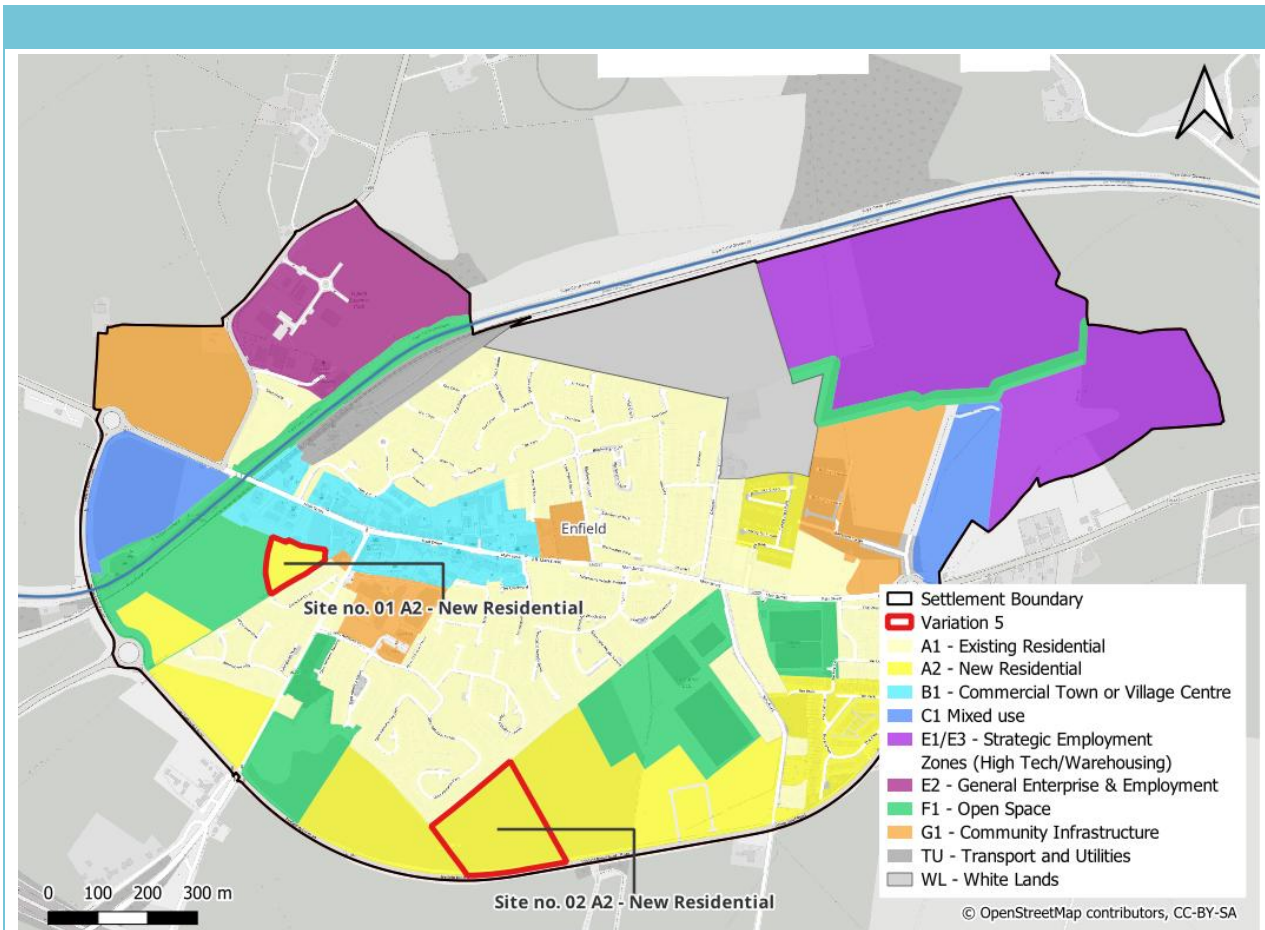
The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |  |
|-------------------|--|
| Flood Zone Data   | CFRAM, bespoke model for SSFRA   |
| Historic Flooding | A flood event is recorded in November 2000 associated with a tributary of the River Boyne in the vicinity of Dunshaughlin. No flood events have been recorded on the proposed rezoning site.   |
| Climate Change    | HEFS mapping does not show any increase in flood extent onto the proposed rezoning site. The watercourse to the west remains within bank under the HEFS 0.1% AEP scenario. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.  |
| Conclusion        | Proposed Variation No. 5 involves the earlier release of Post-2027 lands, rezoning them to A2 New Residential in response to the housing target requirements of the NPF Implementation: Housing Growth Requirements Guidelines (July 2025).<br>A site-specific Flood Risk Assessment shall be required to accompany any planning application. For Site No. 1 or No.2, this should include measures to manage flood risk from the adjacent watercourse and incorporate a minimum 10m development setback from the top of bank on either side of the channel (as per DNS OBJ 14). It should also assess climate change and residual risk (blockage). It is noted that a site specific FRA was completed for the lands downstream of Site No.2 and confirmed that flow remains in bank for Flood Zone A and B through Site No.2 therefore flood risk will largely be managed by the |

10m buffer requirement.

With the above approach in place, flood risk will be managed in line with approved MCDP Policy, SuDS approach and the guidance provided within the Meath County Development Plan SFRA 2021-2027.

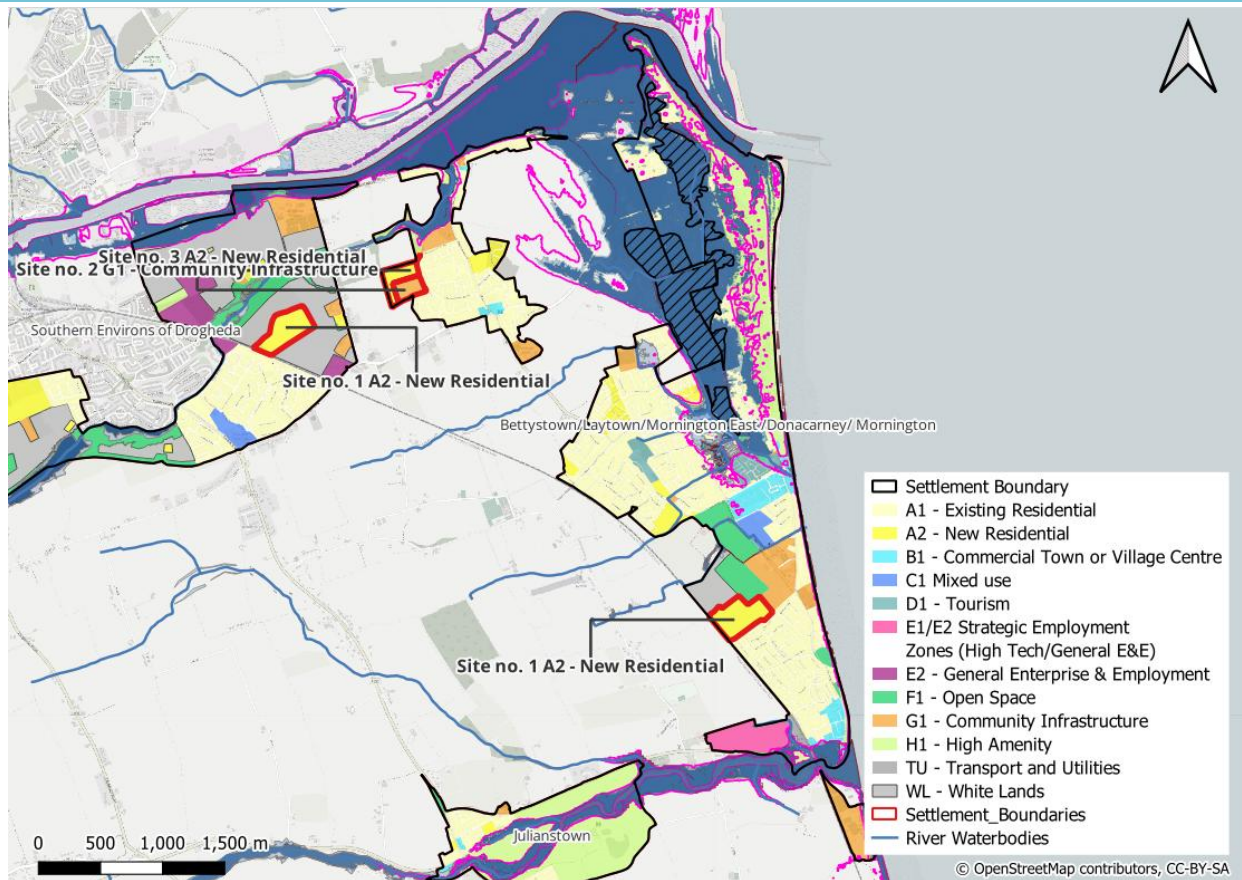
2.2.5 Enfield



The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |   |
|-------------------|---|
| Flood Zone Data   | Indicative flood mapping along drain to the north of the settlement.  |
| Historic Flooding | Flooding after heavy rainfall is known to occur, however, flooding has not been reported at either site.  |
| Climate Change    | No climate change flood mapping is available for the proposed rezoning sites. Given that both sites are outside mapped Flood Zones A and B, and given the absence of any recorded flood history, the lack of HEFS mapping does not alter the flood zone classification for planning purposes. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.  |
| Conclusion        | <p>Sites No. 1, Site No. 2, and Site No. 3 are located outside Flood Zones A and B. The CFRAM HEFS extents to the east and south-west of the settlement do not extend to either site. The surface water drain to the east maps an appropriate setback from a field drain but does not affect the proposed rezoning lands.</p> <p>The proposed A2 New Residential zoning is appropriate on flood risk grounds for all three sites.</p> <p>Flood risk can be managed in line with approved MCDP Policy and the guidance provided within the Meath County Development Plan SFRA 2021-2027, with site-specific Flood Risk Assessment required at development management stage where appropriate and strict accordance to SuDS policy.</p> |

2.2.6 Bettystown/Laytown/Mornington East /Donacarney/ Mornington

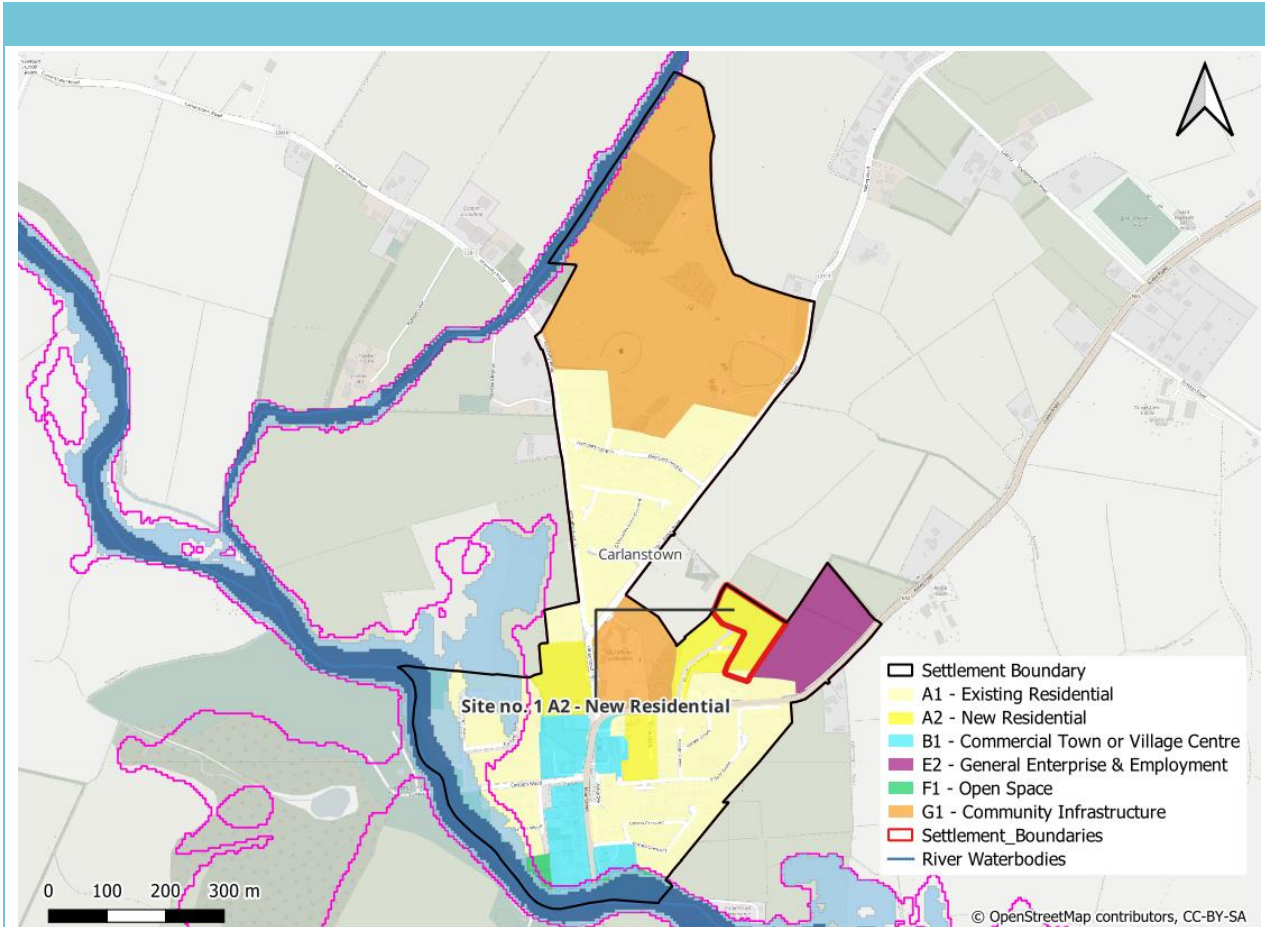


The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                          |   |
|--------------------------|---|
| <p>Flood Zone Data</p>   | <p>A site-specific flood study has been prepared for Laytown, informed by the River Nanny estuary flood risk. This study supersedes all other datasets for the Laytown site and is the primary basis for flood zone delineation.</p> <p>The Fingal East Meath Flood Risk Assessment and Management Study (FEM FRAMS), CFRAM and the National Coastal Flood Hazard Mapping (NCFHM, 2021) are the primary datasets in the rest of the settlement.</p>   |
| <p>Historic Flooding</p> | <p>The settlement cluster has a significant flooding history:</p> <p>Northlands Estate, Bettystown: flooding recorded in October 2011 and September 2012, associated with coastal and fluvial sources. The Northlands Flood Relief Scheme was subsequently constructed to address this risk.</p> <p>Mouth of the River Nanny, Laytown: recurring tidal and estuarine flooding associated with the Nanny estuary.</p> <p>Álvera Heights: recurring surface water flooding following heavy rainfall events.</p> <p>Mornington East: tidal flooding recorded in 2000 and 2002. The area experienced further significant flooding in August and October 2023, which prompted a senior-level review by the OPW and Meath County Council.</p> <p>No historical flood events have been recorded on any of the proposed rezoning sites.</p> |

|                       |   |
|-----------------------|---|
| <p>Climate Change</p> | <p>Given the coastal location of this settlement cluster, there is a significant potential impact from climate change, particularly from sea level rise under the HEFS scenario. NCFHM climate change extents illustrate the potential increase in coastal flood hazard under MRFS and HEFS scenarios.</p> <p>All proposed rezoning sites are located outside the HEFS 0.1% AEP coastal flood extents. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and MCC policy.</p>  |
| <p>Conclusion</p>     | <p>Two flood relief schemes are in place within the East Meath settlement cluster. The Mornington Flood Relief Scheme (completed 2012/2013) provides protection to 162 properties to a design standard of 0.5% AEP coastal and 1% AEP fluvial. The Northlands (Bettystown) Flood Relief Scheme (substantially completed 2017/2018) provides protection against coastal and fluvial flooding at Northlands Estate. The Mornington scheme is maintained annually by the OPW. The Northlands Scheme is maintained annually by MCC. Notwithstanding these measures, residual flood risk remains in both areas and the settlements are treated as undefended for the purposes of land use zoning in this Addendum, consistent with the Planning Guidelines approach.</p> <p>In Mornington East, the outflanking of existing defences has prompted a review of the FEM FRAMS coastal flood mapping. An additional flood relief scheme has received approved funding of less than €1 million to address undefended risk in Mornington East; however, no construction timescale has been confirmed and the area is assessed as undefended at this time. A culvert upgrade forming an extension to the Northlands FRS is completed. An OPW investigation into the August and October 2023 flood events in the Mornington/Bettystown area is complete and is under consideration by the OPW and Meath County Council.</p> <p>All proposed A2 New Residential and G1 Community Infrastructure sites across the East Meath settlement cluster are located in Flood Zone C and outside the HEFS 0.1% AEP coastal and fluvial flood extents. The proposed zonings are appropriate on flood risk grounds. Flood risk can be managed in line with approved MCDP Policy and the guidance provided within the Meath County Development Plan SFRA 2021-2027, with site-specific Flood Risk Assessment required at development management stage where appropriate and strict accordance to SuDS policy.</p> |

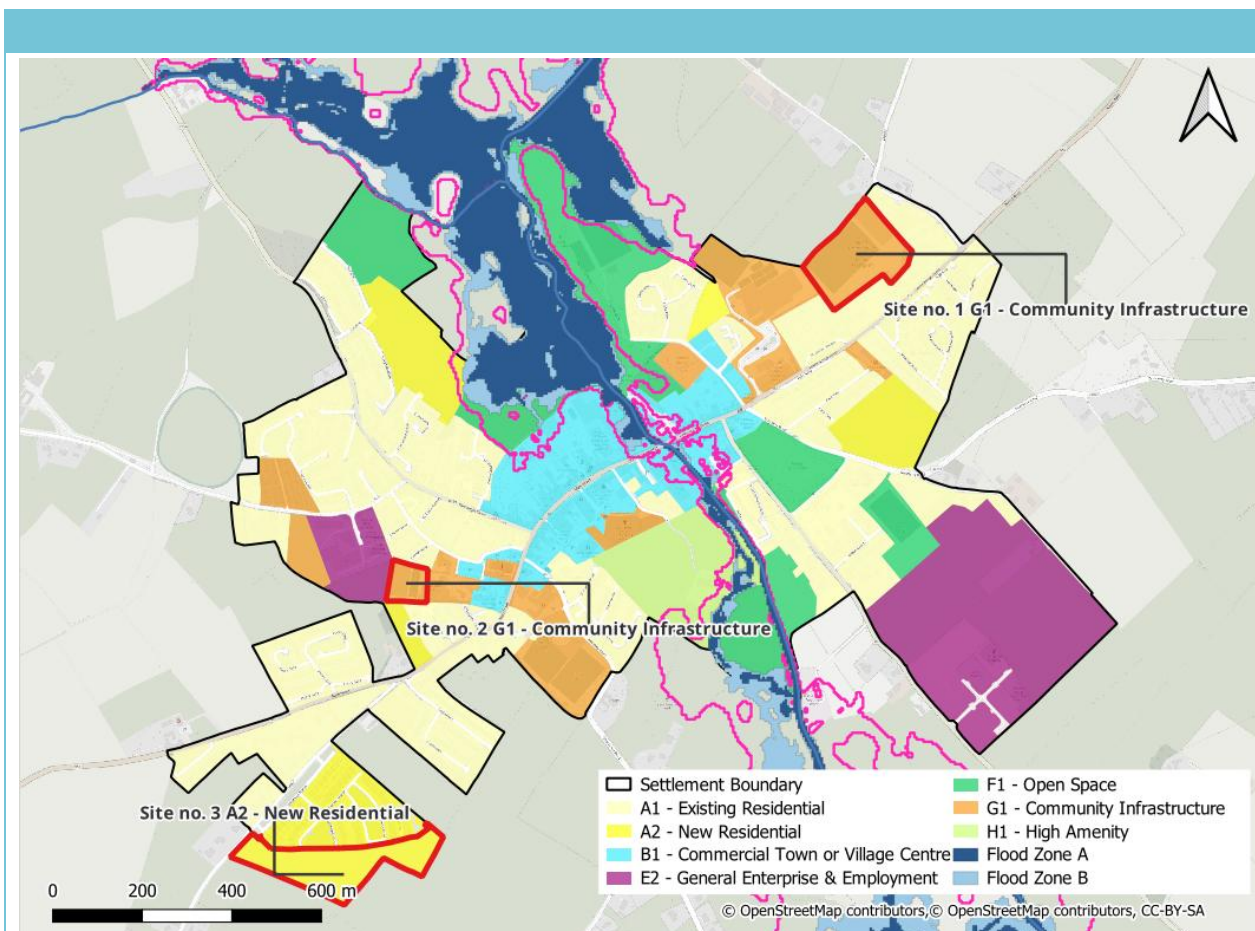
## 2.2.7 Carlanstown



The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |   |
|-------------------|---|
| Flood Zone Data   | NIFM  |
| Historic Flooding | No historic records of flooding were found.   |
| Climate Change    | NIFM HEFS 0.1% AEP mapping shows moderate increases in flood extent to the west of the site relative to the current scenario, associated with the Moynalty River floodplain. These extents do not reach the proposed rezoning site. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision.  |
| Conclusion        | <p>Carlanstown is a small village in the north-west of County Meath. The Moynalty River flows along the south-west boundary of the settlement, with significant fluvial flood extents mapped to the west and south of the village.</p> <p>Site No. 1 is located outside Flood Zones A and B and is not within the NIFM HEFS 0.1% AEP flood extent. The proposed A2 New Residential zoning is appropriate on flood risk grounds.</p> <p>Flood risk can be managed in accordance with the policies of the MCDP 2021–2027 and this SFRA. A site-specific Flood Risk Assessment shall be required to accompany any planning application where appropriate and strict accordance to SuDS policy.</p> |

## 2.2.8 Athboy



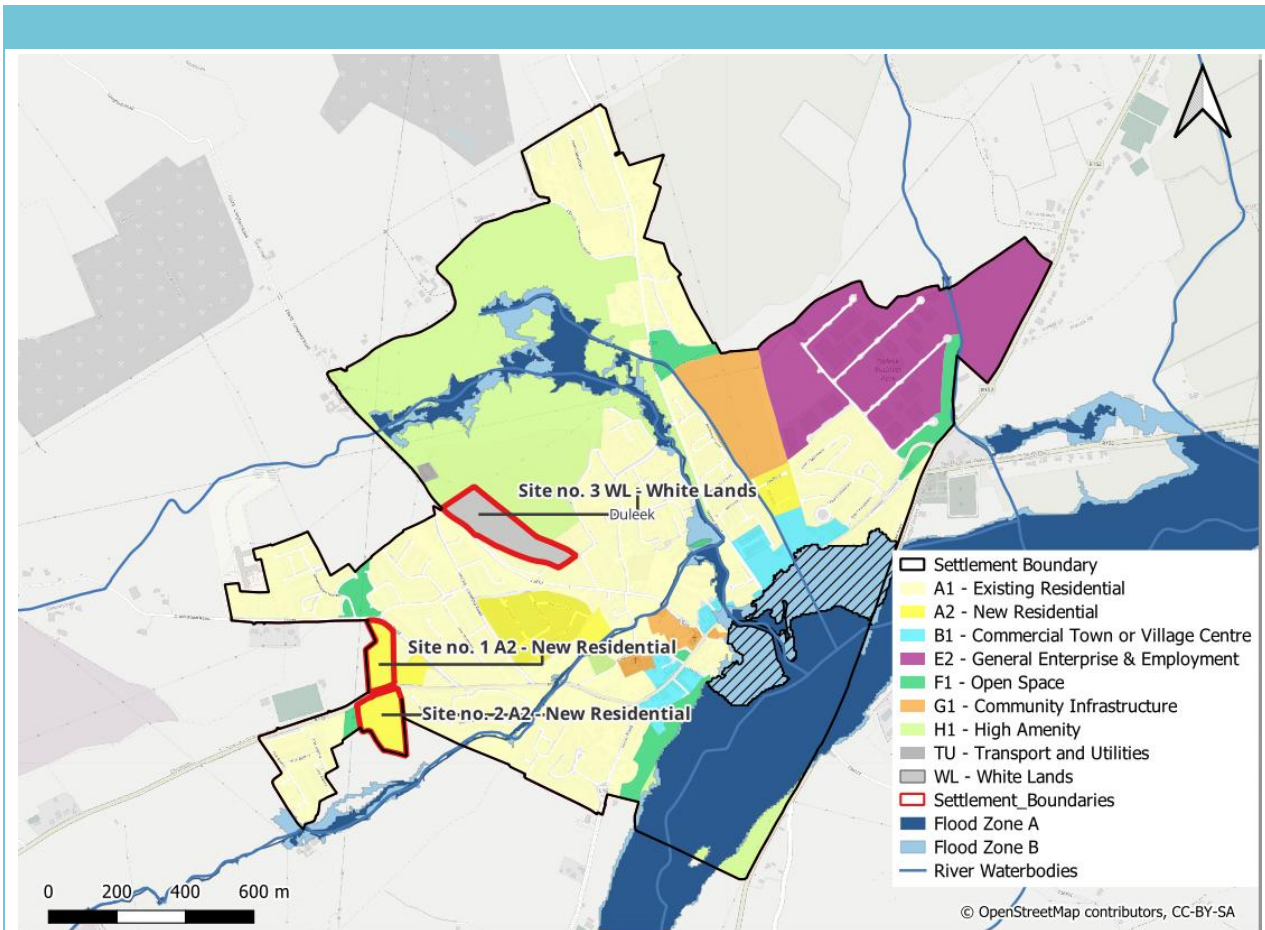
The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |  |
|-------------------|--|
| Flood Zone Data   | CFRAM  |
| Historic Flooding | A recurring flood record exists at Mullaghstones, where low-lying land is noted to flood following heavy rainfall. No historical flood events have been recorded on the proposed rezoning sites.   |
| Climate Change    | CFRAM HEFS mapping shows increases in flood extent along the Athboy River corridor under future climate scenarios. The proposed rezoning sites are not within the HEFS 0.1% AEP flood extents. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.  |
| Conclusion        | <p>Athboy is a town in the west of County Meath, designated as a Self-Sustaining Town under the MCDP 2021–2027. The Athboy River flows through the centre of the settlement, with existing residential development on either bank and areas of open space and high amenity adjoining the channel. Flood Zones A and B are mapped along the river corridor through the settlement.</p> <p>Amendments V01 and V02 provide for the rezoning of lands from A2 – New Residential to G1 – Community Infrastructure to reflect the established use of the lands. Amendment V03 provides for a new parcel of A2 – New Residential lands to support housing delivery in Athboy, in response to the housing target requirements of the NPF Implementation: Housing Growth Requirements Guidelines (July 2025).</p> |

The proposed rezoning sites are located outside Flood Zones A and B and the HEFS 0.1% AEP flood extents. The proposed A2 New Residential zoning is appropriate on flood risk grounds and does not introduce additional flood risk or increase exposure to flooding.

Flood risk can be managed in accordance with the policies of the MCDP 2021–2027 and this SFRA. A site-specific Flood Risk Assessment shall be required to accompany any planning application where appropriate and strict accordance to SuDS policy.

2.2.9 Duleek



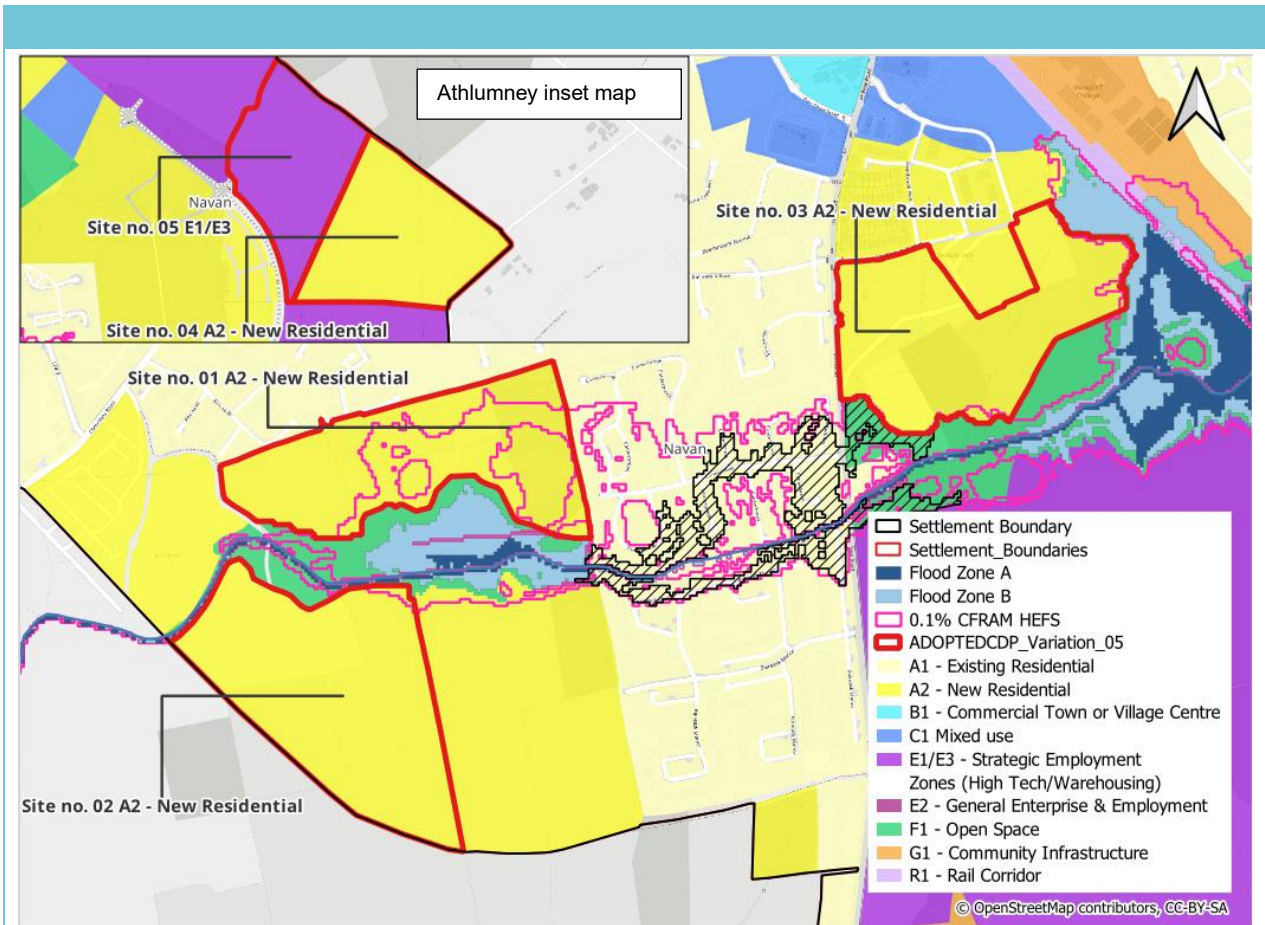
The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |   |
|-------------------|---|
| Flood Zone Data   | FEMFRAMS  |
| Historic Flooding | The River Nanny has a documented flooding history in Duleek including a significant flood event in 1993 which prompted the construction of the Duleek Flood Relief Scheme. No historical flood events have been recorded on any of the proposed rezoning sites.   |
| Climate Change    | No climate change flood mapping is available at this time. Given that all proposed sites are outside Flood Zones A and B, the absence of HEFS mapping does not alter the flood zone classification for planning purposes. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.  |
| Conclusion        | Duleek is a town in the south-east of County Meath, designated as a Town under the MCDP 2021–2027. The River Nanny flows through the settlement and has historically presented a significant source of fluvial flood risk. A tributary watercourse approaches from the north and confluences with the River Nanny in the centre of the settlement, contributing to the combined flood extents mapped in that area. Significant Flood Zone A and B extents are present along the River Nanny corridor to the east and south-east of the settlement. Existing development is protected by the Duleek Flood Relief Scheme, completed in 1998.<br>All three proposed rezoning sites — Site No. 1 A2, Site No. 2 A2, and |

Site No. 3 WL — are located outside Flood Zones A and B. The proposed zonings are appropriate on flood risk grounds and do not introduce additional flood risk or increase exposure to flooding.

Flood risk can be managed in accordance with the policies of the MCDP 2021–2027 and this SFRA. A site-specific Flood Risk Assessment shall be required to accompany any planning application where appropriate and strict accordance to SuDS policy.

## 2.2.10 Navan



The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |  |
|-------------------|--|
| Flood Zone Data   | CFRAM  |
| Historic Flooding | Navan has an extensive flooding history. Significant flood events have been recorded in 2000, 2002, 2008, 2009 and 2013, associated with the River Boyne, River Blackwater and Swan River. Several instances of recurring flooding are also on record, including recurring flooding on the Trim Road associated with the Swan River culvert, in proximity to Sites No. 1, 2 and 3. No historical flood events have been recorded on any of the proposed rezoning sites.  |
| Climate Change    | Significant Flood Zone A and B extents are mapped along the River Boyne, River Blackwater and Swan River corridors throughout the settlement. All five proposed rezoning sites are located in Flood Zone C under current CFRAM mapping.  |
| Conclusion        | Navan is the county town of Meath, designated as a Key Town under the MCDP 2021–2027 and the NPF First Revision. The River Boyne and River Blackwater confluences within the settlement, and the Swan River flows through an area south of the town centre before discharging to the Boyne. Flood risk in Navan is significant and well documented, arising from a combination of fluvial sources. Flood zone extents associated with the Boyne, Blackwater and Swan River corridors are mapped throughout the settlement. A flood alleviation scheme has been implemented at Balreask Manor to reduce risk from the Swan River.<br>Proposed Variation No. 5 involves the earlier release of Post-2027 |

lands, rezoning five sites: Sites No. 1–4 to A2 New Residential, and Site No. 5 to E1/E3 Strategic Employment Zone. The flood data source and flood risk findings for the sites are set out in the review table below. All five proposed rezoning sites are located in Flood Zone C under current CFRAM mapping. The proposed A2 New Residential and E1/E3 zonings are appropriate on flood risk grounds.

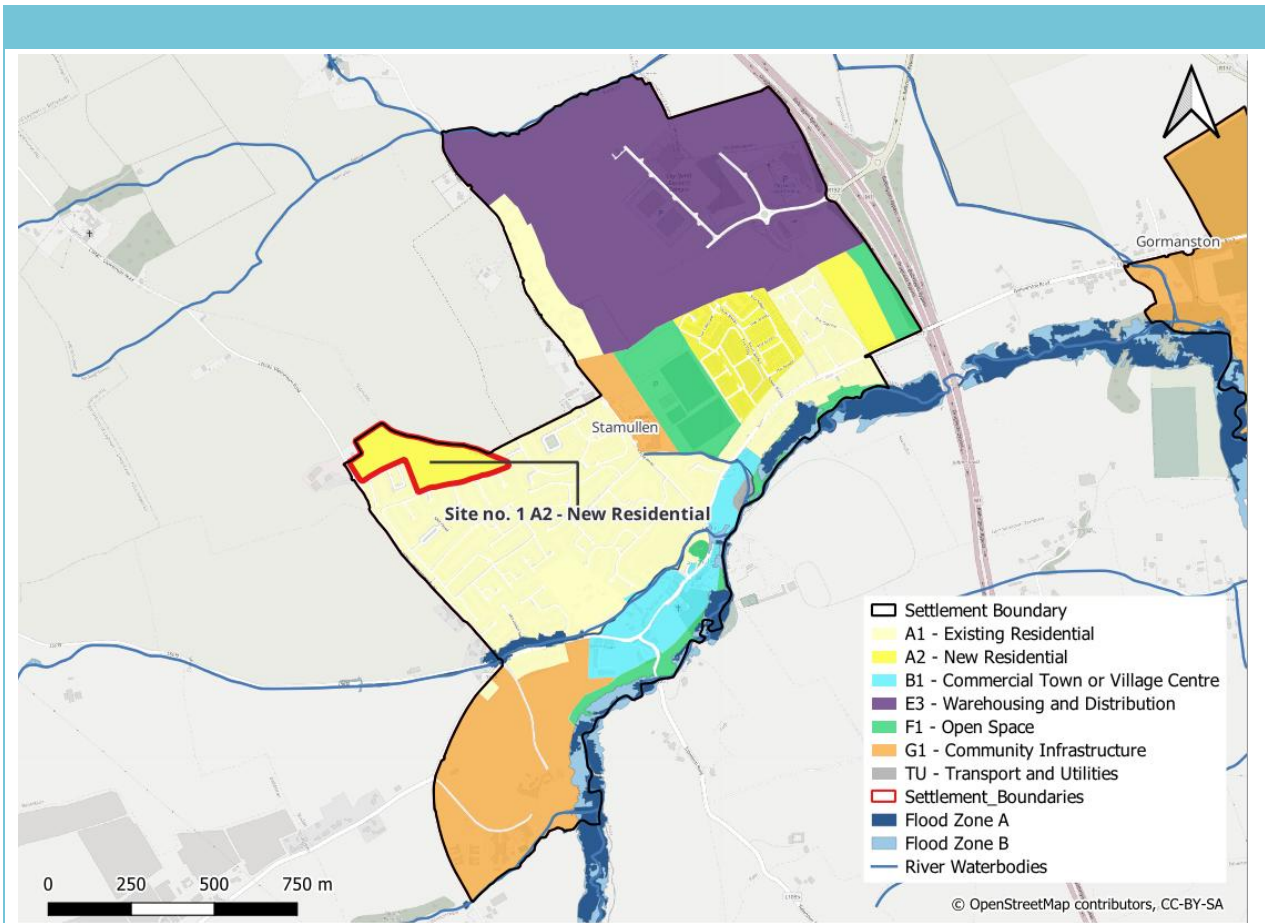
Notwithstanding the Flood Zone C classification, Sites No. 1, 2 and 3 are located within the HEFS 0.1% AEP CFRAM extent. Site-specific Flood Risk Assessments for these sites shall be required to accompany any planning applications (as per Spot Objective NAV OBJ 5B) and must:

- By means of a detailed Flood Risk Assessment incorporating 1D/2D hydraulic modelling, assess the Swan River and all culverts from Canterbrook to the railway line (and any planned or existing mitigation) and its influence on flood risk in the vicinity of the A2 lands.
- Address climate change flood risk having regard to the HEFS 0.1% AEP extent and confirm that development can be designed to an appropriate finished floor level and that there are no negative impacts to the existing local housing from any such new development.
- Incorporate SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.

Sites No. 4 and 5 are outside the HEFS 0.1% AEP extent and the above does not apply.

Flood risk can be managed in accordance with the policies of the MCDP 2021–2027 and this SFRA.

## 2.2.11 Stamullen



The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity. Areas that benefit from defences are annotated separately.

|                   |   |
|-------------------|---|
| Flood Zone Data   | FEM FRAMS   |
| Historic Flooding | The River Delvin is recorded as overflowing its banks two to three times per year following heavy rainfall. A local road in the settlement is also recorded as liable to flooding. No historical flood events have been recorded on the proposed rezoning site.   |
| Climate Change    | No climate change flood mapping is available for Stamullen from the FEM FRAMS dataset. Given that the site is well outside Flood Zones A and B, the absence of HEFS mapping does not alter the flood zone classification for planning purposes. Increased surface water runoff from development shall be managed through SuDS in accordance with NPOs 79–81 of the NPF First Revision and the drainage requirements of the MCDP 2021–2027.  |
| Conclusion        | <p>Stamullen is a settlement in the south-east of County Meath, designated as a Town under the MCDP 2021–2027. The River Delvin flows through the southern part of the settlement, with Flood Zone A and B extents mapped along its corridor. One site is proposed for rezoning under Variation No. 5. Proposed Variation No. 5 involves the earlier release of Post-2027 lands, rezoning Site No. 1 to A2 New Residential. The site is located to the west of the settlement, well removed from the River Delvin flood corridor.</p> <p>Site No. 1 is located well outside Flood Zones A and B and the River Delvin flood corridor. The proposed A2 New Residential zoning is appropriate on flood risk grounds.</p> |

Flood risk can be managed in accordance with the policies of the MCDP 2021–2027 and this SFRA. A site-specific Flood Risk Assessment shall be required to accompany any planning application where appropriate and strict accordance to SuDS policy.

**Offices at**

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Doncaster  
Dublin  
Edinburgh  
Exeter  
Glasgow  
Haywards Heath  
Leeds  
Limerick  
Newcastle upon Tyne  
Newport  
Peterborough  
Portsmouth  
Saltaire  
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