McCloy Consulting

Strategic Flood Risk Assessment

for the Proposed Kildare County Development Plan Variation: Northwest Quadrant (Naas)

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1 INTRODUCTION

1.1 Terms of Reference

This Strategic Flood Risk Assessment (SFRA) was commissioned by Kildare County Council (Kildare CC) to inform the preparation of the Proposed Kildare County Development Plan Variation: Northwest Quadrant (Naas) (hereafter referred to as the 'Plan Area').

1.2 Statement of Authority

This assessment and report have been prepared and reviewed by the following qualified professionals:

- Mistaya Langridge *BEng (Hons) MASc MIEI* – Senior Engineer with experience in hydrology, hydraulic modelling, and flood risk assessment.
- Paul Singleton *BEng (Hons) MSc CEng MIEI* – Associate Director and Chartered Engineer specialising in flood risk assessment, hydrology, surface water management, and SuDS design, and a recognised industry professional providing training courses on these topics to the public and private sectors in Ireland and the UK.
- Kyle Somerville *BEng (Hons) CEng MIEI* – Director and Chartered Engineer specialising in flood risk assessment, hydrology, hydraulic modelling, surface water management, and SuDS design.

1.3 Purpose and Scope

The purpose of this SFRA is to identify all potential sources of flooding within the Plan Area and assess their associated risk to people and property. The SFRA also aims to determine the suitability of the Plan Area for future development and set out appropriate flood protection and mitigation measures where appropriate.

This SFRA comprises Stage 1 and Stage 2 assessments, as defined in 'The Planning System and Flood Risk Management – Guidelines for Planning Authorities' (i.e., the 'OPW Guidelines') and accompanying Technical Appendices published in 2009 by the Office of Public Works and Department of Environment, Heritage, and Local Government.

This report is intended to allow Kildare CC to apply the Sequential Approach and, where necessary, Justification Test(s) to identify appropriate areas / sites within the Plan Area for development and identify how flood risk can be reduced as part of the Framework Plan process.

This SFRA is intended for 'plan making' only and not to assess the risk to specific development proposals. Risk to any future development within the Plan Area would be assessed separately by a site-specific Flood Risk Assessment (SSFRA) submitted in support of a planning application. While any future SSFRA may be informed by flood hazard information determined by this SFRA, it would need to be made specific to the proposed development.

It is noted that this report is designed to supplement / be consistent with the existing flood risk guidance set out in the Naas LAP 2021-2027 SFRA but present updated flood risk data and associated implications since the Naas LAP FRA was published.

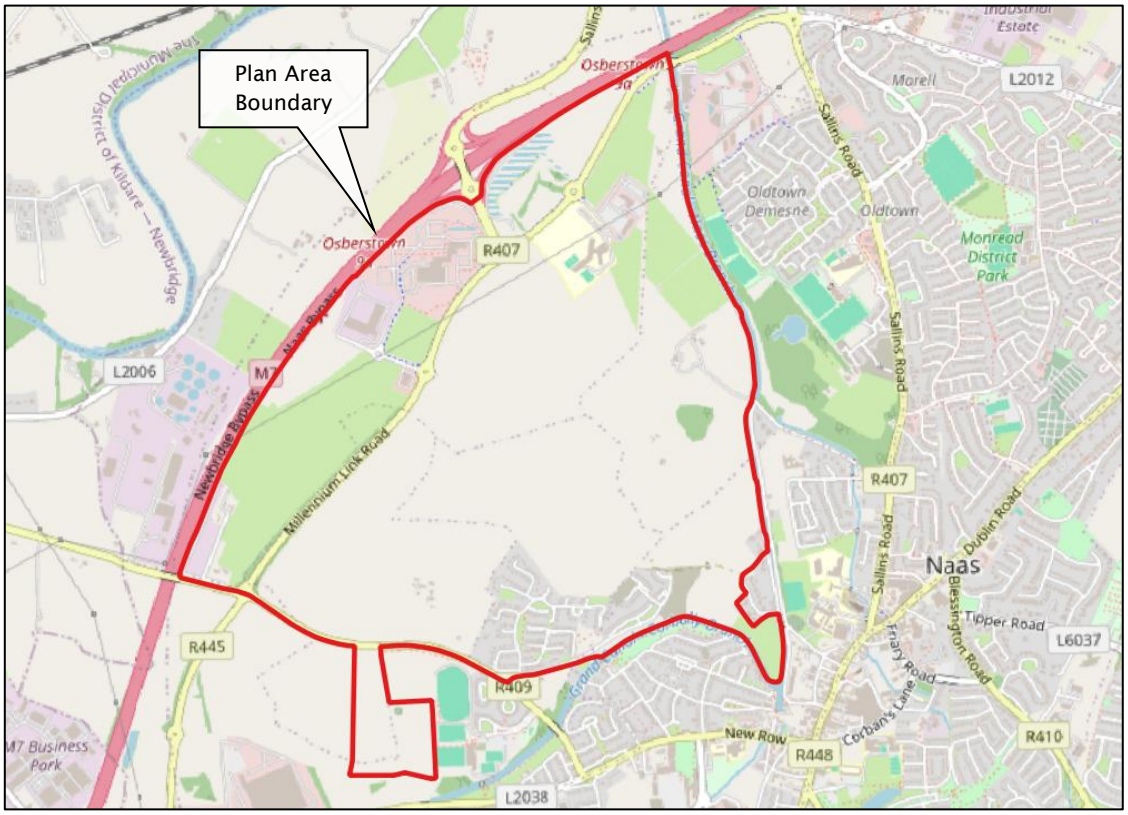
This document should be read in conjunction with the Northwest Quadrant (Naas) Surface Water Management Plan, as prepared on behalf of Kildare CC, to inform the Proposed Kildare County Development Plan Variation: Northwest Quadrant (Naas).

2 PLAN AREA INFORMATION

2.1 Location and Boundary

The Plan Area relates to the North West Quadrant (Naas) lands, including Ploopluck and Oldtown townlands, as shown in Figure 2.1. The Plan Area is bounded by the M7 (Newbridge Bypass / Naas Bypass) to the north/ north-west and R409 to the west. The Grand Canal run along the southern and eastern boundary.

Figure 2.1: Plan Area Location and Boundary



2.2 Existing Land Use

The Plan Area has an area of c. 300 ha and currently comprises both developed and undeveloped lands. There are several existing and new residential developed areas to the south adjacent to the Grand Canal, as well as several commercial premises primarily along the M7, as shown in Figure 2.2. Naas Community College is located in the eastern portion of the Plan Area.

Figure 2.2: Plan Area Context

2.3 Land Use Zoning Objectives

2.3.1 Existing Land Use Zoning

The statutory planning context to the Northwest Quadrant (Naas) is defined in the Naas Local Area Plan 2021-2027. Existing zoning objectives for the Plan Area, as shown in Figure 2.3 and described in Table 2.1, as set out in the Naas Local Area Plan 2021-2027. Lands surrounding the Plan Area have similar zoning objectives.

It is noted the current land use strategy represents a holding position and places the majority of the Plan Area lands in "Strategic Reserve" pending the preparation of a masterplan to inform a revised land use strategy (required by Objective NWQ 1.1 of the Naas Local Area Plan), The Northwest Quadrant (Naas) Framework Masterplan has been prepared by KCC and is being integrated into the statutory planning framework by means of a Variation to the County Development Plan (rather than an Amendment to the Local Area Plan). The Variation replaces the Naas Local Area Plan land use strategy with a coherent land use strategy that will guide the development of the urban extension from 2026 until build out. The new land use strategy takes account of the updated flood extent mapping developed as part of the Naas Flood Relief Scheme project.

Figure 2.3: Land Use Zoning Objectives from the Naas Local Area Plan 2021-2027

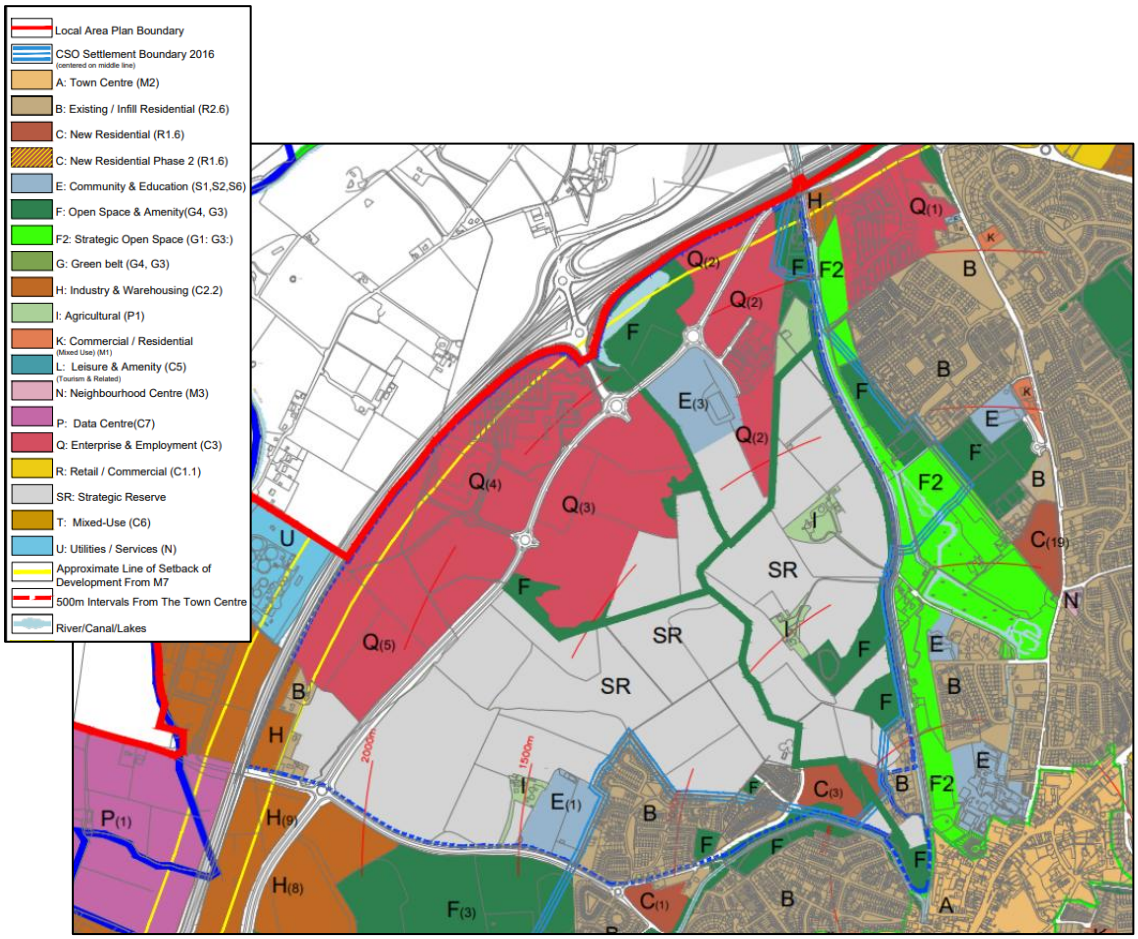


Table 2.1: Land Use Zoning Objectives from the Naas Local Area Plan 2021-2027

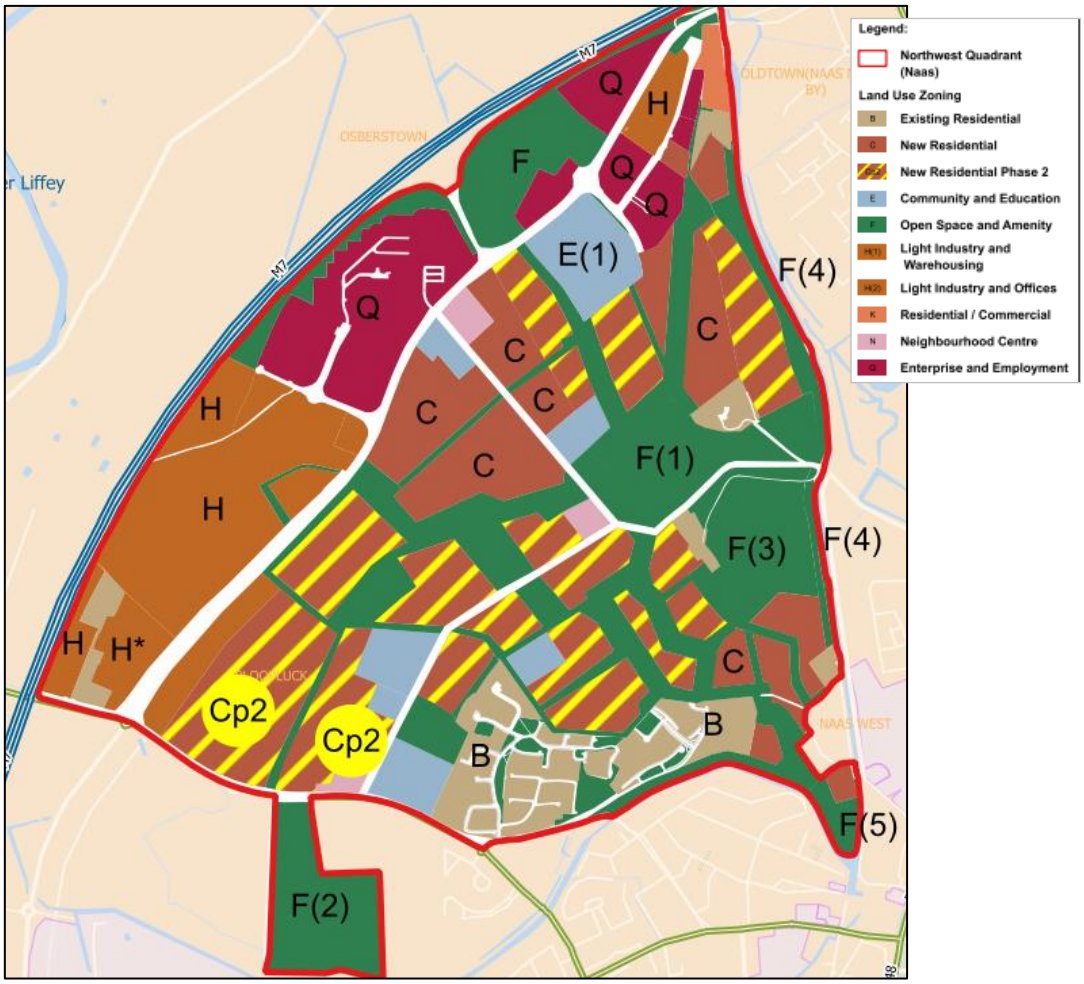
Ref.	Zoning Objective Type	Zoning Objective Description
A	Town Centre	To protect, improve and provide for the future development of the town centre.
B	Existing Residential/Infill	To protect and enhance the amenity of established residential communities and promote sustainable intensification.
C	New Residential	To provide for new residential development.
C	Phase 2 New Residential	To protect future development lands from inappropriate forms of development which would impede the sequential expansion and consolidation of the town in terms of providing for new residential development for future plans.
E	Community and Educational	To provide for education, recreation, community and health. E (1) – New Caragh Road – site of a potential new post -primary / primary school. E (3) – Millennium Park – site of a post-primary school under construction.
F	Open Space and Amenity	To protect and provide for open space, amenity and recreation provision.
F2	Strategic Open Space	To preserve, provide for and improve recreational amenity, open space and green infrastructure networks.
G	Green Belt	To maintain the settlement character and protect, from inappropriate development, the greenbelt between Naas and Johnstown
H	Industry and Warehousing	To provide for industry, manufacturing, distribution and warehousing. Note: Where employment is a high generator of traffic, the location of new employment facilities at an appropriate scale, density, type and location will be encouraged to reduce the demands for vehicular travel
I	Agricultural	To retain and protect agricultural uses. Specific Objective: Investigate the feasibility of providing a connection to Kerdiffstown Park through the lands zoned for agricultural use (and Open Space and Amenity) to the north of the M7 motorway.
K	Commercial / Residential	To provide for commercial and appropriate residential mixed-use developments.
L	Leisure and Amenity	To provide for leisure and tourism facilities within the town.

Ref.	Zoning Objective Type	Zoning Objective Description
N	Neighbourhood Centre	To provide for new/existing neighbourhood centres and associated facilities. Note: neighbourhood centres are intended to serve the immediate needs of local residents and workers and should not compete with similar retail uses within the town centre.
P	Data Centre	To provide for Data Centre development and their associated infrastructure only.
Q	Enterprise and Employment	To provide for and facilitate the provision of high job-generating uses.
R	Retail/Commercial	To support continued operation of existing commercial uses.
SR	Strategic Reserve	To protect the integrity of the lands within the Northwest Quadrant to provide for the future strategic expansion of the town. To ensure no inappropriate forms of development impede the orderly expansion of the Key Town of Naas. No development shall take place on these lands until a masterplan is prepared and integrated into the Local Area Plan by way of a Statutory Amendment under Section 20 of the Planning and Development Act, 2000 (as amended) which shall be finalised on completion of the OPW Flood Study for Naas.
T	Mixed-use	To provide for general commercial/industrial/enterprise uses. Specific Objective: The owner/developer of the subject lands is required to prepare a masterplan for the overall land parcel.
U	Utilities/Services	To provide for and improve public utilities

2.3.2 Proposed Land Use Zoning

Proposed zoning objectives for the Plan Area, as shown in Figure 2.3 and as described in Table 2.1, are set out as part of the Proposed Kildare County Development Plan Variation: Northwest Quadrant (Naas). The statutory planning context to the Northwest Quadrant (Naas) is defined in the Naas Local Area Plan 2021-2027.

Figure 2.4: Proposed Zoning Objectives for the Northwest Quadrant (Naas)



2.4 Water Environment

EPA 'Flow Network' and OPW FSU 'Rivers' datasets show several watercourses within the Plan Area, as shown in Figure 2.5:

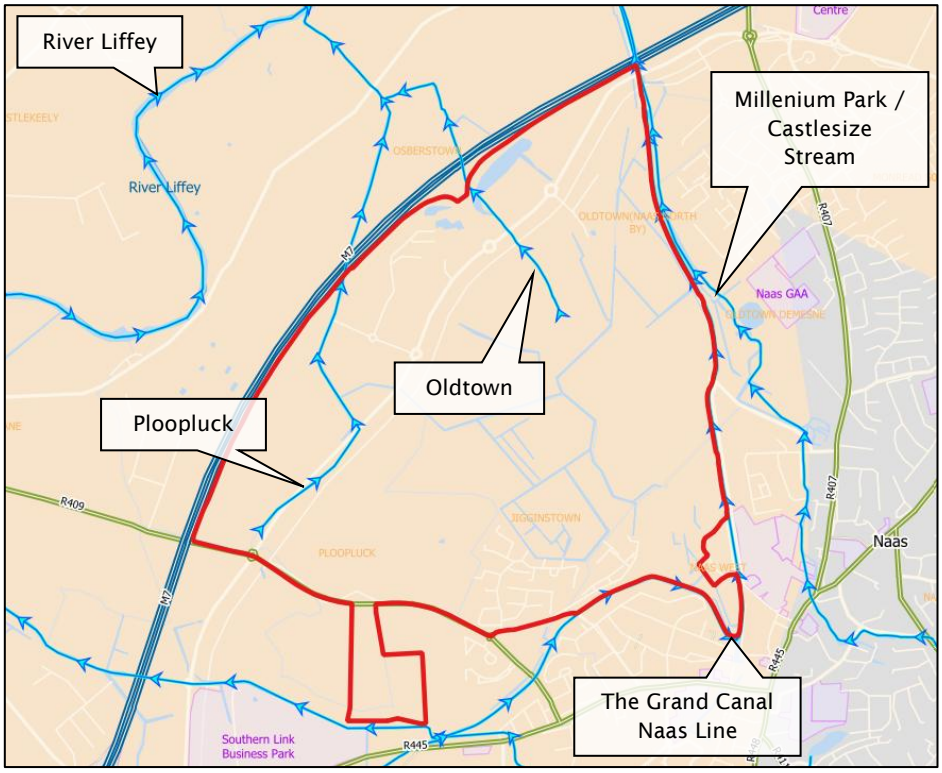
- The Ploopluck Watercourse, which flows northeast along Millennium Park Road and then north under the M7 before joining the River Liffey downstream of Osberstown Wastewater Treatment Plant.
- The Oldtown Watercourse, which flows through the northern part of the site and connects with the Ploopluck Watercourse.
- The Castlesize Stream, which flows along the eastern boundary, through Naas, and northwards towards the River Liffey.

The Grand Canal Naas Line runs along the eastern and southern boundary of the Plan Area.

Additional historical and unnamed watercourses are identified within the Plan Area. Further information on watercourses in the area are set out in the Naas Flood Relief Scheme 'Hydrology and hydraulic Modelling Report' (discussed in subsequent sections) and the Northwest Quadrant (Naas) Surface Water Management Plan.

Flood risk from identified open water features is considered subsequently in the report.

Figure 2.5: Watercourse Map



2.5 Geology and Hydrogeology

No site investigation / infiltration testing has been conducted for the Plan Area.

Table 2.2 summarises geological and hydrogeological data taken from Geological Survey of Ireland (GSI) mapping that is considered pertinent to the Plan Area.

Table 2.2: Geological and Hydrogeological Data for the Plan Area

Data	Description
Overlying Soil	• Mainly composed of "Fine loamy drift with limestones". • Patch of "urban" made ground in the south of the plan area. • Patch of "alluvium" in the northeast and southeast of the Plan area.
Subsoil Geology	• Primarily 'Till derived from limestones". • Strip along the east of the Plan Area composed of "Gravels derived from limestone". • Northwest of this strip of gravel the subsoils are composed of "alluvium". • To the south of the plan area there is a patch composed of "Lacustrine sediments". • South of the patch of Lacustrine sediments along the southern boundary of the Plan Area lies an area composed of "alluvium"
Bedrock Geology	• Primarily Rickardstown Formation (Cherty often dolomitised limestone). • Ballysteen Formation (Dark muddy limestone, shale) in the southeast of the Plan Area. • Recorded geotechnical borehole data indicates bedrock met at 7-11.5 m depth directly west of the Plan Area in the Rickardstown Formation. • While recorded geotechnical borehole data does not indicate bedrock depth, depths are at least < 7.5m in sites southwest of the Plan Area in the Ballysteen Formation.
Groundwater Body	• "Naas" Groundwater Body in the northwest of the Plan Area and "Dublin" Groundwater Body in the southeast. • "Regionally Important Aquifer - Karstified (diffuse)" bedrock aquifer in the Naas Groundwater Body and "Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones" in the Dublin Groundwater Body. • 'Moderate" groundwater vulnerability in the majority of the Plan Area with an area of "High" vulnerability in the east.
Groundwater Drinking Water Protection Areas	• None

3 APPROACH TO FLOOD RISK ASSESSMENT

3.1 Definition of Flood Risk

Flood risk is a combination of the likelihood of occurrence of a flood event and the potential consequences arising from that flood event. It is expressed as follows:

Flood Risk = Likelihood of Flooding x Consequences of Flooding

Flooding presents a risk only when people, property, infrastructure, and / or environmental assets are located in the area that could potentially flood.

3.1.1 Likelihood of Flooding

The likelihood of flooding is defined in the OPW Guidelines as the percentage probability of a flood of a given magnitude or severity occurring or being exceeded in any given year. It is generally expressed as an Annual Exceedance Probability (AEP) or return period. For example, a 1% AEP flood event refers to a flood with a magnitude that has a 1-in-100 (i.e., 1%) chance of occurring or being exceeded in any given year. AEP is the inverse of return period, as shown in Table 3.1.

Table 3.1: Return Period and Annual Exceedance Probability

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

3.1.2 Consequences of Flooding

The consequences of flooding are determined by the hazards associated with the flooding (e.g., depth of water, speed, flow, rate of onset, duration, wave action, water quality) and the vulnerability of the people, property, and environment assets potentially affected (e.g., age profile of the population, type of development, presence, reliability of mitigation measures).

3.2 Objectives of the OPW Guidelines

This SFRA recognises the core objectives of the OPW Guidelines, which are to:

- Avoid inappropriate development in areas that are at risk of flooding.
- Prevent new developments from increasing flood risk elsewhere, including flood risk that may arise from surface water runoff.
- 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.
- 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.

In achieving the aims and objectives of the OPW Guidelines, Local Authorities should:

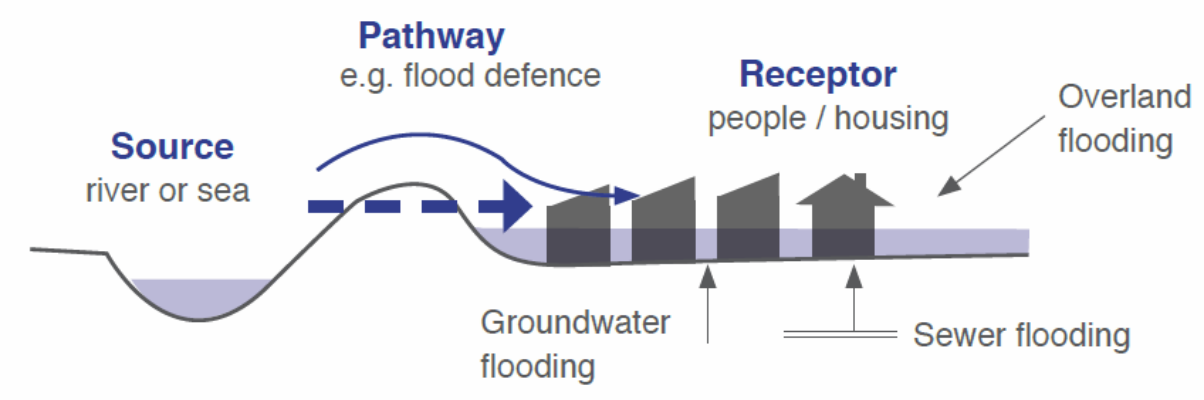
- Adopt a sequential approach to flood risk management, which aims to avoid flood risk where possible, substitute less vulnerable uses where avoidance is not possible, and mitigate and manage the risk where avoidance and substitution are not possible.
- Apply the Justification Test for development in flood risk areas.

A precautionary approach should also be applied to flood risk management to reflect uncertainties in existing flooding datasets and risk assessment techniques and in the ability to predict the future climate, the future performance of existing flood defences, and the extent of future coastal erosion. Development should therefore be designed with careful consideration of likely future changes in flood risk, including the effects of climate change and coastal erosion, to ensure that future occupants are not subject to unacceptable risks.

3.3 Source-Pathway-Receptor Model

In accordance with the OPW Guidelines, this SFRA advocates the use of the Source-Pathway-Receptor model to identify the sources of flooding (e.g., high sea levels, intense or prolonged rainfall leading to increased runoff and increased flows in rivers and sewers), the receptors (i.e., the people and assets affected by flooding), and the pathways by which floodwater reaches those receptors (e.g., overland flow, river and coastal floodplains, river channels and sewers). A depiction of the Source-Pathway-Receptor model as it applies to FRAs, taken from the OPW Guidelines, is shown in Figure 3.1.

Figure 3.1: Sources, Pathways, and Receptors of Flooding



3.4 Flood Zones

Flood Zones are geographical areas where the likelihood of flooding **(from rivers and sea only)** is within a certain range. The OPW Guidelines define three Flood Zones, as outlined in Table 3.2.

Table 3.2: Flood Zones

Flood Zone	Description	Probability (Rivers)	Probability (Sea)
A	Probability of flooding from rivers and sea is highest	Greater than 1% or 1-in-100	Greater than 0.5% or 1-in-200
B	Probability of flooding from rivers and sea is moderate	Between 0.1% or 1-in-1000 and 1% or 1-in-100	Between 0.1% or 1-in-1000 and 0.5% or 1-in-200

Flood Zone	Description	Probability (Rivers)	Probability (Sea)
C	Probability of flooding from rivers and sea is low (any parts of the Plan Area not in Flood Zone A or B)	Less than 0.1% or 1-in-1000	Less than 0.1% or 1-in-1000

When determining Flood Zones, the presence of flood defences should be ignored as areas protected by flood defences still carry residual risk associated with overtopping or breach of defences.

Flood Zones are generated without the inclusion of allowances for climate change. Therefore, land zoning based on delineated Flood Zones will not account for climate change flood extents, which will be wider than the present day scenario flood extents in most instances.

3.5 Receptor Vulnerability

The OPW Guidelines define three vulnerability classifications for different land uses and types of development: highly vulnerable (including essential infrastructure), less vulnerable, and water compatible. Examples of different land uses and types of development under each classification are provided in Table 3.3.

The vulnerability of a development to flooding depends on the nature of the development, its occupancy, and the construction methods used. The classifications are primarily based on the ability to manage the safety of people in flood events and the long-term implications in terms of the recovery of function and structure of the development.

Table 3.3: Receptor Vulnerability Classifications

Vulnerability Classification	Land Uses / Type of Development *
Highly Vulnerable Development (including Essential Infrastructure)	• Garda, ambulance, and fire stations and command centres required to be operational during flooding • Hospitals • Emergency access and egress points • Schools • Dwelling houses, student halls of residence, and hostels • Residential institutions such as residential care homes, children's homes, and social services homes • Caravans and mobile home parks • Dwelling houses designed, constructed, or adapted for the elderly or other people with impaired mobility • Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution in the event of flooding (SEVESO sites, IPPC sites, etc.)
Less Vulnerable Development	• Buildings used for: retail, leisure, warehousing, commercial, industrial, and non-residential institutions • Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans • Land and buildings used for agriculture and forestry • Waste treatment (except landfill and hazardous waste) • Mineral working and processing • Local transport infrastructure.

Vulnerability Classification	Land Uses / Type of Development *
Water Compatible Development	• Flood control infrastructure • Docks, marinas, and wharves • Navigation facilities • Ship building, repairing, and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location • Water-based recreation and tourism (excluding sleeping accommodation) • Lifeguard and coastguard stations • Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms • Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan)

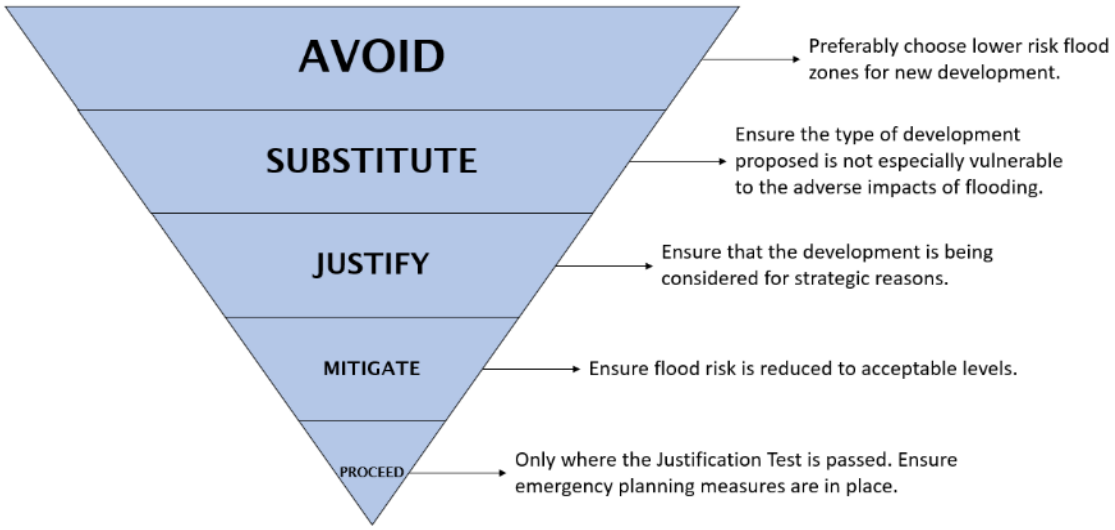
** Uses not listed here should be considered based on their own merits.*

3.6 The Sequential Approach and Justification Test

3.6.1 Sequential Approach

This SFRA recommends a sequential approach to planning to ensure the core objectives of the OPW Guidelines outlined in Section 3.2 are implemented. A sequential approach is particularly important at the plan-making stage but also applicable in the layout and design of new development at the development management stage. The principles of the sequential approach in flood risk management are summarised in Figure 3.2.

Figure 3.2: The Sequential Approach



In general, most types of development would be considered inappropriate in Flood Zone A.

In Flood Zone B, highly vulnerable development (e.g., hospitals, dwelling houses, and primary infrastructure) would be considered inappropriate, but less vulnerable development (e.g., retail, commercial, and industrial uses) may be considered appropriate.

Development in Flood Zone C is considered appropriate from a flood risk perspective.

While preferred, a sequential approach to flood risk management is not always possible as many urban centres are affected by Flood Zones yet are targeted for key social and economic development. To reflect this, the OPW Guidelines set out the Justification Test to facilitate the assessment of the balance between consideration of flood risk and the need for continued development in towns and cities.

3.6.2 Justification Test

The Justification Test has been designed to rigorously assess the appropriateness, or otherwise, of particular developments that, for the reasons outlined above, are being considered in areas of moderate or high flood risk. The test is comprised of two processes:

- Plan Making Justification Test – used at the plan preparation and adoption stage where it is intended to zone or otherwise designate land that is at moderate or high risk of flooding
- Development Management Justification Test – used at the planning application state where it is intended to develop land at moderate or high risk of flooding for uses or development vulnerable to flooding that would generally be inappropriate for that land

Table 3.4 is a matrix of receptor vulnerability versus Flood Zone to illustrate appropriate development and scenarios where development is required to meet the Justification Test.

Table 3.4: Vulnerability and Flood Zone Matrix for Justification Test

Development Vulnerability	Flood Zone A	Flood Zone B	Flood Zone C
Highly Vulnerable (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less Vulnerable	Justification Test	Appropriate	Appropriate
Water-compatible	Appropriate	Appropriate	Appropriate

3.6.3 Plan Making Justification Test

The Plan Making / Development Plan Justification Test should be carried out as part of the SFRA using mapped Flood Zones. It applies where land zonings have been reviewed with respect to the need for development of areas at a high or moderate risk of flooding for uses which are vulnerable to flooding and which would generally be inappropriate, as set out in Table 3.2, and where avoidance or substitution is not appropriate. Where land use zoning objectives are being retained, they must satisfy all of the following criteria as per Table 3.4 of the OPW Guidelines included as Table 3.5.

Table 3.5: Plan Making Justification Test

No.	Criteria
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.

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

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

- Remove the existing zoning for all types of development on the basis of the unacceptable high level of flood risk
- Reduce the zoned area and change or add zoning categories to reflect the flood risk
- Replace the existing zoning with a zoning or a specific objective for less vulnerable uses
- Prepare a local area plan informed by a detailed flood risk assessment to address zoning and development issues in more detail and prior to any development

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

3.7 Climate Change Adaptation

It is likely that climate change will have an impact on flood risk in Ireland as a result of rising sea levels and more frequent extreme rainfall events. Climate change is a dynamic process that requires a precautionary and flexible approach to ensure appropriate provision for or adaptation to its potential consequences.

Guidance on climate change objectives and actions is set out in the Climate Change Sectoral Adaptation Plan published by the OPW in 2025. The first Climate Change Sectoral Adaptation Plan was published in 2015 under the mandate of the National Climate Change Framework. An updated plan was prepared in 2019 with amendments to the previous plan made based on new information available on climate change and its potential impacts and developments in flood risk management since 2015, and was the standing document when the Kildare CDP 2023-2029, Naas LAP 2021-2027 and associated CDP SFRAs were published.

An updated plan has since been published in 2025, and updates the 2019 Plan using newly available information on climate change and its potential impacts, developments in flood risk management since 2019 and the Guidelines for the preparation of the Sectoral Adaptation Plans (DECC, 2024b).

The long-term goal adopted by the OPW on climate adaptation for flooding and flood risk management is “Enhance resilience against flood risk and reduce impacts of flooding now and into the future, by

integrating climate adaptation strategies and measures that reduce vulnerability, protect communities, and promote sustainable flood risk management", supporting the overarching vision of "A climate-resilient Ireland where flood risk is managed sustainably to protect communities, reduce vulnerability and secure the future".

To deliver on this goal, the OPW has identified the following adaptation objectives:

- Objective 1: Enhancing our knowledge and understanding of the potential impacts and future risks of climate change for flooding and flood risk management through research and assessments.
- Objective 2: Strengthen capacity and awareness of the impacts of climate change, relating to flooding and flood risk management, within the OPW and across wider stakeholder groups including public bodies, professional sectors and the general public.
- Objective 3: Embed climate change adaptation into flood risk management practices undertaken by the OPW and other sectors.
- Objective 4: Increase the awareness and suitable application of Nature-based Solutions for Catchment Management to improve climate resilience.

A number of actions have been identified under each adaptation objective across the areas of activity in flood risk prevention, protection and preparedness and resilience, as well as in further research and capacity building. Flooding has the potential to affect all sectors and local authorities, and coordination is critical towards ensuring a coherent and whole of government approach to climate resilience in relation to flooding and flood risk management.

Based on the Sectoral Adaptation Plans, the OPW has adopted two indicative potential futures for flood risk assessment; the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS). These were selected to reflect, based on information available at the time and remain valid per the updated document, a future in the latter part of the century that would be:

- typical or near to the general average of the future climate projections (MRFS).
- a more extreme future based on the upper end of the range of projections of future climatic conditions and the impacts such changes would have on the drivers of flood risk (HEFS).

The allowances, in flood risk terms, for both the MRFS and HEFS are shown in Table 3.6.

Table 3.6: OPW Climate Change Allowances

Parameter	Mid-Range Future Scenario (MRFS)	High End Future Scenario (HEFS)
Mean Sea Level Rise	+ 500 mm	+ 1000 mm
Peak River Flood Flows	+ 20%	+ 30%
Extreme Rainfall Depths	+ 20%	+ 30%

Due to the uncertainty of the potential effects of climate change, this SFRA sets out recommendations in line with the precautionary approach adopted by the Guidelines in terms of managing the effects of climate change. These include:

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

3.8 Stages and Scales of Flood Risk Assessment

3.8.1 Stages of Flood Risk Assessment

FRAs are typically undertaken over three stages, in order of increasing detail, as described in Table 3.7. Progression to a more detailed stage depends on the outcomes of the previous stage. This staged approach ensures that the level of assessment undertaken is appropriate for the scale and nature of the flood risk issues, site or area, and type of development proposed. It also prevents unnecessary flood modelling and development of mitigation and management measures.

Table 3.7: Stages of Flood Risk Assessment

Stage	Purpose
Stage 1: Flood Risk Identification	To identify whether there may be any flooding or surface water management issues relevant to a plan area or proposed development site that may warrant further investigation.
Stage 2: Initial Flood Risk Assessment	To confirm sources of flooding that may affect a plan area or proposed development site and to appraise the adequacy of the existing flood risk information. If necessary, to determine what surveys and modelling approach are appropriate to match the spatial resolution required and complexity of the flood risk issues identified.
Stage 3: Detailed Flood Risk Assessment	To provide a quantitative assessment of flood risk to a proposed or existing development, the effect of the development on flood risk elsewhere, and the effectiveness of any proposed mitigation measures. Typically involves the construction of a hydraulic model that covers a wide enough area to capture catchment-wide impacts and hydrological processes.

3.8.2 Scales of FRA

There are three scales of FRA described in the OPW Guidelines, as described in Table 3.8.

Table 3.8: Scales of Flood Risk Assessment

Scale	Purpose	Responsibility
Regional Flood Risk Appraisal (RFRA)	• To appraise the source and significance of all types of flood risk in a region based on readily derivable information to inform the regional planning guidelines and influence spatial allocations for growth in housing and employment. • To identify areas where more detailed studies are required or where flood risk management measures may be required at a regional level to support the proposed growth.	Regional Authorities
Strategic Flood Risk Assessment (SFRA)	• To provide a broad assessment of all types of flood risk in the area to inform strategic land use planning decisions and to identify opportunities for reducing flood risk. • Typically involves up to a Stage 2 – Initial Flood Risk Assessment. • A site-specific flood risk assessment would be recommended where the initial flood risk assessment demonstrates the potential for a significant level of flood risk or where there is conflict with the vulnerability of proposed development.	Local Authorities

Scale	Purpose	Responsibility
Site-specific Flood Risk Assessment (SSFRA)	• To identify and assess all types of flood risk for a proposed new development and to assess the potential effects of climate change, the impact of development on flooding, and residual risks. • To propose appropriate site management and mitigation measures to reduce flood risk to an acceptable level. • If stages 1 and 2 of assessment have been undertaken to appropriate levels of detail, it is likely that the SSFRA will require detailed channel and site surveys and flood modelling.	Planning Applicants

3.9 Strategic Flood Risk Assessment

The purpose of this report is to carry out an SFRA at Plan Area scale. The following detailed requirements are set out in the Technical Appendices of the OPW Guidelines and have been undertaken where relevant information is available:

- Identify principal rivers, sources of flooding and produce Flood Zone maps for across the local authority area and in key development areas.
- An appraisal of the availability and adequacy of the existing information.
- Assess potential impacts of climate change to demonstrate the sensitivity of an area to increased flows or sea levels.
- Identify the location of any flood risk management infrastructure and the areas protected by it and the coverage of flood-warning systems.
- Consider, where additional development in Flood Zone A and B is planned within or adjacent to an existing community at risk, the implications of flood risk on critical infrastructure and services across a wider community-based area and how the emergency planning needs of existing and new development will be managed.
- Identify areas of natural floodplain, which could merit protection to maintain their flood risk management function as well as for reasons of amenity and biodiversity.
- Assess the current condition of flood-defence infrastructure and of likely future policy with regard to its maintenance and upgrade.
- Assess the probability and consequences of overtopping or failure of flood risk management infrastructure, including an appropriate allowance for climate change.
- Assess, in broad terms, the potential impact of additional development on flood risk elsewhere and how any loss of floodplain could be compensated for.
- Assess the risks to the proposed development and its occupants using a range of extreme flood or tidal events.
- Identify areas where site-specific FRA will be required for new development or redevelopment.
- Identify drainage catchments where surface water or pluvial flooding could be exacerbated by new development and develop strategies for its management in areas of significant change.
- Identify where an integrated and area based provision of SuDS and green infrastructure are appropriate in order to avoid reliance on individual site by site solutions.
- Provide guidance on appropriate development management criteria for zones and sites.

4 STAGE 1 – FLOOD RISK IDENTIFICATION

4.1 Preamble

This section is intended to form a Stage 1 assessment of flood risk by presenting available flood risk information used to identify flooding or surface water management issues within the Plan Area that warrant further investigation. In accordance with the OPW Guidelines, both primary and secondary sources of flood risk information have been used to inform this SFRA.

4.2 Primary Sources of Flood Risk Information

Table 4.1 lists primary sources of flood risk information in chronological order and indicates whether they are relevant to this SFRA. Sources deemed relevant are discussed further in this section.

Table 4.1: Primary Sources of Flood Risk Information

Information Source	Year Published	Findings	Relevant?	Included in Flood Zones?
Naas Flood Relief Scheme- Flood Study	2026	The Plan Area is included within the FRS mapping based on updated detailed modelling.	Yes- refer to Section 4.2.3	Yes
Strategic Flood Risk Assessment for the Kildare County Development Plan 2023-2029	2023	The Plan Area is not included within the SFRA Flood Zone mapping, and was subject to a separate LAP SFRA.	No	No
Strategic Flood Risk Assessment for the Naas Local Area Plan 2021-2027	2021	The Plan Area is included within the SFRA Flood Zone mapping.	Yes – refer to Section 4.2.2	No
National Coastal Flood Hazard Mapping (NCFHM)	2021	The Plan Area is not covered by NCFHM flood mapping as it is not in an area affected by coastal flooding	No	No
National Indicative Fluvial Mapping (NIFM)	2021	The Plan Area and surrounding lands are not covered by NIFM flood maps.	No	No
GSI Groundwater Flooding	2020	GSI historic and predicted groundwater flood extent mapping indicates that the Plan Area is not at risk of groundwater flooding.	No	No
Catchment Flood Risk Assessment and Management (CFRAM) Study	2015 / 2016	The Plan Area is included in the Eastern CFRAM fluvial flood maps as published November 2017.	Yes – refer to Section 4.2.1	No

4.2.1 Catchment Flood Risk Assessment and Management (CFRAM) Study

As part of the OPW's CFRAM programme, flood extent, depth, and risk maps (generally referred to as 'CFRAM maps') were published in 2015 / 2016 for areas identified by the Preliminary Flood Risk Assessment (PFRA) as being at potentially significant risk of flooding. One of the main purposes of the detailed CFRAM flood maps was to assist Local Authorities in planning and development management.

The CFRAM flood extent maps show the estimated extents, peak water levels, and peak flows associated with flooding from modelled river reaches, estuaries, and coastlines, taking account of flood defences. Flood maps were produced for a range of flood events (10%, 1%, and 0.1% AEP) for the present-day scenario and two future scenarios (the MRFS and HEFS). Flooding from other sources has typically not been considered as part of the CFRAM flood mapping.

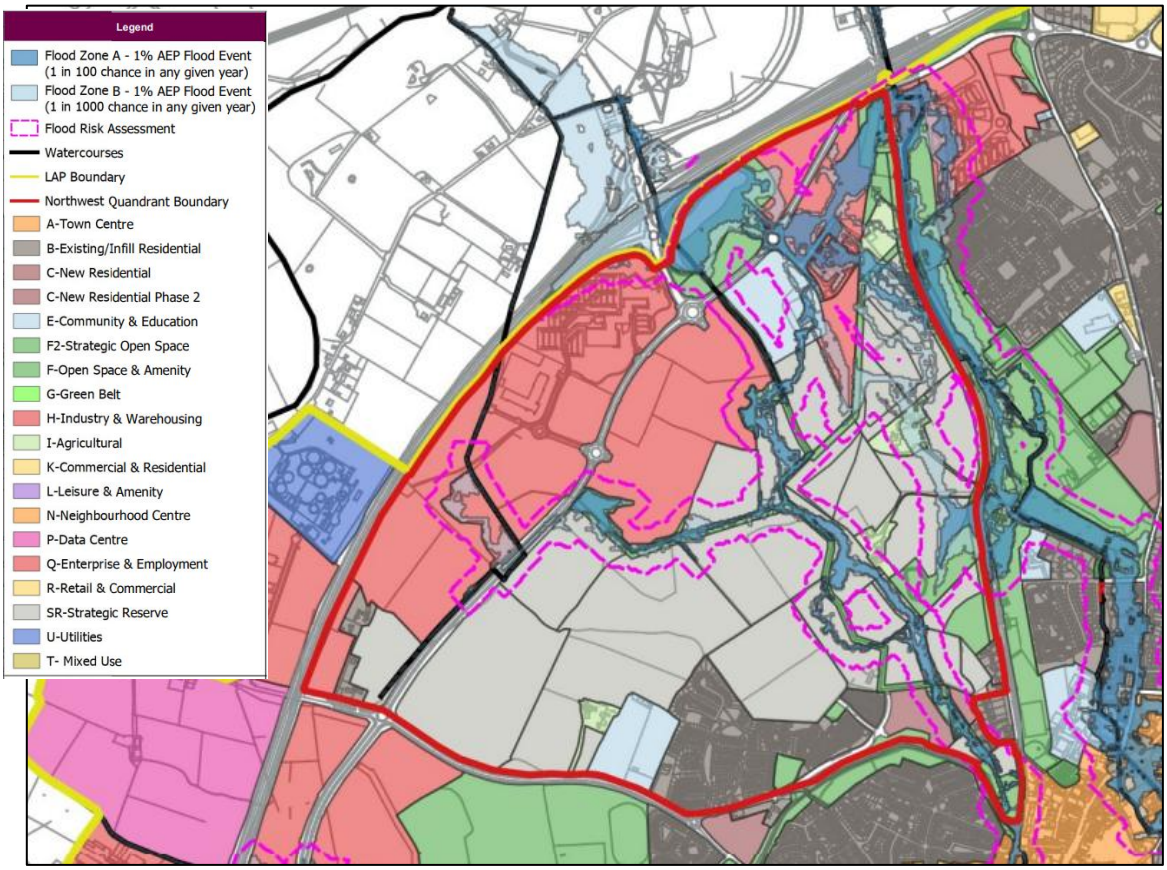
Flood Zone mapping produced as part of the subsequent Kildare CDP and Naas LAP SFRAs are based upon these CFRAM maps, and are set out in the following sections.

4.2.2 Strategic Flood Risk Assessment for the Naas Local Area Plan 2021-2027

Flood Zone mapping was produced as part of the Naas LAP SFRA, an extract of which is shown in Figure 4.1.

As set out in the Naas LAP SFRA, the Flood Zones are delineated based on the CFRAM maps, as published in 2017. As shown, the Plan Area is affected by areas of fluvial floodplain and as such, lies partially in Flood Zones A, B and C.

Figure 4.1: Extract from Naas LAP SFRA Flood Zone Mapping



Comprehensive flood risk guidance is set out in the Naas LAP SFRA, including the following guidance considered pertinent to this SFRA:

- Flood Zones represent flood extents for the existing, undefended present day scenario (i.e., without inclusion of climate change allowance or flood defences).
- As well as assessing the surface water management risk for a site, all development including that in Flood Zone C, should consider residual risk factors such as culvert/bridge blockages and the effects of climate change which may expand the extents of Flood Zones A and B. These residual risk factors should influence the potential mitigation measures for a site which could include setting the finished floor levels.
- A key mechanism for providing flood protection and resilience is the setting of Finished Floor Levels (FFLs) and Finished Ground Levels (FGLs).
- In accordance with the OPW Guidelines, applications should outline the emergency procedures that will be applied in the event of a flood. Evacuation routes should be identified but if this is not possible then containment may be considered if it is considered safe and practical to do so. If either safe evacuation or containment is not possible, then the development proposal should be refused.
- Compensatory storage for development that results in a loss of floodplain within Flood Zone A must be provided on a level for level basis, the lands should be in close proximity to the area that storage is being lost from, the land must be within the ownership of the developer and the land given to storage must be land which does not flood in the 1% AEP event. Also the compensatory storage area should be constructed before land is raised to facilitate development.
- Surface water management is to be provided using SuDS principles and components to ensure drainage from development is managed sustainably and contributes to water quantity and quality improvements as well as contributing to amenity and biodiversity.

4.2.3 Naas Flood Relief Scheme- Flood Study

In March 2026, Flood Zone mapping based on detailed hydraulic modelling to support the Naas Flood Relief Scheme was finalised on behalf of Kildare County Council and the OPW.

As part of the Flood Relief Scheme process, the engaged consultants reviewed the existing mapping for the area, built a new model and with its outputs, updated the flood extents and flood zones, for the study area. Their determination (i.e. the model development and its associated outputs) has been accepted by the Steering Group as an accurate representation of the current flood extents in Naas. As such, the current extents are considered the most up to date and accurate information available regarding flood risk in Naas. The outputs are considered of similar detail and can be used for the same application as the previous CFRAM mapping, but do not replace the detail that a site specific flood risk assessment would.

The supporting Hydrology and Hydraulic Modelling Report (March 2026) sets out the following:

"*The OPW, working in partnership with Kildare County (KCC) and other Local Authorities, previously commissioned and completed the Eastern Catchment Flood Risk Assessment and Management (CFRAM) Study. This was to identify and map existing and potential future flood risk within the CFRAM study area. The Eastern CFRAM study area included the town of Naas, Country Kildare, and concluded that a flood relief scheme would be viable and effective for the community.*

It was noted that there is high level of uncertainty regarding the flood risk in Naas due to the lack of historical flood events in the town, a lack of model calibration events, and possible interconnection between fluvial and surface water drainage and canal systems.

This present study forms Stage 1 of the Naas Flood Relief Scheme (FRS) Engineering and Environmental Consultancy Services. The objective of this present study was to carry out further data collection, hydrological and hydraulic modelling and analysis for the town; and to advance and implement a flood relief scheme if feasible."

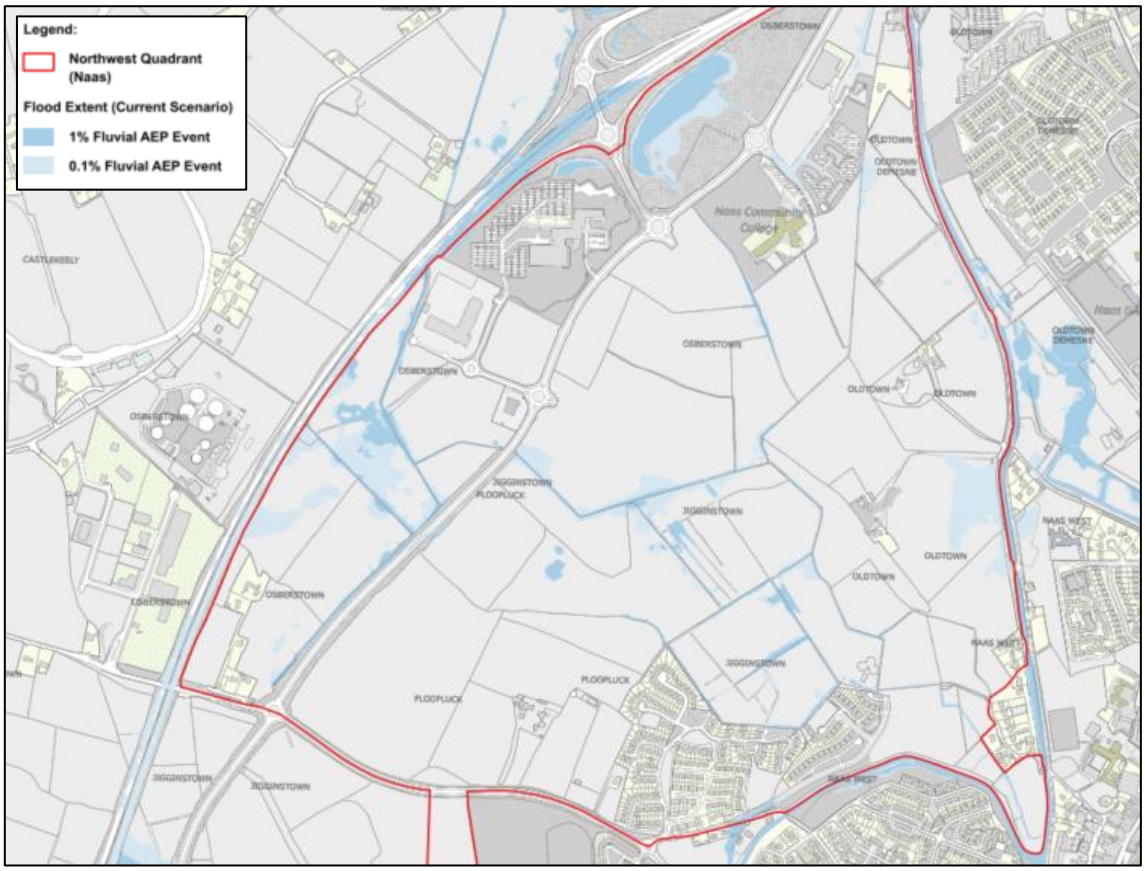
The published report includes "*hydrological analysis to estimate design flood flows for input to an integrated hydraulic model of the fluvial and parts of the surface water drainage network within the Naas Scheme Area. It covers current baseline conditions, as well as future climate and catchment scenarios, and considers the combined probability of occurrence of multiple high and extreme events. The report also describes the development of an integrated hydraulic catchment model using the*

InfoWorks ICM software, as well as the hydraulic analysis of model outputs to support the Naas Flood Relief Scheme".

The subsequent detailed fluvial flood zone map outputs are considered appropriate to supersede the 2017 Eastern CFRAM extents in the area.

Flood Zone mapping was produced as part of Stage 1 of the Naas FRS, an extract of which is shown in Figure 4.2. The full flood maps are included in Appendix A, and form the Flood Zones for the Plan Area, as set out in this SFRA.

Figure 4.2: Extract from Naas Flood Study Flood Zone Mapping



4.3 Secondary Sources of Flood Risk Information

Table 4.2 lists secondary sources of flood risk information and indicates whether they are relevant to this SFRA. Sources deemed relevant are discussed further in this section.

Table 4.2: Secondary Sources of Flood Risk Information

Information Source	Year Published	Findings	Relevant?
Internet Background Search	N/A	An internet background search including online news articles and other media found no evidence of flooding within the Plan Area.	No
Past Flood Events Mapping	Updated on Ongoing Basis	The OPW's 'Past Flood Events' mapping / database includes one record of historic flooding c. 200 m south of the Plan boundary.	Yes – refer to Section 4.3.1
Arterial Drainage Scheme Benefitting Lands	N/A	The Plan Area is not shown to be within an area of benefitting lands.	No
Drainage District Benefitting Lands	N/A	The Plan Area is not shown to be within an area of lands benefitting from any Drainage District.	No
Former Local Area Plans (LAPs)	2021	The current Naas LAP 2021-2027 remains in place over the duration of the plan.	Yes- refer to Section 4.2.2
Flood Relief Schemes	Ongoing	The proposed Naas FRS is currently in Stage 1, as previously set out in Section 4.2.3.	Yes – refer to Section 4.2.3
Ordnance Survey Ireland (OSI) and Environmental Protection Agency (EPA) Mapping	Updated on Ongoing Basis	The Grand Canal Naas Line runs along the southern and eastern boundary of the Plan Area. Inundation of surrounding lands is possible in the event of overtopping or failure of the embankments.	Yes – refer to Section 4.3.2

4.3.1 Past Flood Events

4.3.1.1 OPW 'Past Flood Events' Mapping

The OPW's 'Past Flood Events' mapping / database provides records of historic flooding and includes flood reports, news articles, photographs, council meeting minutes, and other archived documents. It is noted that not all past events have been included in this dataset.

A past flood event (ID-1692) was recorded on 5th November 2000 at Porter's Gate c. 200 m south of the Plan Area, as shown in Figure 4.3. Council minutes of a meeting from 1st April 2005 states that the limited capacity of a culvert causes occasional flooding at Hotel on the Newbridge road.

However, there is no record of flooding within the Plan Area.

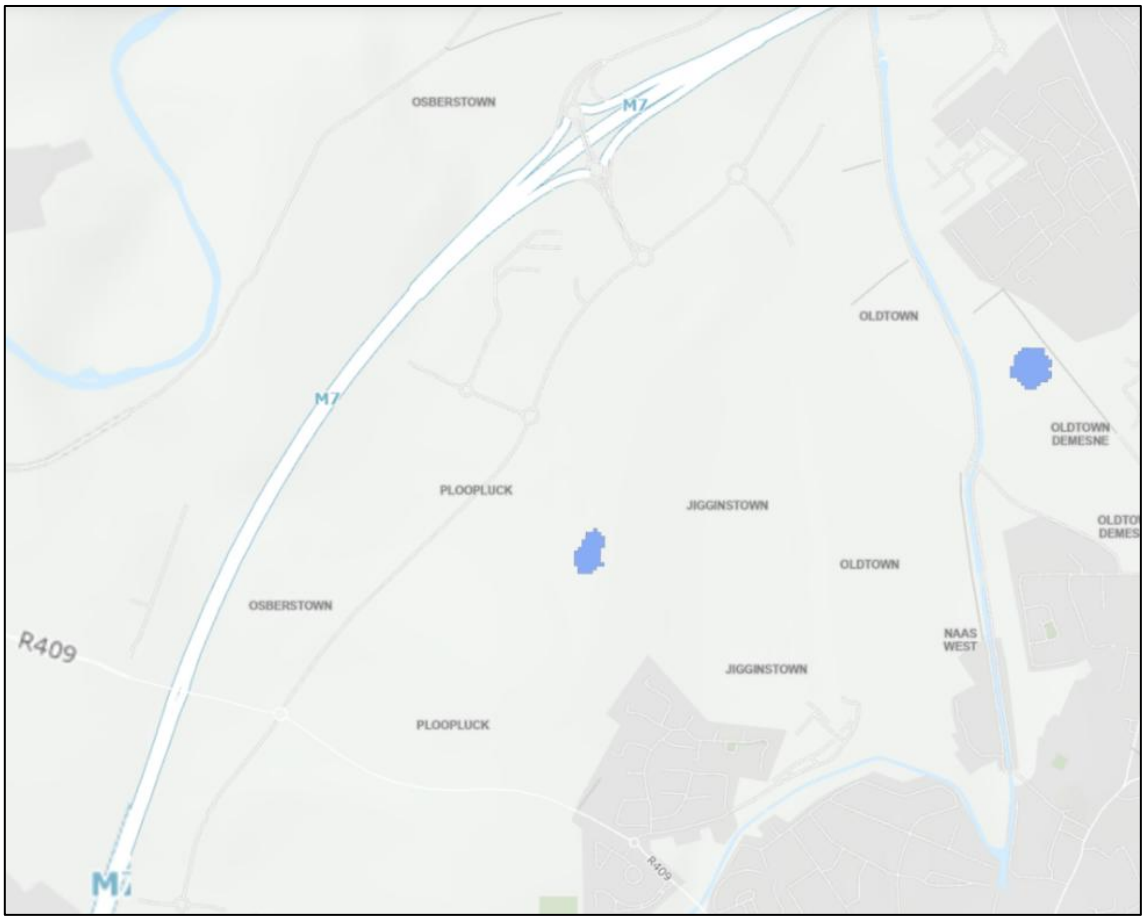
Figure 4.3: OPW 'Past Flood Events' Mapping

4.3.1.2 GSI Surface Water Mapping

As held by GSI, the Winter 2015/2016 Surface Water Flooding map shows "fluvial (rivers) and pluvial (rain) floods, excluding urban areas, during the winter 2015/2016 flood event, and was developed as a by-product of the historic groundwater flood map".

These maps show a single isolated area of recorded surface water pooling within the Plan Area.

Figure 4.4: GSI 2015/2016 Surface Water Mapping [excerpt from floodinfo.ie]



4.3.2 Impoundments / Canals

The Grand Canal traverses the eastern extent of the site. Further assessment on the potential risk of flooding is deemed necessary.

4.4 Summary

In accordance with the OPW Guidelines, all available sources of flood risk information have been reviewed with the purpose of identifying any potential sources of flood risk to the Plan Area. The findings of the Stage 1 assessment indicate that lands within the Plan Area may be at risk of fluvial flooding.

Therefore, in accordance with the OPW Guidelines, a Stage 2 flood risk assessment has been carried out for the Plan Area and is presented in Section 5 of this SFRA.

5 STAGE 2 – INITIAL FLOOD RISK ASSESSMENT

5.1 Preamble

This section is intended to form a Stage 2 assessment of flood risk by confirming the sources of flooding that may be significant or possibly significant to the Plan Area, appraising the adequacy of existing flood risk information, and determining whether further assessment is required. The Stage 2 assessment is based on the flood risk information reviewed as part of the Stage 1 assessment presented in Section 4.

5.2 Initial Assessment

Table 5.1 presents an initial assessment of sources of flooding that may be significant or possibly significant to the Plan Area and determines whether further assessment is required.

Table 5.1: Significance of Sources of Flooding to the Plan Area

Source of Flooding	Significant?	Reason	Assess Further?
Fluvial flooding	Yes	The Ploopluck and Oldtown watercourses flow through the Plan Area. OPW and Kildare CC datasets indicate that areas of land within the Plan Area are affected by fluvial flooding.	Yes – refer to Section 5.3
Coastal flooding	No	The Plan Area is not in an area affected by coastal flooding.	No
Pluvial / surface water flooding	Yes	Surface water drainage / pluvial flooding is covered in the Northwest Quadrant (Naas) Surface Water Management Plan, as prepared on behalf of Kildare CC, to inform the Proposed Kildare County Development Plan Variation: Northwest Quadrant (Naas).	No
Urban drainage flooding	Possible	Surface water drainage / pluvial flooding is covered in the Northwest Quadrant (Naas) Surface Water Management Plan, as prepared on behalf of Kildare CC, to inform the Proposed Kildare County Development Plan Variation: Northwest Quadrant (Naas).	No
Groundwater flooding	No	GSI groundwater flood mapping indicates that the Plan Area is not affected by groundwater flooding.	No
Flooding from artificial sources (e.g., impoundments)	Possible	The Grand Canal Naas Line (Liffey and Dublin Bay) runs along the southern and eastern boundary of the Plan Area.	Yes – refer to Section 5.4

5.3 Fluvial Flooding

As presented in Section 4.2, OPW and Kildare CC data indicates that the Plan Area is affected by the 1% AEP and 0.1% AEP present day flood extents (Flood Zone A and Flood Zone B, respectively).

Therefore, further consideration of fluvial flooding is undertaken based on the outputs of the updated Naas FRS Flood Study.

5.4 Grand Canal

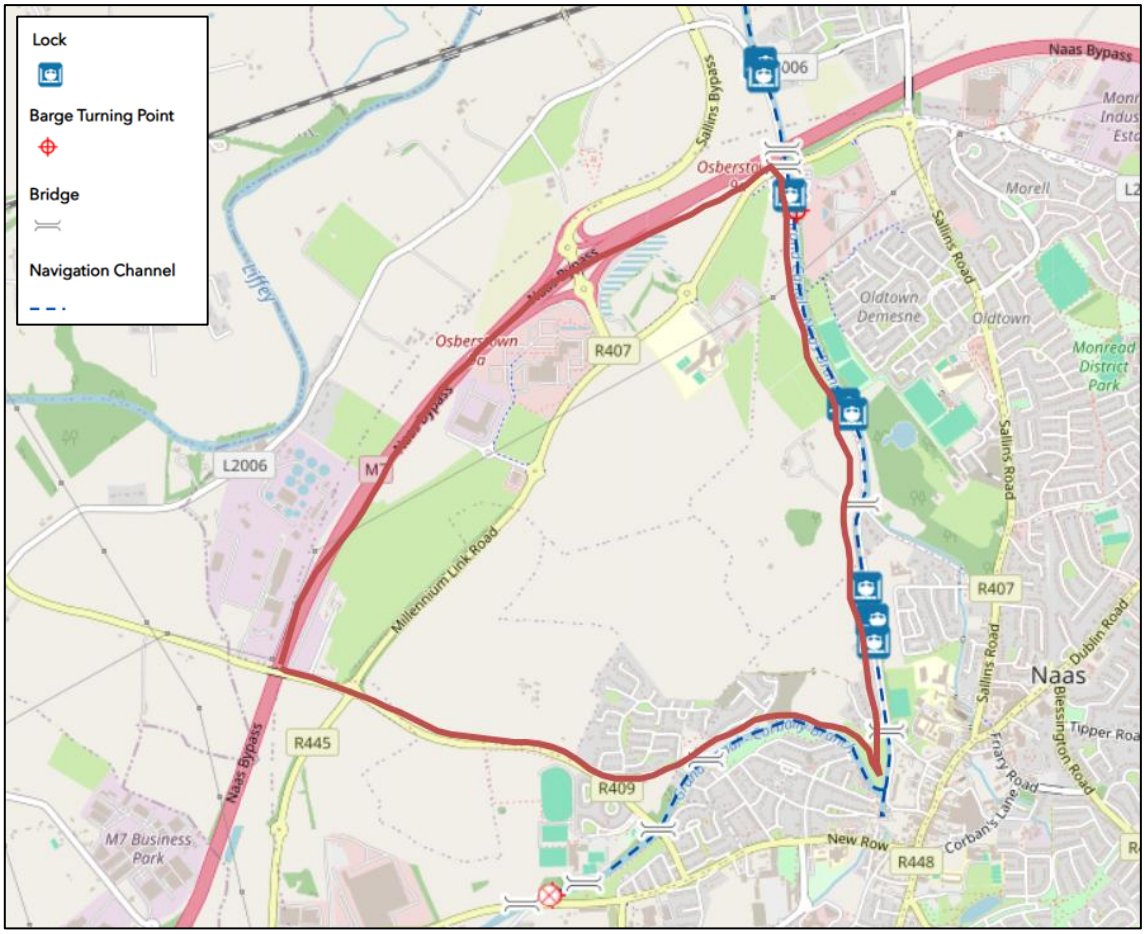
The Grand Canal extends 117 km from Dublin through counties Offaly, Laois and Kildare. Waterways Ireland is the cross-border navigation authority responsible for the management, maintenance, and development of seven inland navigable waterways, including the Grand Canal. Water levels in the canal are controlled, and the infrastructure is subject to regular monitoring and maintenance by Waterways Ireland.

The Grand Canal Naas Line sits lower than the surrounding ground for most of its length through Naas. As part of the Naas Flood Study, the Grand Canal Naas Line through Naas has been surveyed, and partially modelled within the 1D domain and as such, associated flood risk is considered to be accounted for as part of the fluvial flood extents.

The Naas LAP sets out Policy NE1.4, which requires a suitable buffer zone along the Grand Canal and other watercourses, protecting them from inappropriate development.

Figure 5.1 shows the Grand Canal Naas Line in the vicinity of the Plan Area. There are a series of four locks adjacent to the eastern Plan Area boundary.

Figure 5.1: Grand Canal Naas Line in vicinity of Plan Area [excerpt from Waterways Ireland]



5.5 Vulnerability Classifications

The Flood Zone maps included in Appendix A were prepared to assist with land use zoning decisions in areas that have been assessed as being at risk of flooding. Land use zonings have been overlain with Flood Zone mapping and Appendix B presents Justification Tests as prepared by Kildare CC, where required, whereby land use zonings are located within an inappropriate flood zone, based on land use zoning vulnerability.

Land use zoning vulnerability was agreed through consultation with Kildare CC, as outlined in the table below, and in following with the OPW Guidelines (see Section 2.3).

Table 5.2: Land Zoning Objectives and Flood Risk Vulnerability

Zoning	Flood Risk Vulnerability	Suitability
Existing Residential	Highly Vulnerable	Inappropriate in Flood Zone A and Flood Zone B
New Residential	Highly Vulnerable	Inappropriate in Flood Zone A and Flood Zone B
Phase 2 New Residential	Highly Vulnerable	Inappropriate in Flood Zone A and Flood Zone B
New Residential - Phase 2 with residual mitigatable flood risk	Highly Vulnerable	Inappropriate in Flood Zone A and Flood Zone B
Community and Educational	Highly Vulnerable	Inappropriate in Flood Zone A and Flood Zone B
Open Space and Amenity	Water Compatible	Appropriate in any flood zone Any proposal for development within Flood Zones A or B which involves changes in existing ground levels or provision of structures will require site specific flood risk assessment at planning application stage which demonstrates that the proposed development will not be at an unacceptable risk from flooding, and will not cause, contribute to, or exacerbate flooding elsewhere.
Light Industry and Warehousing	Less Vulnerable	Inappropriate in Flood Zone A Any proposal for development within Flood Zone B which involves changes in existing ground levels or provision of structures will require site specific flood risk assessment at planning application stage which demonstrates that the proposed development will not be at an unacceptable risk from flooding, and will not cause, contribute to, or exacerbate flooding elsewhere.

Zoning	Flood Risk Vulnerability	Suitability
Light Industry and Warehousing with residual mitigatable flood risk	Less Vulnerable	Inappropriate in Flood Zone A Any proposal for development within Flood Zone B which involves changes in existing ground levels or provision of structures will require site specific flood risk assessment at planning application stage which demonstrates that the proposed development will not be at an unacceptable risk from flooding, and will not cause, contribute to, or exacerbate flooding elsewhere.
Light Industry and Offices	Less Vulnerable	Inappropriate in Flood Zone A Any proposal for development within Flood Zone B which involves changes in existing ground levels or provision of structures will require site specific flood risk assessment at planning application stage which demonstrates that the proposed development will not be at an unacceptable risk from flooding, and will not cause, contribute to, or exacerbate flooding elsewhere.
Commercial / Residential	Highly Vulnerable	Inappropriate in Flood Zone A and Flood Zone B
Neighbourhood Centre	Highly Vulnerable	Inappropriate in Flood Zone A and Flood Zone B
Enterprise and Employment	Less Vulnerable	Inappropriate in Flood Zone A Any proposal for development within Flood Zone B which involves changes in existing ground levels or provision of structures will require site specific flood risk assessment at planning application stage which demonstrates that the proposed development will not be at an unacceptable risk from flooding, and will not cause, contribute to, or exacerbate flooding elsewhere.

5.6 Justification Tests

5.6.1 Land Zonings

Land use zonings for the Plan Area have been provided by Kildare CC as part of the SFRA process. The zoning objectives have been reviewed as part of the Stage 2 assessment. The review, outlined in the following sections, applies a Plan-Making Justification Test (as per approach set out in Section 3.6.3) for areas identified to include 'inappropriate' land zonings relative to Flood Zones as per the guidance set out in the OPW Guidelines.

This process includes consideration of the specific land use zoning objectives as well as comment on the source / nature of flood risk. Recommendations are presented on how flood risk is proposed to be managed within the area identified.

5.6.2 Plan-Making Justification Tests

Plan-making Justification Tests for all land use zonings identified as 'inappropriate' have been carried out by Kildare CC and are included in Appendix B. It is noted that in some cases, land use zoning parcels have been grouped by land use zoning type within the Justification Tests.

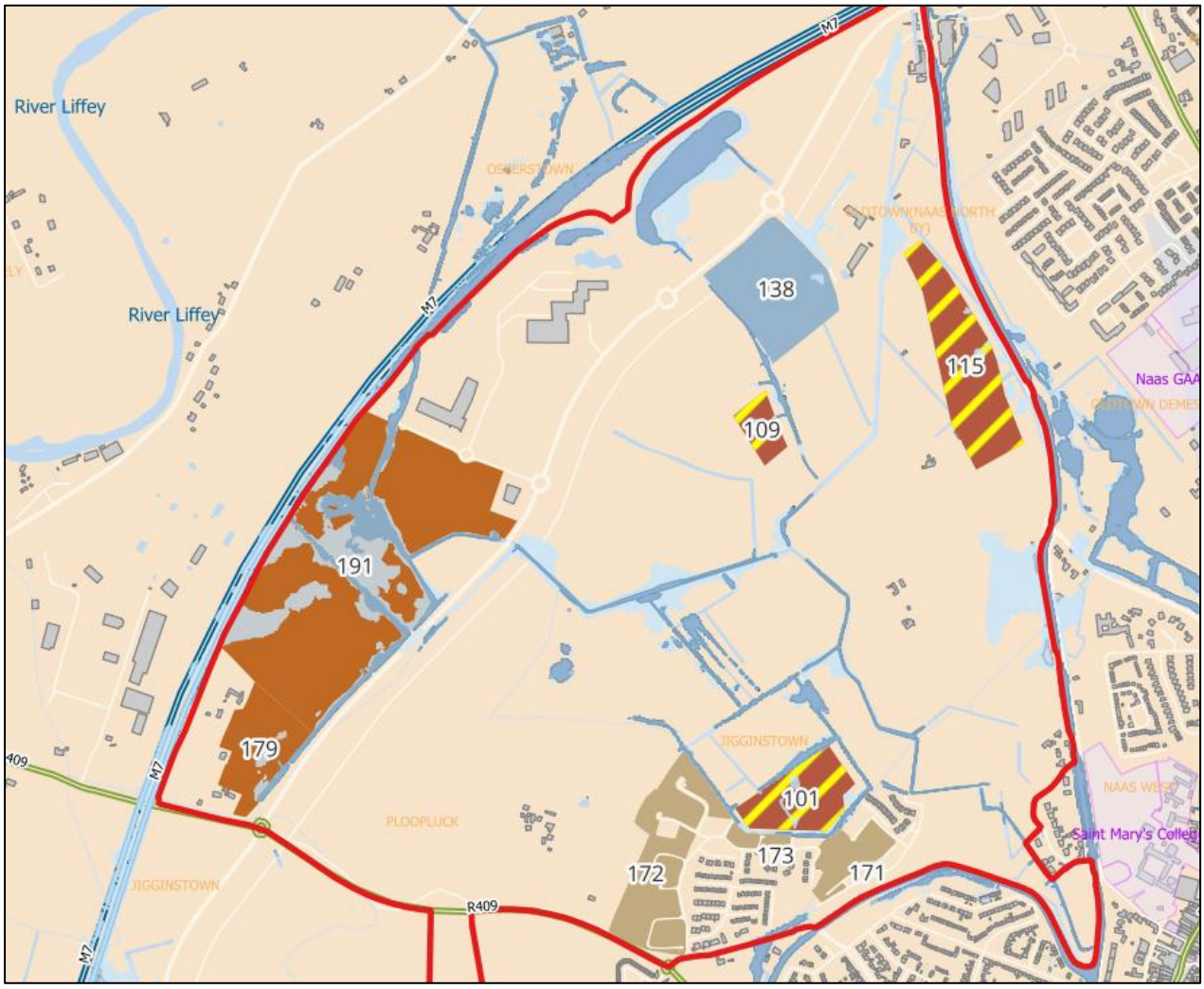
In line with the OPW Guidelines, 'inappropriate' land use zonings are:

- Highly vulnerable uses in Flood Zone A and Flood Zone B
- Less vulnerable uses in Flood Zone A

It is noted that water compatible uses are considered appropriate in any Flood Zone.

The sites as set out in Figure 5.2 have been subject to the Plan-Making Justification Test.

Figure 5.2: Sites Subject to Kildare CC Plan-Making Justification Test



5.7 Climate Change Adaptation

While Flood Zones are generated without the inclusion of allowances for climate change, the OPW Guidelines, Kildare CDP and Naas LAP recognise that climate change, including its potential impact on flood risk, is a key consideration for future development. Allowances for the Mid-Range Future Scenario (MRFS) and High-End Future Scenario (HEFS) are shown in Table 3.6, based on the OPW's Climate Change Sectoral Adaptation Plan, 2025 (see Section 3.7).

The potential impact of climate change on development proposals should be considered for any site where a Stage 2 or Stage 3 FRA has been identified as being required (i.e. flood risk has not been screened out in a Stage 1 FRA). The source of climate change flood risk may be fluvial or pluvial and will generally result in higher flood levels and wider flood extents than present-day projections.

Climate change projections are to be applied depending on the receptor vulnerability as follows:

- HEFS is to be considered for 'highly vulnerable' development
- MRFS is to be considered for 'less vulnerable' development
- Climate change is generally not a critical consideration for 'water compatible' development but if required (e.g. to ascertain flood depths), the MRFS will apply

For mixed use developments, both HEFS and MRFS should be assessed and applied depending on the vulnerability of the part of the development under consideration.

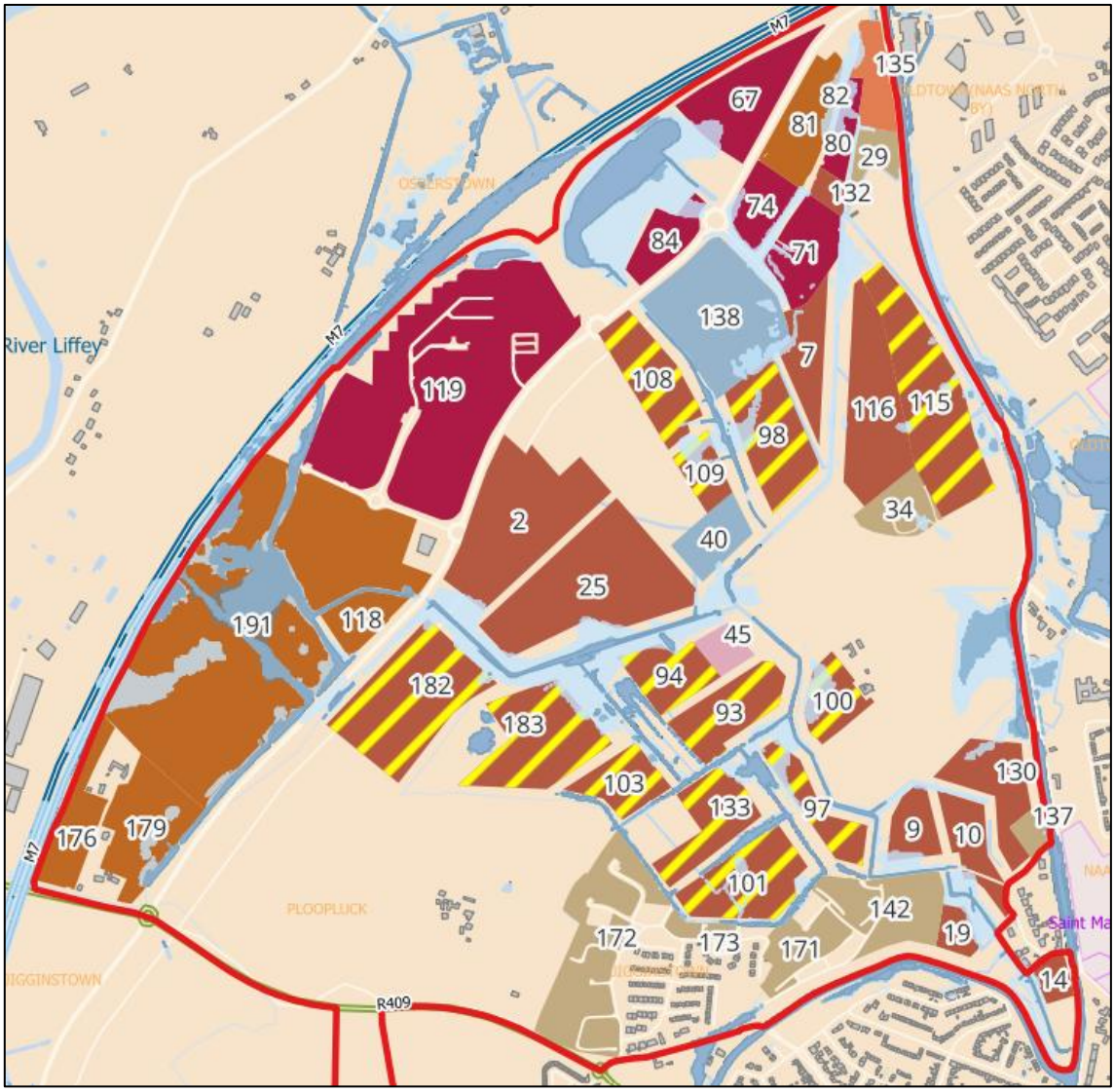
For purposes of site-specific flood risk assessment to inform development management and control:

- Climate change impacts on fluvial flooding where no mapped flood data is available are to be assessed by an appropriate methodology which will normally[1] require site-specific hydraulic modelling by increasing the estimated flows by the factor shown in Table 3.6.
- SSFRAs should address climate change scenarios in relation to Finished Floor Levels (FFLs)/ Finished Ground Levels (FGLs) and potential mitigation measures in these areas.
- Any proposed development within the Plan Area should have regard to the progression and impacts of the development of the proposed Naas Flood Relief Scheme, ensuring no interference or future pressure upon the scheme as development within the Plan Area progresses.

Climate Change Flood Maps were produced as part of the Stage 1 of the Naas FRS, an extract of which is shown in Figure 4.2. Sites zoned for 'highly vulnerable' and 'less vulnerable' uses affected by the climate change flood extents are presented in Figure 5.3, alongside the HEFS flood extents. Any development within the sites identified below should undertake a suitable SSFRA, considering the effects of climate change. Each of these sites have sufficient scope to employ the sequential approach and appropriate mitigation measures to accommodate for the effects of climate change.

[1] *The OPW Guidelines state that in the absence of climate change data, the 0.1% AEP flood can be taken / applied as the 1% AEP + CC flood but this approach should only be used the effect is proportionate the scale and nature of the development*

Figure 5.3: Zoned Lands affected by Naas Flood Study HEFS Flood Extents



6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary

This SFRA report has been prepared in accordance with the OPW Guidelines and provides Stage 1 and 2 assessments of all sources of flood risk within the Plan Area to assist Kildare CC in making informed strategic decisions in relation to the future development of the Plan Area.

In achieving the aims and objectives of the OPW Guidelines, Kildare CC should:

- Adopt a sequential approach to flood risk management, which aims to avoid flood risk where possible, substitute less vulnerable uses where avoidance is not possible, and mitigate and manage the risk where avoidance and substitution are not possible.
- Apply the Justification Test for development in Flood Zones.

No coastal flood risk has been identified at the Plan Area.

Fluvial flood zones have been defined by updated detailed modelling for all watercourses within the Plan Area as undertaken on behalf of Kildare CC in 2026.

A precautionary approach should also be applied to flood risk management to reflect uncertainties in available flood data, risk assessment techniques, and climate change projections.

It is noted that this SFRA is not intended to eliminate the need for a detailed site-specific FRA where future development is proposed within a part of the Plan Area. As discussed in Section 3.8 the 'stage' of FRA required will depend on / must be appropriate for the scale and nature of the flood risk issues, site or area, and development proposals.

The Sequential Approach and guidance outlined in the OPW Guidelines and Naas LAP SFRA should be applied in any future development proposals relevant to the subject Plan Area.

6.2 Recommendations

6.2.1 Land Use

Siting of future development proposals within the Plan Area should be cognisant of the receptor vulnerability set out in Section 5.5 of this report alongside the Flood Zone Map provided as part of this assessment, i.e.:

- Highly vulnerable development (e.g. residential) in Flood Zone C.
- Less vulnerable development (e.g. local access roads, car parking, commercial) in Flood Zone C and Flood Zone B.
- Water compatible development (e.g. open amenity space) in Flood Zone C, Flood Zone B and Flood Zone A.

Any deviation from the above would require the preparation of a Development Management Justification Test to support proposals within an 'inappropriate' Flood Zone.

6.2.2 Development Management

Development management of flood risk shall be in accordance with the OPW Guidelines, as well as policies in the Naas Local Area Plan 2021-2027 and associated SFRA (see Section 4.4). Further reference should be made to the Kildare County Development Plan 2023-2029, and the associated SFRA.

A key mechanism for providing flood protection and resilience is the setting of Finished Floor Levels (FFLs), Finished Ground Levels (FGLs), or flood defence levels with appropriate freeboard above the relevant design flood levels.

Freeboard is a safety margin to account for uncertainties in flood level prediction and / or structural performance. It is the difference between the FFL, FGL, or flood defence level and the applicable adjacent design flood level. Freeboard is designed to account for uncertainty in hydrological predictions, modelling accuracy, topographical accuracy, and the quality of digital elevation models.

In accordance with the OPW Guidelines, access to / egress from any future development within the Plan Area should be within Flood Zone C (i.e., outside the 0.1% AEP floodplain) to allow for safe emergency access / egress.

6.2.3 Surface Water Management

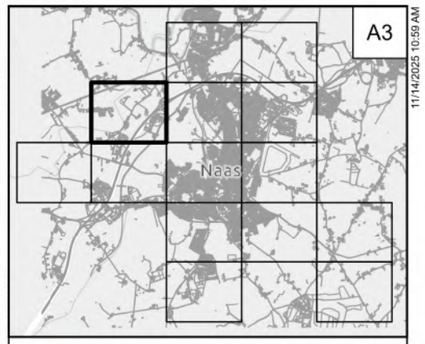
Management of internal surface water runoff within the Plan Area (i.e., surface water from any future development) shall be managed in accordance with the Surface Water Management Plan, as prepared for the Plan Area.

6.2.4 Naas Flood Relief Scheme

The Proposed Kildare County Development Plan Variation: Northwest Quadrant (Naas) and any proposed development within the Plan Area should have regard to the progression and impacts of the development of the proposed Naas Flood Relief Scheme, ensuring no interference or future pressure upon the scheme as development within the Plan Area progresses.

Appendix A

Kildare CC Flood Mapping



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10% Fluvial AEP Event
1% Fluvial AEP Event
0.1% Fluvial AEP Event
Culverted Watercourse
Open Watercourse

Ccordinate System: IRENET95 Irish Transverse Mercator

Rev	Date	By	Chkd	Appd	Authd
P01	14/11/2025	AB	KL	RR	--

ARUP

50 Ringsend Road
Dublin
D04 T6X0
Ireland
Tel +353 1 233 4455
www.arup.com

Client

OPW Oifig na nOibreacha Poiblí Office of Public Works

Project Name

Naas FRS

Drawing Title

Naas Fluvial Flood Extents
Map type: Flood Extent
Scenario: Current
Source: Fluvial
Map 2 of 14

Scale at A3

1:6,000

Rcle

Flood Mapping

Suitability

For Information

Project Number

278383-21

Rev

P01

Drawing Number

278383-ARUP-01-M2-DR-CF-000042

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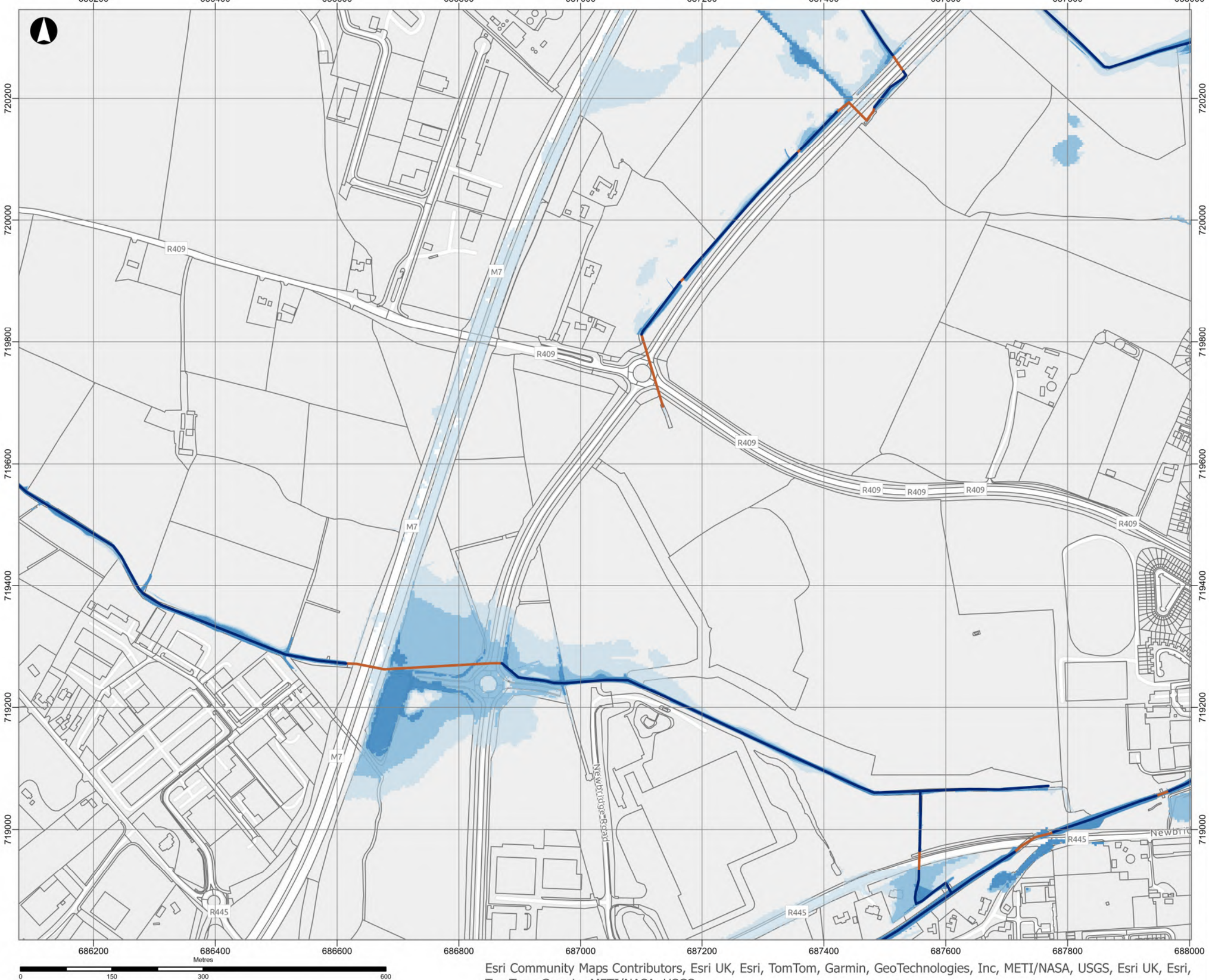

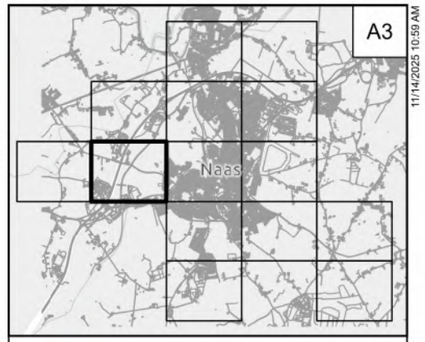

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1% Fluvial AEP Event
0.1% Fluvial AEP Event
Culverted Watercourse
Open Watercourse

Ccordinate System: IRENET95 Irish Transverse Mercator

Rev	Date	By	Chkd	Appd	Authd
P01	14/11/2025	AB	KL	RR	--

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Client

OPW Oifig na nOibreacha Poiblí Office of Public Works

Project Name

Naas FRS

Drawing Title

Naas Fluvial Flood Extents
Map type: Flood Extent
Scenario: Current
Source: Fluvial
Map 3 of 14

Scale at A3

1:6,000

Rcle

Flood Mapping

Suitability

For Information

Project Number	Rev
278383-21	**P01**

Drawing Number

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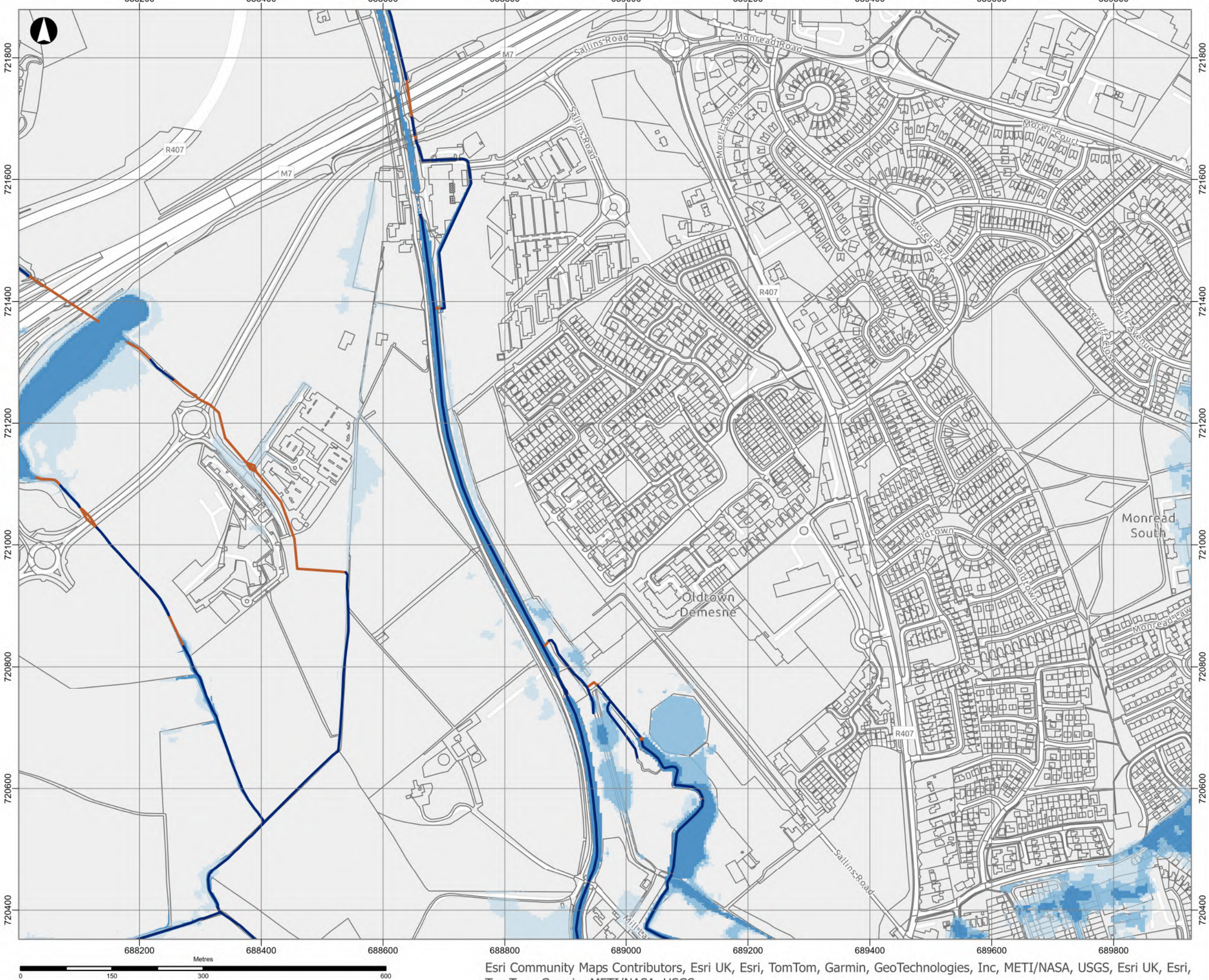

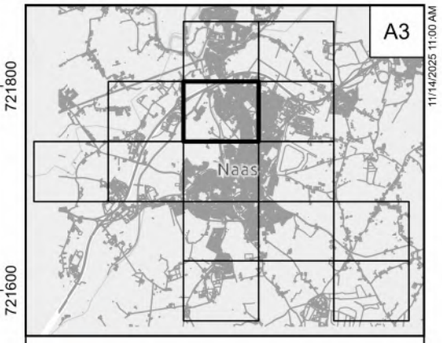

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1% Fluvial AEP Event
0.1% Fluvial AEP Event
Culverted Watercourse
Open Watercourse

Ccordinate System: IRENET95 Irish Transverse Mercator

Rev	Date	By	Chkd	Appd	Authd
P01	14/11/2025	AB	KL	RR	--

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Client

OPW Oifig na nOibreacha Poiblí Office of Public Works

Project Name

Naas FRS

Drawing Title

Naas Fluvial Flood Extents
Map type: Flood Extent
Scenario: Current
Source: Fluvial
Map 5 of 14

Scale at A3

1:6,000

Rcle

Flood Mapping

Suitability

For Information

Project Number	Rev
278383-21	**P01**

Drawing Number

278383-ARUP-01-M2-DR-CF-000045

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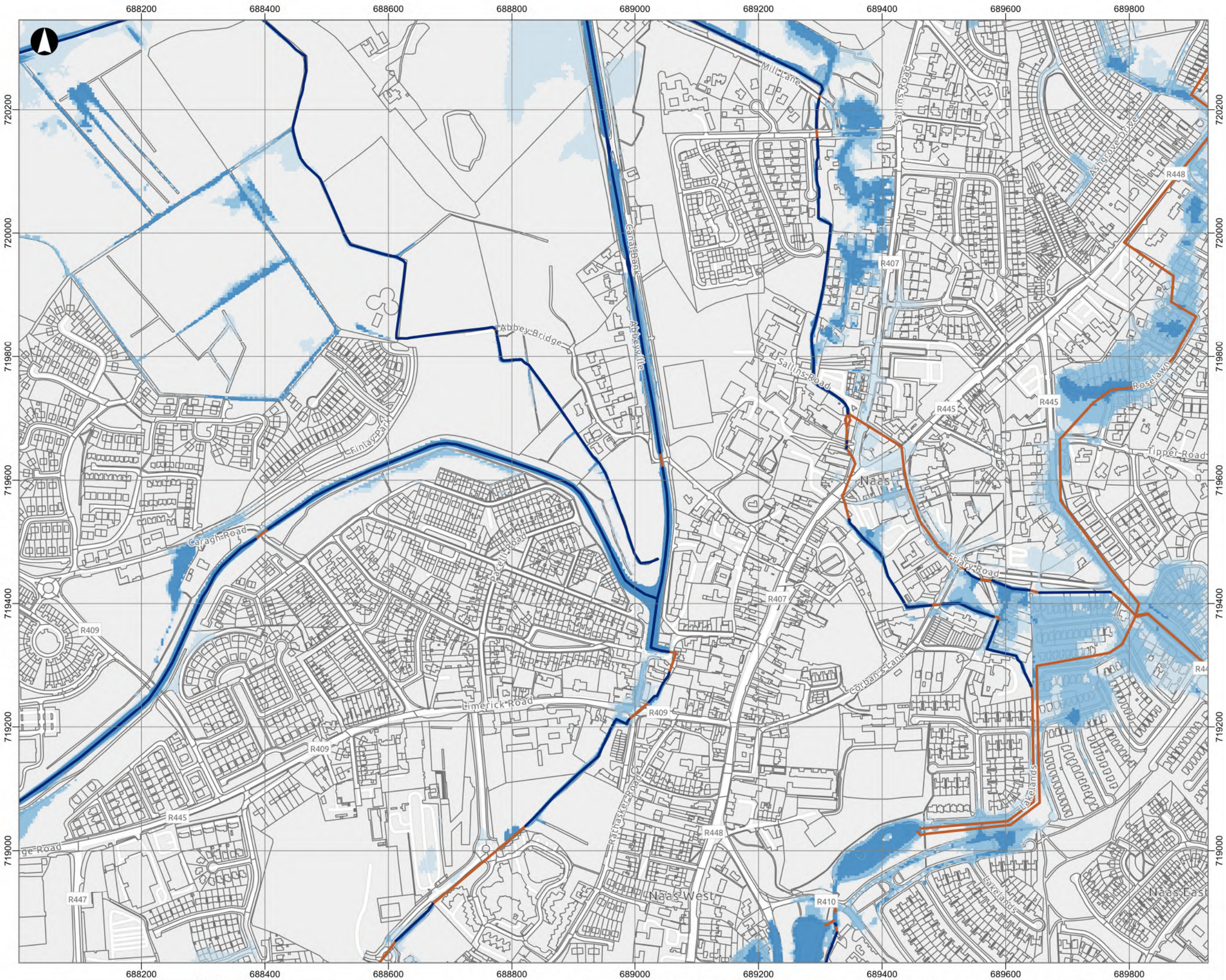

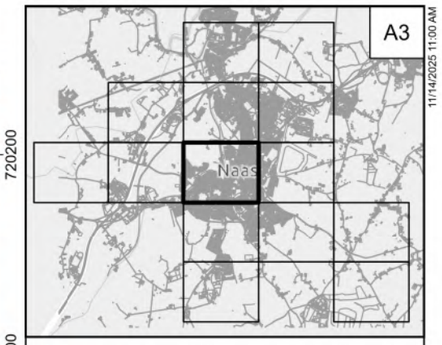

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1% Fluvial AEP Event
0.1% Fluvial AEP Event
Culverted Watercourse
Open Watercourse

Coordinate System: IRENET95 Irish Transverse Mercator

Rev	Date	By	Chkd	Appd	Authd
P01	14/11/2025	AB	KL	RR	--

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Client

OPW Oifig na nOibreacha Poiblí Office of Public Works

Project Name
Naas FRS

Drawing Title
Naas Fluvial Flood Extents
Map type: Flood Extent
Scenario: Current
Source: Fluvial
Map 6 of 14

Scale at A3
1:6,000

Rcle
Flood Mapping

Suitability
For Information

Project Number
278383-21

Rev
P01

Drawing Number
278383-ARUP-01-M2-DR-CF-000046

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Appendix B

Kildare County Council

Plan-Making Justification Tests

Northwest Quadrant (Naas)

Proposed Variation No.5 to Kildare CDP

Strategic Flood Risk Assessment / **Site Justification Tests**

fid	zone_orig	zone_gzt	zone_desc	FZA?	FZB?	FZ?	JT?
171, 172, 173	Existing Residential	B	To protect and enhance the amenity of established residential communities and promote sustainable intensification.	Y	Y	FZB	Y
101	New Residential Phase 2 with residual mitigatable flood risk	Cp2*	To protect future development lands from inappropriate forms of development which would impede the delivery of the Northwest Quadrant (Naas) Framework Masterplan, within layouts designed to accommodate minimal 0.1% AEP flood risk areas within land parcel		Y	FZB	Y
109	New Residential Phase 2 with residual mitigatable flood risk	Cp2*	To protect future development lands from inappropriate forms of development which would impede the delivery of the Northwest Quadrant (Naas) Framework Masterplan, within layouts designed to accommodate minimal 0.1% AEP flood risk areas within land parcel		Y	FZB	Y
115	New Residential Phase 2 with residual mitigatable flood risk	Cp2*	To protect future development lands from inappropriate forms of development which would impede the delivery of the Northwest Quadrant (Naas) Framework Masterplan, within layouts designed to accommodate minimal 0.1% AEP flood risk areas within land parcel		Y	FZB	Y
138	Community and Education	E (1)	To provide for education, recreation, community and health.		Y	FZB	Y
179	Light Industry and Warehousing with residual mitigatable flood risk	H*	To provide for industry, manufacturing, distribution and warehousing.	Y	Y	FZA	Y
191	Light Industry and Warehousing	H	To provide for industry, manufacturing, distribution and warehousing.	Y	Y	FZA	Y

Existing Residential at Finlay Park and Caragh Green

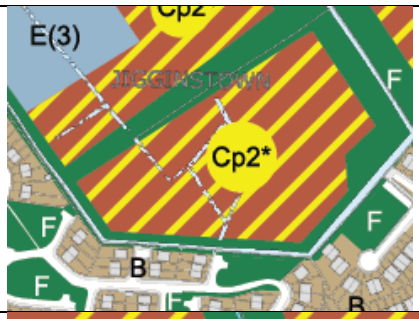
Statutory plan	CDP Variation No.5: Northwest Quadrant (Naas)
Site fid	171, 172, 173
Site name	Northwest Quadrant (Naas) / **Jigginstown / Existing Residential at Finlay Park and Caragh Green**

1	The Regional Planning Guidelines for the Greater Dublin Area 2010 2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS) and National Planning Framework.	Naas is one of two Key Towns in Co. Kildare as identified in the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031. Key Towns are defined in the RSES as large towns which are economically active towns that provide employment for their surrounding areas. They have high quality transport links and the capacity to act as a regional driver to complement Regional Growth Centres. The designation of Naas as a Key Town is reflective of its county town status. The RSES recognises that there are strong links between Naas and the nearby settlements of Sallins and Newbridge, with a strong interrelationship of services, employment and education between Naas and Newbridge. The RSES also states that consolidation and the regeneration are key development priorities for Naas. The RSES provides regional level strategic planning and economic policy in support of the implementation of the NPF and provide a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.
2.	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	Land at Caragh Green / Finlay Park given a land use zoning objective: **B. Existing Residential**
i)	Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement,	No. Lands in the Residential Estate (proximate to Naas urban centre) are already developed and in residential use. The current zoning objective would facilitate infill development, where appropriate, adjacent to the centre of the urban settlement.
ii)	Comprises significant previously developed and / or underutilized lands,	No. The housing plots affected are not strategic in nature.
iii)	Is within or adjoining the core of an established or designated urban settlement,	The lands comprise an existing residential development constructed prior to the *Naas Flood Risk Study 2026*.
iv)	Will be essential in achieving compact and sustainable urban growth, and	The lands comprise an existing residential development constructed prior to the *Naas Flood Risk Study 2026*.

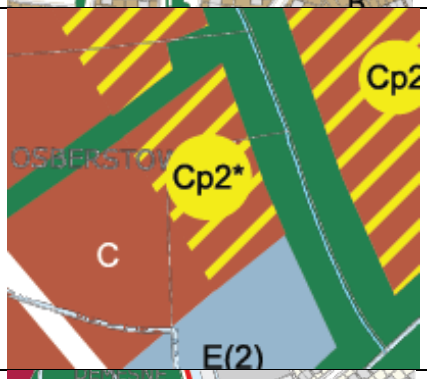
v)	There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	**Finlay Park and Caragh Green** have been developed as residential developments. Having regard to the developed nature of lands it is considered reasonable to retain the use subject to a stipulation that any development within the areas of the flood risk zone include measures to mitigate against flooding. Therefore, prior to any further development being permitted a SSFRA should be undertaken to the satisfaction of Kildare County Council.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment	The flood mapping indicates that a small area of the site overlaps with Flood Zone in relation to two residential plots. The proposed zonings can be allocated but future development in this area should be subject to a SSFRA. SSFRAs should address the following: • Apply sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain, • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% AEP level, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas.

Phase 2 Residential Development with residual mitigatable flood risk

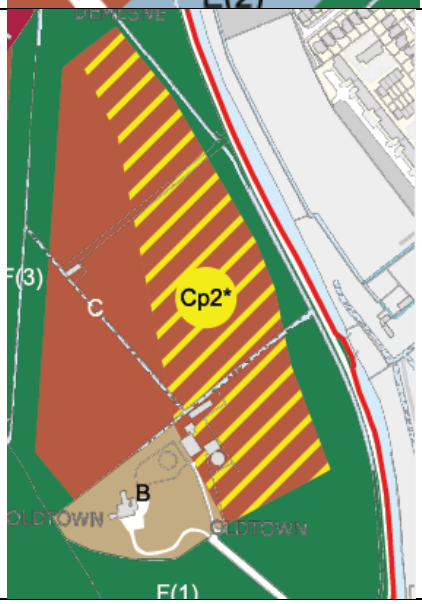
Statutory plan	CDP Variation No.5: Northwest Quadrant (Naas)
Site fid	101
Site size	c.4 hectares (40,000sqm)
Site name	Northwest Quadrant (Naas) / Jigginstown / **Phase 2 Residential with residual mitigatable flood risk**



Statutory plan	CDP Variation No.5: Northwest Quadrant (Naas)
Site fid	109
Site size	c.1 hectares (10,000sqm)
Site name	Northwest Quadrant (Naas) / Oldtown / **Phase 2 Residential with residual mitigatable flood risk**



Statutory plan	CDP Variation No.5: Northwest Quadrant (Naas)
Site fid	115
Site size	c.6 hectares (60,000sqm)
Site name	Northwest Quadrant (Naas) / Oldtown / **Phase 2 Residential with residual mitigatable flood risk**



1	The Regional Planning Guidelines for the Greater Dublin Area 2010 2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS) and National Planning Framework.	Naas is one of two Key Towns in Co. Kildare as identified in the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031. Key Towns are defined in the RSES as large towns which are economically active towns that provide employment for their surrounding areas. They have high quality transport links and the capacity to act as a regional driver to complement Regional Growth Centres. The designation of Naas as a Key Town is reflective of its county town status. The RSES recognises that there are strong links between Naas and the nearby settlements of Sallins and Newbridge, with a strong interrelationship of services,

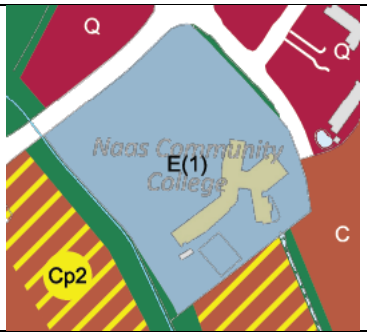
		employment and education between Naas and Newbridge. The RSES also states that consolidation and the regeneration are key development priorities for Naas. The RSES provides regional level strategic planning and economic policy in support of the implementation of the NPF and provide a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.
2.	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	**Cp2* - Phase 2 Residential development with residual mitigatable flood risk**
i)	Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement,	Northwest Quadrant will be a master planned urban extension that consolidates Naas town and facilitates the regeneration of the Naas urban core by improving the economic fundamentals of the urban core through an increase in the overall critical mass of the town and also contiguous and proximate development providing critical mass through the provision of direct connections to and through the Northwest Quadrant from the urban core. The NWQ will have a direct benefit to the Naas Canal Quarter regeneration zone of the town centre.
ii)	Comprises significant previously developed and / or underutilized lands,	KCC have been aiming to bring forward the development of the Northwest Quadrant for c.20 years and in this regard the land is underutilised. Most of the development in the Northwest Quadrant will be greenfield development. The Framework Masterplan and Variation make provision for c.100 hectares of land that will accommodate residential development as part of a new neighbourhood of c.290 hectares, complete with supporting infrastructure, as well as employment opportunities and a coherent mix of uses across the urban extension. The specific sites (totalling c.11 hectares in size) will provide development that can be brought forward as part of Phase 2 to form part of a new neighbourhood proximate to the Naas urban core and utilising the existing strategic assets that the urban core has. They will contribute to ensuring continuity in urban development and built form between Naas urban core and the western area of the Northwest Quadrant / edge of Naas. The developments will utilise the assets provided as part of Phase One of the Northwest Quadrant and

		provide new infrastructure that will contribute to the creation of a coherent new urban extension and new community.
iii)	Is within or adjoining the core of an established or designated urban settlement,	Yes. The Northwest Quadrant extends from the Naas urban core to the edge of the Naas settlement boundary, from Naas Canal Harbour to the M7 motorway. The subject sites form part of the Northwest Quadrant Framework Masterplan.
iv)	Will be essential in achieving compact and sustainable urban growth, and	Northwest Quadrant is a strategic development opportunity that will provide a significant proportion of Naas's growth over this CDP and the next development plan period. The Northwest Quadrant will provide compact and sustainable growth for Naas, providing a coherent urban extension complete with all necessary supporting infrastructure (e.g. commercial, community, and active / passive open space, etc.). The delivery of the Northwest Quadrant will be critical to the future of Naas and its compact growth and sustainable development. The development of the sites in question will be critical to achieving the critical mass of development for Naas and the optimised development of the Northwest Quadrant.
v)	There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	There are no suitable alternatives to NWQ for growth of scale for Naas. • Planned via a Framework Masterplan to achieve compact growth and sustainable development in Naas for the Northwest Quadrant • Essential to achieve the regeneration of Naas Urban Core to provide critical mass to Naas and investment in the TC • Essential that urban extension achieves development yield that optimises development area. The sites proposed for development at Northwest Quadrant will accommodate development within three land parcels totalling c.11 hectares with residual areas affected by flood extent. Having regard to the residual flood risk and the need to optimise the use of land it is considered reasonable to allocate the site for future residential development subject to a stipulation that any development within the areas of the flood risk zone include measures to

		mitigate against flooding. Therefore, prior to any development being permitted SSFRA should be undertaken to the satisfaction of Kildare County Council.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment	The flood mapping indicates that there is residual flood risk with very small areas of the sites overlapping with the Flood Zone away from the site edge zones. The proposed land use can be allocated but future development in this area should be subject to a SSFRA. SSFRAs should address the following: • Apply sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain, • Site layout incorporating f mitigation to address water volume within GBI / open space that may exceed minimum standards to achieve flood management and provision of excellent open space. • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% AEP level, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas.

Naas Community College (Existing Post-Primary School)

Statutory plan	CDP Variation No.5: Northwest Quadrant (Naas)
Site fid	138
Site size	c. 6 hectares (60,000sqm)
Site name	Northwest Quadrant (Naas) / Oldtown / Naas Community College

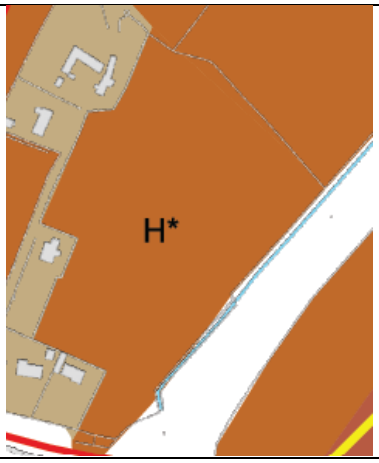


1	The Regional Planning Guidelines for the Greater Dublin Area 2010 2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS) and National Planning Framework.	Naas is one of two Key Towns in Co. Kildare as identified in the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031. Key Towns are defined in the RSES as large towns which are economically active towns that provide employment for their surrounding areas. They have high quality transport links and the capacity to act as a regional driver to complement Regional Growth Centres. The designation of Naas as a Key Town is reflective of its county town status. The RSES recognises that there are strong links between Naas and the nearby settlements of Sallins and Newbridge, with a strong interrelationship of services, employment and education between Naas and Newbridge. The RSES also states that consolidation and the regeneration are key development priorities for Naas. The RSES provides regional level strategic planning and economic policy in support of the implementation of the NPF and provide a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.
2.	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	**E. Community and Education**
i)	Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement,	The existing post-primary school educational use serves the Naas School Planning Area catchment and will also serve the Northwest Quadrant as it is developed. The Northwest Quadrant forming an expansion of the centre of Naas. The existing school's ability to serve the Northwest Quadrant as part of its catchment will be enhanced should a post-primary school be developed elsewhere to serve a portion of the SPA (e.g. Sallins

		where a significant proportion of the school roll resides).
ii)	Comprises significant previously developed and / or underutilized lands,	The school occupies a site of approximately 5 hectares, with c.2.6 hectares of the site capable of accommodating uses ancillary to the school building (e.g. sports grounds) or educational uses.
iii)	Is within or adjoining the core of an established or designated urban settlement,	The school campus forms part of the Northwest Quadrant that adjoins the core of Naas. The Naas Community College School campus forms part of the proposed contiguous development between Naas urban centre and the M9 motorway.
iv)	Will be essential in achieving compact and sustainable urban growth, and	The existing school provides an educational service to Naas and is therefore central to the compact growth and sustainable development of Naas. The school has the capacity to be developed further to enhance its role in ensuring that Naas benefits from compact growth as the Northwest Quadrant is developed.
v)	There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	The school is an existing development. The residual of the school site has the capacity for development and is adversely impacted by residual flood risk in one location that would not impact the ability of the site to be developed to any degree, subject to Site Specific Flood Risk Assessment to provide an evidence base for any proposals.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment	The flood mapping indicates that a very small area of the site overlaps with the Flood Zone, and this is located away from the site edge zone and is adjacent to the existing buildings. The balance of the site (to the north of the school buildings) is not adversely impacted by flood risk and could accommodate development (e.g. educational buildings, sports facilities or other uses compatible with the zoning objective). The existing land use (the post-primary school) can be allocated but future development on this school campus site should be subject to a SSFRA. SSFRAs should address the following: • Apply sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain, • Site layout incorporating f mitigation to address water volume within GBI / open space that may exceed minimum standards to achieve flood

		management and provision of excellent open space. • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% AEP level, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas.

Statutory plan	CDP Variation No.5: Northwest Quadrant (Naas)
Site fid	179
Site size	c. 3.5 hectares (35,000 square metres)
Site name	Northwest Quadrant (Naas) / Ploopluck / **Corner New Caragh Road Light Industry and Warehousing**

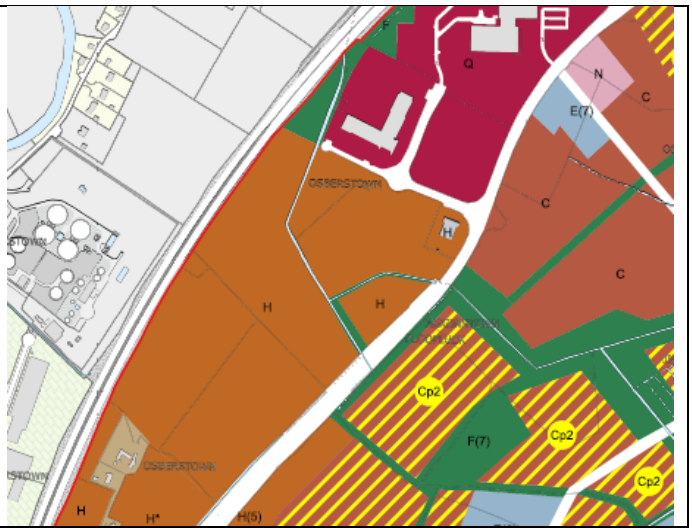


1	The Regional Planning Guidelines for the Greater Dublin Area 2010 2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS) and National Planning Framework.	Naas is one of two Key Towns in Co. Kildare as identified in the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031. Key Towns are defined in the RSES as large towns which are economically active towns that provide employment for their surrounding areas. They have high quality transport links and the capacity to act as a regional driver to complement Regional Growth Centres. The designation of Naas as a Key Town is reflective of its county town status. The RSES recognises that there are strong links between Naas and the nearby settlements of Sallins and Newbridge, with a strong interrelationship of services, employment and education between Naas and Newbridge. The RSES also states that consolidation and the regeneration are key development priorities for Naas. The RSES provides regional level strategic planning and economic policy in support of the implementation of the NPF and provide a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.
2.	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	**H*. Light Industry and Warehousing with residual mitigatable flood risk**
i)	Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement,	Northwest Quadrant will be a master planned urban extension that consolidates Naas town and facilitates the regeneration of the Naas urban core by improving the economic fundamentals of the urban core through an increase in the overall critical mass of the town and also contiguous and proximate development providing critical mass through the provision of direct connections to and

		through the Northwest Quadrant from the urban core. The NWQ will have a direct benefit to the Naas Canal Quarter regeneration zone of the town centre.
ii)	Comprises significant previously developed and / or underutilized lands,	The site is not previously developed. The land falls within the Northwest Quadrant, a major urban extension of c.290 hectares that has been master planned for the purposes of development. In this context the land is underutilised as there will be an opportunity cost to not developing the land to an optimal level.
iii)	Is within or adjoining the core of an established or designated urban settlement,	Yes. The Northwest Quadrant extends from the Naas urban core to the edge of the Naas settlement boundary, from Naas Canal Harbour to the M7 motorway. The subject site forms part of the Northwest Quadrant Framework Masterplan.
iv)	Will be essential in achieving compact and sustainable urban growth, and	Northwest Quadrant is a strategic development opportunity that will provide a significant proportion of Naas's growth over this CDP and the next development plan period. The delivery of the Northwest Quadrant will be critical to the future of Naas and its compact growth and sustainable development. The Northwest Quadrant Framework Masterplan will provide a coherent urban extension complete with all necessary supporting infrastructure (e.g. commercial, community, and active / passive open space, etc.). The development of the site in question for employment forms part of the overall mix of land uses, with employment uses located NW of the Millennium Park Road. The provision of employment uses in this location forms part of the overall masterplan, and the masterplan envisages that this employment will be located adjacent to residential development. Development will be contiguous upon buildout and extend from the urban core to the M7 motorway.
v)	There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	The development of the site for economic development purposes is part of the coherent Framework Masterplan for the Northwest Quadrant. The development of this site is consistent with other land uses adjacent to the site. The site has residual flood risk that Kildare County Council considers could be mitigated at planning application stage by Site Specific Flood Risk Assessment.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic	The flood mapping indicates that a very small area of the site overlaps with the Flood Zone, and this is generally located away from the site edge zone, although there is

	Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment	some residual flood risk at a watercourse on the site boundary. The *Hydrology and Hydraulic Modelling Report* indicates that the water may be backing up due to the presence of culverts under the Millennium Park Road. Residual flood risk should be considered at planning application stage through Site-Specific Flood Risk Assessment. SSFRAs should address the following: • Apply sequential approach should be applied through site planning and should avoid encroachment onto, or loss of, the flood plain, • Site layout incorporating f mitigation to address water volume within GBI / open space that may exceed minimum standards to achieve flood management and provision of excellent open space. • Should address climate change scenarios in relation to FFLs and potential mitigation measures, • Finished floor levels should be above the 0.1% AEP level, • Flood resilient construction materials and fittings should be considered, • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas.

Statutory plan	CDP Variation No.5: Northwest Quadrant (Naas)
Site fid	191
Site size	c.21 hectares
Site name	Northwest Quadrant (Naas) / Ploopluck / Millennium Park Road (North) Light Industrial and Warehousing



1	The Regional Planning Guidelines for the Greater Dublin Area 2010 2022 set out the planned direction for growth within the Greater Dublin Area up to 2022 by giving regional effect to national planning policy under the National Spatial Strategy (NSS) and National Planning Framework.	Naas is one of two Key Towns in Co. Kildare as identified in the Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region 2019-2031. Key Towns are defined in the RSES as large towns which are economically active towns that provide employment for their surrounding areas. They have high quality transport links and the capacity to act as a regional driver to complement Regional Growth Centres. The designation of Naas as a Key Town is reflective of its county town status. The RSES recognises that there are strong links between Naas and the nearby settlements of Sallins and Newbridge, with a strong interrelationship of services, employment and education between Naas and Newbridge. The RSES also states that consolidation and the regeneration are key development priorities for Naas. The RSES provides regional level strategic planning and economic policy in support of the implementation of the NPF and provide a greater level of focus around the National Policy Objectives and National Strategic Outcomes of the NPF.
2.	The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	**H. Light Industry and Warehousing**
i)	Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement,	Northwest Quadrant will be a master planned urban extension that consolidates Naas town and facilitates the regeneration of the Naas urban core by improving the economic fundamentals of the urban core through an increase in the overall critical mass of the town and

		also contiguous and proximate development providing critical mass through the provision of direct connections to and through the Northwest Quadrant from the urban core. The NWQ will have a direct benefit to the Naas Canal Quarter regeneration zone of the town centre. The Northwest Quadrant will extend from Naas Urban Core to the M7, which defines the edge of the Naas settlement. The subject site forms part of the Northwest Quadrant.
ii)	Comprises significant previously developed and / or underutilized lands,	The site is not previously developed. The land falls within the Northwest Quadrant, a major urban extension of c.290 hectares that has been master planned for the purposes of development. In this context the land is underutilised as there will be an opportunity cost to not developing the land to an optimal level.
iii)	Is within or adjoining the core of an established or designated urban settlement.	Yes. The Northwest Quadrant extends from the Naas urban core to the edge of the Naas settlement boundary, from Naas Canal Harbour to the M7 motorway. The subject site forms part of the Northwest Quadrant Framework Masterplan.
iv)	Will be essential in achieving compact and sustainable urban growth, and	Northwest Quadrant is a strategic development opportunity that will provide a significant proportion of Naas's growth over this CDP and the next development plan period. The delivery of the Northwest Quadrant will be critical to the future of Naas and its compact growth and sustainable development. The Northwest Quadrant Framework Masterplan will provide a coherent urban extension complete with all necessary supporting infrastructure (e.g. commercial, community, and active / passive open space, etc.). The development of the site in question for employment forms part of the overall mix of land uses, with employment uses located NW of the Millennium Park Road. The provision of employment uses in this location forms part of the overall masterplan, and the masterplan envisages that this employment will be located adjacent to residential development. Development will be contiguous upon buildout and extend from the urban core to the M7 motorway.

v)	There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	The Northwest Quadrant Framework Masterplan sets out the development framework for a c.290-hectare urban extension to Naas that is contiguous to Naas town centre and will provide coherent development that extends to the M7, including the subject site. There are no other lands of similar scale in Naas that are sequential and would result in such excellent compact growth outcomes. The urban extension targets the development of a substantial residential yield to meet the growth needs of Naas, along with accompanying job creation to contribute to the achievement of a sustainable urban extension that provides opportunities for people to live and work within the Northwest Quadrant and within Naas. This approach targets a healthy jobs ratio for Naas in accordance with its strategic economic role within County Kildare, and this has the potential to reduce the outflow of commuters from Naas by providing jobs for those living within the town. The subject site is proposed to be developed for an economic use of a scale that would be significant for Naas and County Kildare. The proposed use will require a site of substantial size, and the proposed land use is consistent with the Framework Masterplan, subject to flood mitigation. The site selected has some flood extent at the centre of the site that would not be compatible with a low vulnerability use. Kildare County Council would like to explore whether the flood risk can be mitigated and will undertake a Site-Specific Flood Risk Study to provide an evidence base to understand the impact of the mitigations. Should the flood risk be mitigated effectively by the measures then the allocation of the site for employment development would be considered appropriate.

3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere. N.B. The acceptability or otherwise of levels of any residual risk should be made with consideration for the proposed development and the local context and should be described in the relevant flood risk assessment	The flood mapping indicates that this site is subject to 1:100 flooding from the Ploopluck Stream / Oldtown Stream at the centre of the site in two locations. The Naas Flood Extent Mapping and its supporting *Hydrology and Hydraulic Modelling Report* indicates that the primary cause of this flooding is likely to be the presence of an inappropriately undersized pipe under an access track (to a waste water pumping station) within the site boundary. Kildare County Council considers that the 1:100 flood impact could effectively be mitigated by several measures, including the removal of the pipe / culvert at the access track, enlargement of two pipes / culverts under Millennium Park Road, enlargement of channels, raising of ground levels at centre of site, lowering of ground level adjacent to the M7 to create compensatory storage upstream from the motorway culvert. Kildare County Council will complete a *Site-Specific Flood Risk Assessment* to provide an evidence base to justify the allocation of the site. TKCC aim to prepare the SSFRA in time to inform the Council's consideration of the Chief Executive's Report on submissions and Proposed Material Amendments.