Ballinasloe Strategic Flood Risk Assessment

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This report describes work commissioned by Galway County Council

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Purpose

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Contents

List of Figures

List of Tables

Abbreviations

1D	One Dimensional (modelling)
2D	Two Dimensional (modelling)
AEP	Annual Exceedance Probability
AFA	Area for Further Assessment
CFRAM	Catchment Flood Risk Assessment and Management
DTM	Digital Terrain Model
EPA	Environmental Protection Agency
FEH	Flood Estimation Handbook
FFL	Finished Floor Level
FRA	Flood Risk Assessment
FRMP	Flood Risk Management Plan
FRR	Flood Risk Review
FSU	Flood Studies Update
GIS	Geographical Information System
HEFS	High End Future Scenario
HPW	High Priority Watercourse
JFLOW	2-D hydraulic modelling package developed by JBA
JT	Justification Test
LA	Local Authority
GCC	Galway County Council
GCDP	Galway County Development Plan
MPW	Medium Priority Watercourse
MRFS	Medium Range Future Scenario
OPW	Office of Public Works
OSi	Ordnance Survey Ireland
PFRA	Preliminary Flood Risk Assessment
RSES	Regional Spatial and Economic Strategy
SEA	Strategic Environmental Assessment
SFRA	Strategic Flood Risk Assessment
SuDS	Sustainable Drainage Systems

1 Introduction

JBA Consulting was appointed by Galway County Council to carry out the Strategic Flood Risk Assessment for the Ballinasloe Local Area Plan 2022-2028.

This report details the SFRA for this area and has been prepared in accordance with the requirements of the DoEHLG and OPW Planning Guidelines, The Planning System and Flood Risk Management[1]; these guidelines were issued under the Planning and Development Act 2000 and recognise the significance of proper planning to manage flood risk.

1.1 Terms of Reference

Under the "Planning System and Flood Risk Management" guidelines, the purpose for the FRA is detailed as being *"to provide a broad (wide area) assessment of all types of flood risk to inform strategic land-use planning decisions. SFRAs enable the LA to undertake the sequential approach, including the Justification Test, allocate appropriate sites for development and identify how flood risk can be reduced as part of the development plan process".*

The Ballinasloe Local Area Plan 2022-2028 (BLAP) will be the key document for setting out a vision for the development of Galway during the plan period.

It is important that the BLAP fulfils the requirements of the document "The Planning System and Flood Risk Management Guidelines for Planning Authorities" (OPW/DoEHLG, 2009) which states that flood risk management should be integrated into spatial planning policies at all levels to enhance certainty and clarity in the overall planning process.

In order to ensure that flood risk is integrated into the BLAP, the main requirements of the SFRA are to:

- Update the Flood Zone Mapping produced under the 2015-2021 plan
- Prepare a Stage 2 - Flood Risk Assessment of Ballinasloe in particular in relation to location and type of zoning and land-use proposals, with a focus on new or changed zoning compared with the current plan.
- Review and update the policy guidance within the SFRA in compliance with OPW/DoEHLG – "The Planning System and Flood Risk Management –Guidelines for Planning Authorities (OPW/DoEHLG, 2009)".
- Take cognizance of the Galway County Council Climate Adaptation Strategy 2019-2024, the National Climate Adaptation Framework and the various environmental and visual designations applicable to Ballinasloe.
- Advise on zonings/land use-proposals and appropriate mitigation measures, assess and report on any submissions received as part of both the preparation and the public consultation stage of the plan, as they relate to flood risk.

1.2 Report Structure

This study considers the development strategy that will form part of the Development Plan for Ballinasloe. The context of flood risk in Ballinasloe is considered with specific

[1] DoHELG and OPW (2009) The Planning System and Flood Risk Management: Guidelines for Planning Authorities

reference to a range of flood sources, including fluvial, tidal, pluvial, groundwater, sewer and artificial reservoirs and canals.

A two-stage assessment of flood risk was undertaken, as recommended in 'The Planning System and Flood Risk Management' guidelines, for the area that lies within the development boundary of the Development Plan. The first stage is to review the SFRA for the 2015-2021 plan and make updates based on new datasets and updated land use zoning.

Historical records and recent events demonstrate that Ballinasloe has a history of flooding and confirms that a proportion of zoned lands are at flood risk. The Ballinasloe Flood Relief Scheme has commenced but options and delivery of the scheme is still unlikely to occur within the timeframe of the LAP and so the SFRA must protect lands for infrastructure and also ensure that development within Flood Zones A/B is sustainably managed.

The second stage and the main purpose of this SFRA report is to appraise the adequacy of existing information, to prepare a Flood Zone map, based on available data, and to highlight potential development areas that require application of the Justification Test and/or more detailed assessment on a site specific level. The SFRA also provides guidelines for development within areas at potential risk of flooding, and specifically looks at flood risk and the potential for development within a number of key sites in Ballinasloe.

Section 2 of this report provides an introduction to the study area and Section 3 discusses the concepts of flooding, Flood Zones and flood risk as they are incorporated into the Planning System and Flood Risk Management.

In Section 4 the available data related to flooding is summarised and appraised and outlines the sources of flooding to be considered, based on the review of available data. This section also considers the flood management assets that are in place, including the various flood relief scheme which have been constructed, or are underway. Section 5 summarises the key sources of flooding.

Following this, Section 6 outlines the flood risk management policy and Section 7 provides guidance and suggested approaches to managing flood risk to development; the contents of this section will be of particular use in informing the policies and objectives within the Development Plan.

Section 8 contains the review of land use zoning objectives across the settlement it also summarises the application of the Justification Test to which specific responses are included in the Appendix.

2 Ballinasloe Study Area

2.1 Introduction

The plan area comprises the full extent of Ballinasloe and is located in the Suck catchment which is within the Upper Shannon River Catchment. The convergence of the Bunowen River with the River Suck is located to the north of the town, to the east lies the border between Galway and Roscommon and to the south lies the M6 motorway. Lands within the LAP contain a mix of agricultural, residential, and commercial lands.

2.2 Watercourses

The primary watercourse in the Ballinasloe area is the River Suck which has a catchment area upstream of Ballinasloe of approximately 1350km^2. The River Suck rises at the border of Mayo and Roscommon where it flows in a south\south easterly direction for 133kms to its outfall where it drains to the Shannon 1km south of Shannonbridge, Co. Offaly.

The River Suck flows through Ballinasloe along the Galway\Roscommon border with the east of the town located in Roscommon and the west in Galway. To the east of the Loughs, where the bulk of the catchment lies, the land is low-lying with moderate rainfall and karst limestone geology. The smaller tributaries flowing into the Loughs from the west are much steeper, draining impermeable mountainous catchments with high rainfall.

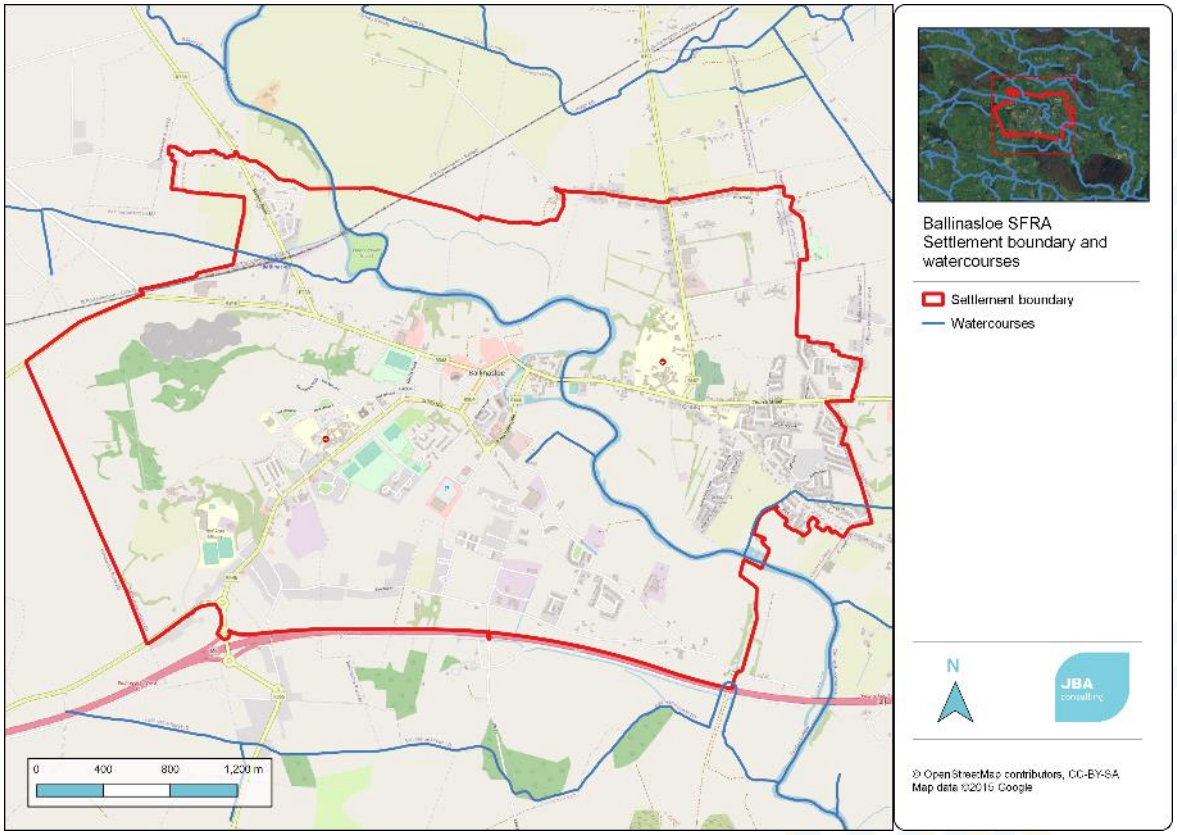


Figure 2-1: Ballinasloe settlement and rivers

2.3 Current Planning Policy

2.3.1 Ireland 2040 – National Planning Framework

A Strategic Flood Risk Assessment of the National Policy Objectives (NPO) within the Ireland 2040 – National Planning Framework was undertaken with the aim of ensuring that flood risk is a key consideration in delivering the proposed strategic sustainable land-use planning decisions. It sets out how all levels of the planning process, from national level strategic assessments to individual planning applications, should follow the sequential approach set out in the 2009 Guidelines on Planning and Flood Risk Management.

The NPF recognises that it is not always possible to avoid developing in flood risk areas due to spatial, economic, environmental and physical constraints. Development should be encouraged to continue, and in flood risk areas should follow the sequential approach and application of Justification Test set out in the Department's Guidelines on the Planning System and Flood Risk Management. These guidelines will facilitate the integration of flood risk and land risk planning in the Eastern and Midland region, at all tiers of the planning hierarchy from national level through regional, city/county and local plans, masterplans and individual planning applications.

2.3.2 Regional Spatial & Economic Strategy (RSES)

The main purpose of the Regional Spatial and Economic Strategy (RSES) is to support the implementation of the NPF and wider Project Ireland 2040 aspirations. The RSES also supports the economic policies and objectives of the Government by providing a detailed strategic planning and economic framework for the development of the North-West Region. As Galway forms part of the North-West Region, the plan must comply with the provisions of the RSES. The RSES provides a framework for the development of the region up to 2032. It focuses on the delivery of housing, job creation, infrastructure, community facilities and ensuring that the region remains attractive for investment.

Ballinasloe is identified as a key county town which provides an anchor for employment in east Galway and provides a valuable commuter service into Galway City and the wider metropolitan area. In terms of tourism it is also defined as a key destination town.

Of relevance to the SFRA is the overarching policy of ensuring a balance of development in the town centre of Ballinasloe and providing for compact growth and brownfield development, revitalising Dunlo Street, Market Square, Society Street and Main Street, and to reduce vacancies and support the vitality and vibrancy of these core shopping streets/side streets and the town centre. Since a proportion of the core town centre is at risk of flooding this presents a challenge when managing flood risk and development. There is also the backdrop of the Ballinasloe Flood Relief Scheme, which is underway, but is unlikely to protect existing development until 2025 at the earliest. As such a precautionary approach has been undertaken.

2.3.3 The Galway County Development Plan 2022-2028

The current Galway County Development Plan covers the period 2022-2028. The plan sets out compliance with the National Planning Framework and the Regional Spatial and Economic Strategies. As part of the Galway County Development Plan 2022-2028 a Strategic Flood Risk Assessment was undertaken in accordance with the Planning System and Flood Risk Management Guidelines for Planning Authorities (2009). The purpose of the SFRA is to identify flooding or surface water management issues related to the County to inform strategic land use planning decisions.

The Galway County Development Plan 2022-2028 considered flood risk in reference to people, business, infrastructure, and the environment at risk of flooding. The GCDP proposed to minimize the risk of flooding through the identification and management of existing and particularly potential future flood risks. The SFRA proposed this be completed by following the sequential approach and application of the Justification Test set out in the 2009 Guidelines on Planning and Flood Risk Management (DoEHLG) throughout the planning process.

3 The Planning System and Flood Risk Management

3.1 Introduction

Prior to discussing the management of flood risk, it is helpful to understand what is meant by the term. It is also important to define the components of flood risk in order to apply the principles of the Planning System and Flood Risk Management in a consistent manner.

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

This Section will firstly outline the definitions of flood risk and the Flood Zones used as a planning tool; a discussion of the principles of the planning guidelines and the management of flood risk in the planning system will follow.

3.2 Definition of Flood Risk

Flood risk is generally accepted to be a combination of the likelihood (or probability) of flooding and the potential consequences arising. Flood risk can be expressed in terms of the following relationship:

Flood Risk = Probability of Flooding x Consequences of Flooding

The assessment of flood risk requires an understanding of the sources, the flow path of floodwater and the people and property that can be affected. The source - pathway - receptor model, shown below in Figure 3-1, illustrates this and is a widely used environmental model to assess and inform the management of risk.

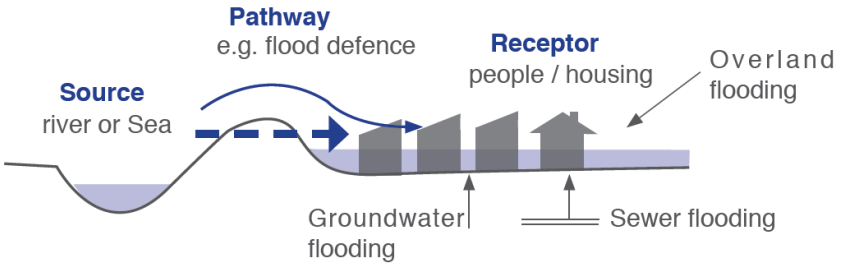


Figure 3-1: Source Pathway Receptor Model

Source: Figure A1 The Planning System and Flood Risk Management Guidelines Technical Appendices

Principal sources of flooding are rainfall or higher than normal sea levels while the most common pathways are rivers, drains, sewers, overland flow and river and coastal floodplains and their defence assets. Receptors can include people, their property and the environment. All three elements must be present for flood risk to arise. Mitigation measures, such as defences or flood resilient construction, have little or no effect on sources of flooding but they can block or impede pathways or remove receptors.

The planning process is primarily concerned with the location of receptors, taking appropriate account of potential sources and pathways that might put those receptors at risk.

3.3 Likelihood of Flooding

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

Return period is often misunderstood to be the period between large flood events rather than an average recurrence interval. Annual exceedance probability is the inverse of return period as shown in Table 3-1.

Table 3-1: Probability of Flooding

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

Considered over the lifetime of development, an apparently low-frequency or rare flood has a significant probability of occurring. For example:

- A 1% flood has a 22% (1 in 5) chance of occurring at least once in a 25-year period - the period of a typical residential mortgage;
- And a 53% (1 in 2) chance of occurring in a 75-year period - a typical human lifetime.

3.4 Consequences of Flooding

Consequences of flooding depend on the hazards caused by flooding (depth of water, speed of flow, rate of onset, duration, wave-action effects, water quality) and the vulnerability of receptors (type of development, nature, e.g. age-structure, of the population, presence and reliability of mitigation measures etc).

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

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

3.5 Definition of Flood Zones

In the Planning System and Flood Risk Management guidelines, Flood Zones are used to indicate the likelihood of a flood occurring. These Zones indicate a high, moderate or low probability of flooding from fluvial or tidal sources and are defined below in Table 3-2.

It is important to note that the definition of the Flood Zones is based on an undefended scenario and does not take into account the presence of flood protection structures such as flood walls or embankments. This is to allow for

the fact that there is a residual risk of flooding behind the defences due to overtopping or breach and that there may be no guarantee that the defences will be maintained in perpetuity.

It is also important to note that the Flood Zones indicate flooding from fluvial and tidal sources and do not take other sources, such as groundwater or pluvial, into account, so an assessment of risk arising from such sources should also be made.

Table 3-2: Definition of Flood Zones

Zone	Description
Zone A High probability of flooding.	This zone defines areas with the highest risk of flooding from rivers (i.e. more than 1% probability or more than 1 in 100) and the coast (i.e. more than 0.5% probability or more than 1 in 200).
Zone B Moderate probability of flooding.	This zone defines areas with a moderate risk of flooding from rivers (i.e. 0.1% to 1% probability or between 1 in 100 and 1 in 1000) and the coast (i.e. 0.1% to 0.5% probability or between 1 in 200 and 1 in 1000).
Zone C Low probability of flooding.	This zone defines areas with a low risk of flooding from rivers and the coast (i.e. less than 0.1% probability or less than 1 in 1000).

3.6 Objectives and Principles of the Planning Guidelines

The Planning System and Flood Risk Management Guidelines describe good flood risk practice in planning and development management. Planning authorities are directed to have regard to the guidelines in the preparation of Development Plans and Local Area Plans, and for development control purposes.

The objective of the Planning System and Flood Risk Management Guidelines is to integrate flood risk management into the planning process, thereby assisting in the delivery of sustainable development. For this to be achieved, flood risk must be assessed as early as possible in the planning process. Paragraph 1.6 of the Guidelines states that the core objectives are to:

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

The guidelines aim to facilitate 'the transparent consideration of flood risk at all levels of the planning process, ensuring a consistency of approach throughout the country.' SFRAs therefore become a key evidence base in meeting these objectives.

The 'Planning System and Flood Risk Management' works on a number of key principles, including:

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

3.7 The Sequential Approach & Justification Test

Each stage of the Flood Risk Assessment (FRA) process aims to adopt a sequential approach to management of flood risk in the planning process.

Where possible, development in areas identified as being at flood risk should be avoided; this may necessitate de-zoning lands within the development plan. If de-zoning is not possible, then rezoning from a higher vulnerability land use, such as residential, to a less vulnerable use, such as open space may be required.

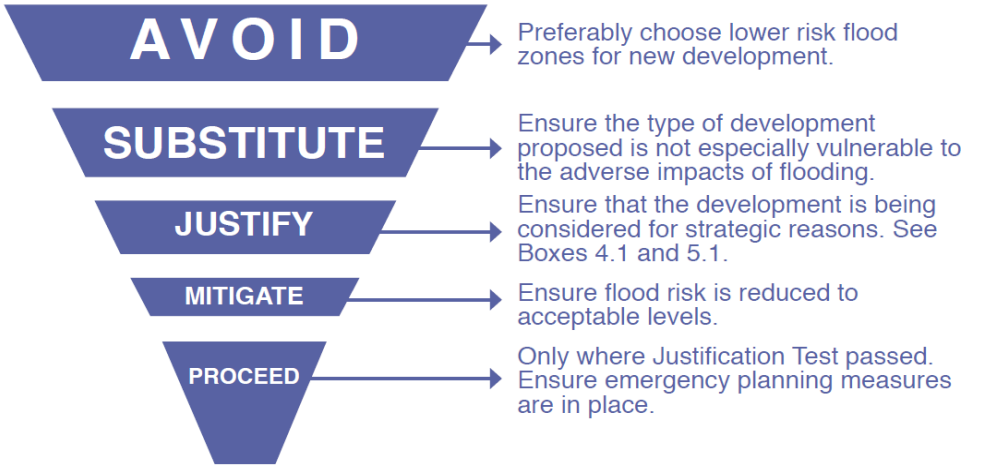


Figure 3-2: Sequential Approach Principles in Flood Risk Management

Source: The Planning System and Flood Risk Management (Figure 3.1)

Where rezoning is not possible, exceptions to the development restrictions are provided for through the application of the Justification Test. Many towns have central areas that are affected by flood risk and have been targeted for growth. To allow the sustainable and compact development of these urban centres, development in areas of flood risk may be considered necessary. For development in such areas to be allowed, the Justification Test must be passed.

The Justification Test has been designed to rigorously assess the appropriateness, or otherwise, of such developments. The test is comprised of two processes; the Plan-making Justification Test, and the Development Management Justification Test. The latter is used at the planning application stage where it is intended to develop land that is at moderate or high risk of flooding for uses or development vulnerable to flooding that would generally be considered inappropriate for that land.

Table 3-3 shows which types of development, based on vulnerability to flood risk, are appropriate land uses for each of the Flood Zones. The aim of the SFRA is to guide

development zonings to those which are 'appropriate' and thereby avoid the need to apply the Justification Test.

Table 3-3: Matrix of Vulnerability versus Flood Zone

	Flood Zone A High Probability	Flood Zone B Moderate Probability	Flood Zone C Low Probability
Highly Vulnerable Development (Including essential infrastructure)	**Justification Test**	**Justification Test**	Appropriate
Less Vulnerable Development	**Justification Test**	Appropriate	Appropriate
Water-Compatible Development	Appropriate	Appropriate	Appropriate

3.8 Scales and Stages of Flood Risk Assessment

Within the hierarchy of regional, strategic and site-specific flood-risk assessments, a tiered approach ensures that the level of information is appropriate to the scale and nature of the flood-risk issues and the location and type of development proposed, avoiding expensive flood modelling and development of mitigation measures where it is not necessary. The stages and scales of flood risk assessment comprise of:

- **Regional Flood Risk Assessment (RFRA)** – a broad overview of flood risk issues across a region to influence spatial allocations for growth in housing and employment and to identify where flood risk management measures may be required at a regional level to support the proposed growth. This should be based on readily derivable information and undertaken to inform the Regional Planning Guidelines.
- **Strategic Flood Risk Assessment (SFRA)** – an assessment of all types of flood risk informing land use planning decisions. This will enable the Planning Authority to allocate appropriate sites for development, whilst identifying opportunities for reducing flood risk. This SFRA will revisit and develop the flood risk identification undertaken in the RFRA and give consideration to a range of potential sources of flooding. An initial flood risk assessment, based on the identification of Flood Zones, will also be carried out for those areas zoned for development. Where the initial flood risk assessment highlights the potential for a significant level of flood risk, or there is conflict with the proposed vulnerability of development, then a site-specific FRA will be recommended, which will necessitate a detailed flood risk assessment.
- **Site Specific Flood Risk Assessment (FRA)** – site or project specific flood risk assessment to consider all types of flood risk associated with the site and propose appropriate site management and mitigation measures to reduce flood risk to and from the site to an acceptable level. If the previous tiers of study have been undertaken to appropriate levels of detail, it is highly likely that the site-specific FRA will require detailed channel and site survey, and hydraulic modelling.

4 Data Collection and Review

This section reviews the data collection and the flood history for the settlements so that any additional information on flooding can be included within this SFRA. It will confirm the extent of extreme flooding (through the Flood Zone mapping) and key sources of flood risk.

Table 4-1: Available Flood Data for Flood Zone Development

Description	Coverage	Robustness	Comment on usefulness
Shannon CFRAM Flood Mapping	Covers the river Suck and tributaries	High AFA status	Detailed 1D/2D CFRAM HPW model and is useful. Site verified by walkover and consultation with local authority. In general, CFRAM provides all information needed to apply the Justification Test (JT) for Plan Making under the SFRA.
OPW PFRA flood extent maps	Covers the river Suck and tributaries.	Moderate	CFRAM mapping supersedes all fluvial PFRA mapping. Has been used for sensibility checking only.
Historical Flood Event Outlines	Coverage of most of LAP area from 2009 flood event	Moderate	Used indirectly to validate flood zones. Useful background information for flooding in specific areas of the settlement.

Table 4-2 Other Available Data

Description	Coverage	Robustness	Comment on usefulness
GSi Groundwater and Surface Water flood information	Full Study Area	Moderate	Provides both historic and predictive flood extents for groundwater and historic surface water flooding.
Alluvial Soils Maps	Full Study Area	Low	Used to provide indication of risk in areas with no other mapping available.
Groundwater vulnerability maps	Broadscale, County wide	Moderate	Initial assessment of groundwater vulnerability. Provides a screening tool for use in FRA.
Site Walkover	Specific areas of interest	Moderate	Helpful for assessing flood risk in areas where mapping is unavailable. Used to verify existing mapping and
Historic Flood Records including photos, aerial photos and reports.	Coverage of most of LAP area from 2009 flood event and spot coverage for other events	Various	Highly useful oversight of historic flooding issues provided by Local Authority.
LiDAR height model	Ballinasloe area	High	Aerial survey is used to appraise the topography and identify low spots, floodplain and areas potentially susceptible to flooding.

As set out in the RSES Regional Flood Risk Appraisal Report, and under the Planning Guidelines, the Flood Zone mapping for Ballinasloe is principally derived from the CFRAM where possible. However, one watercourse is not covered by the CFRAM and in this case a range of other datasets, as shown in Table 4-1 and Table 4-2, were used as supplementary information to inform this SFRA.

All sources of available flood mapping were reviewed and the best available dataset is used.

Specific guidance is provided for each area of Ballinasloe based on the data review and the site visit is used to confirm the most appropriate dataset and flood extents to define the Flood Zones. During the site visit (attended by Local Authority Engineers and Planners) the flood mapping was appraised on site by an experienced flood risk manager and professional opinion and judgement has been used to develop the recommendations within the Settlement Review of Section 8.

The review of the suite of flood risk data has been developed as a spatial planning tool to guide LCC in making land-use zoning and development management decisions. The data sets have been deemed appropriate for the planning decisions being made at this stage of the plan making process and where flood risk is identified the following approach has been undertaken;

- Application of the Justification Test and/or;
- Further detailed analysis, or;
- Rezoning to a less vulnerable use, or;
- Further assessment at Development Management stage in limited circumstances where it has been determined that development should be possible in principle, taking into account a site specific opinion.

Where CFRAM modelling has been carried out (on the River Suck), flood levels are available at selected node points along the watercourse. Once an appropriate level of validation has been undertaken as part of the site-specific FRA, these flood levels may be used to form the basis of the development design.

4.1 Historic Flooding

A number of areas in Ballinasloe have been affected by flooding historically. Several sources were consulted to identify previous flood events including the OPW floodinfo.ie website, newspaper articles and previous flood studies. Floodinfo.ie provides information on historical flood events across the country and formed the basis of the Regional Flood Risk Assessment. Information is provided in the form of reports and newspaper articles which generally relate to rare and extreme events.

Table 4-3 Flood History

Location	Start Date	Description
Derrymullan	Recurring	Low lying areas flooded after high rainfall.
Portnick Drive, Ballinasloe	Recurring	Due to the River Suck bursting its bank after high rainfall.
Ballinasloe	December 1954	These events are likely to have been caused by high runoff from the Suck catchment, possibly exacerbated by high water levels on the Shannon causing a backwater effect on the Suck.
Station Road, Ballinasloe	Jan 1965	Station Road area affected by flooding. Area is prone to flooding caused by surface runoff and tide. Flood water from the River Suck crept up on the grounds of a church at Ballinasloe.
Unnamed housing estate, Ballinasloe	Feb 1990	Housing estate in Ballinasloe flooded due to heavy rain and high winds.
Derrymullan inc roads	17/02/1995	12 houses flooded and others evacuated at Derrymullan. Roads from Derrymullan and Killure to Ahascragh flooded.
Ballinasloe	28/12/1999	Houses in Derrymullan and Ballinasloe flooded due to high winds and heavy rains.
Ballinasloe	01/02/2002	Extensive flooding across Galway and Ballinasloe due to heavy rainfall.
Ballinasloe inc roads	08/01/2005	Houses in Derrymullan and Ballinasloe at risk of flooding. R358 flooded.
Ballinasloe inc roads	December 2006	Flooding affected Ballagill Bridge to concrete work, suck Bunowen area, Creggaun, Derymullan & Rail Bridge Ballinasloe area. R358 flooded.
Ballinasloe	18/11/2009	Residential & commercial properties affected by flooding. In the Marina, Willow Park area, Derrymullan and Ballinasloe town. More than 90 properties flooded (PFRA).
Ballinasloe	Winter 2015\2016	Significant flooding in Ballinasloe occurred in winter 2015/2016 with County Galway experiencing more than 240% Long Term Average rainfall amounts for December. The flooding was a result of the 6 storms affecting Ireland in November and December: Abigail on 12 November, Barney on 17 November, Clodagh on 29 November, Desmond on 4/5 December, Eva on 23 December and Frank on 29/30 December. The most significant of these for flooding were Abigail, Desmond and Frank.

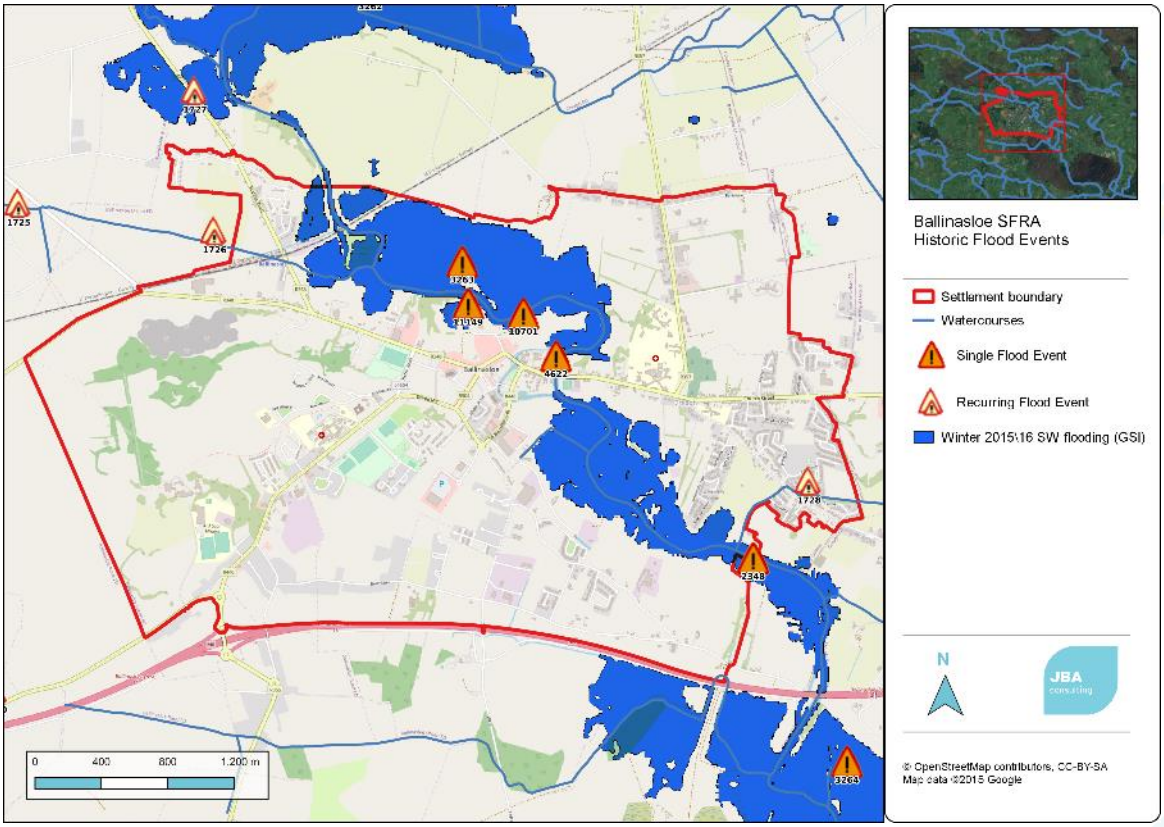


Figure 4-1 Historic flood events Ballinasloe

4.2 Site Walkover

As part of the SFRA process a site walkover and consultation was undertaken Ballinasloe by an experience Flood Risk Manager alongside the Local Authority Engineer. The site walkover took place on 28/01/2021 and aimed to assess risks presented by potentially unmapped watercourses, to verify CFRAM mapping, and to verify the previous site walkover and ground truthing exercise undertaken by ARUP[2] on the 23rd February 2015 for the previous SFRA.

The walkover took place at specific locations throughout Ballinasloe based on CFRAM mapping and the previous walkover. During the walkover an unmapped watercourse and its associated structures were identified. The CFRAM mapping and previous SFRA were also found to be in agreement with observations made during the walkover.

4.3 Derrymullan Scheme

Following the November 2009 flood event Galway County Council and the OPW identified a number of schemes that could be implemented to deal with flood risk in Ballinasloe. One such scheme was the Derrymullan Flood Defence Wall which was advanced as a matter of urgency. The Derrymullan area of Ballinasloe is a primarily residential area, located on the banks of the River Suck and north of the Ballinasloe Railway Station. There have been incidents of recurring flooding recorded in this area since the 1990s, with the most extreme event occurring in 2009. Following the 2009 event, a study commissioned by Flood Alleviation Ballinasloe and carried out by Hydro

[2] ARUP (2015). *Stage 2 Strategic Flood Risk Assessment of the Ballinasloe Local Area Plan 2015-2021* *http://www.galway.ie/en/media/Stage%202%20SFRA%20Ballinasloe.pdf*

Environmental Ltd confirmed that a 1 in 10 year event would cause extensive flooding in the area and the proposed solution was the Derrymullan Flood Wall.

Galway County Council appointed Atkins as consultants to assist with the Contract Documentation and Administration. Outline design was delivered in June 2010 and Part VIII planning was passed at the Town Council Meeting in July 2010. Works commenced in November 2010 and were carried out over the 2010/2011 winter and are now complete. The flood protection scheme involved the construction of a total length of approximately 1.19km of flood defence structures, consisting primarily of walls and embankments, to surround a residential area of approximately 12ha. This flood wall now protects 130 houses, 4 commercial units and a community facility in Ashfield Drive, Willow Park and an Doire Beg, and the R358 road from flooding.

The level of the flood defences has been provided by referencing previous flood studies and flood levels recorded during the flooding of November 2009 which has been estimated at greater than a 1 in 800 year flood event. The max flood level recorded during the Nov'09 flood event was 39.33m OD. To allow for climate change and safety factor the flood defences include a freeboard of 300mm at hard installations (e.g. structural walls/piles) and a free board of 500mm at earth embankment. The wall detail has been constructed to a top level of 39.650m OD and the bund to a level of 39.85m OD. This provides protection during a 1 in 100 year flood event with adequate free board.

Figure 4-2 Derrymullan Flood Wall

4.4 PFRA & NIFM

The Preliminary Flood Risk Assessment (PFRA) is a national screening exercise that was undertaken to identify areas at potential flood risk. The PFRA is a requirement of the EU Floods Directive and the publication of this work has led to, and has informed, more detailed assessment, which is being undertaken as part of the Catchment Flood Risk

Assessment and Management (CFRAM) studies. The PFRA study considered flooding from several sources, including fluvial, tidal, pluvial and groundwater, and resulted in a suite of broadscale flood maps.

The PFRA fluvial data has now been replaced by NIFM fluvial flood extents, however this is only the case where CFRAM flood outlines are not provided and where the catchment is greater than 5km^2. There are no NIFM watercourses within the settlement boundary of Ballinasloe.

4.5 GSI Groundwater Flood

The winter of 2015/2016 saw the most extensive groundwater flooding ever witnessed in Ireland. The lack of data on groundwater flooding and fit-for-purpose flood hazard maps were identified as serious impediments to managing groundwater flood risk in vulnerable communities. Geological Survey Ireland - in collaboration with Trinity College Dublin and Institute of Technology Carlow - initiated the groundwater flood project GWFlood to address these deficits. Data available as a result of the project include national-scale flood maps for both historic and predictive groundwater flooding.

The historic groundwater flood map is primarily based on the winter 2015/2016 flood event, which in most areas represented the largest groundwater flood event on record. The map was produced based on the SAR imagery of the 2015/2016 event as well as any available supplementary evidence.

The predictive groundwater flood map presents the probabilistic flood extents for locations of recurrent karst groundwater flooding. It consists of a series of stacked polygons at each site representing the flood extent for specific AEP's mapping floods that are expected to occur every 10, 100 and 1000 years (AEP of 0.1, 0.01, and 0.001 respectively). The map is focussed primarily (but not entirely) on flooding at seasonally inundated wetlands known as turloughs. Sites were chosen for inclusion in the predictive map based on existing turlough databases as well as manual interpretation of SAR imagery.

The mapping process tied together the observed and SAR-derived hydrograph data, hydrological modelling, stochastic weather generation and extreme value analysis to generate predictive groundwater flood maps for over 400 qualifying sites. It should be noted that not all turloughs are included in the predictive map as some sites could not be successfully monitored with SAR and/or modelled.

The predictive mapping is displayed over page in Figure 4-3 and Figure 4-4 and confirms that there is no predicted groundwater flood groundwater flooding within the LAP boundary.

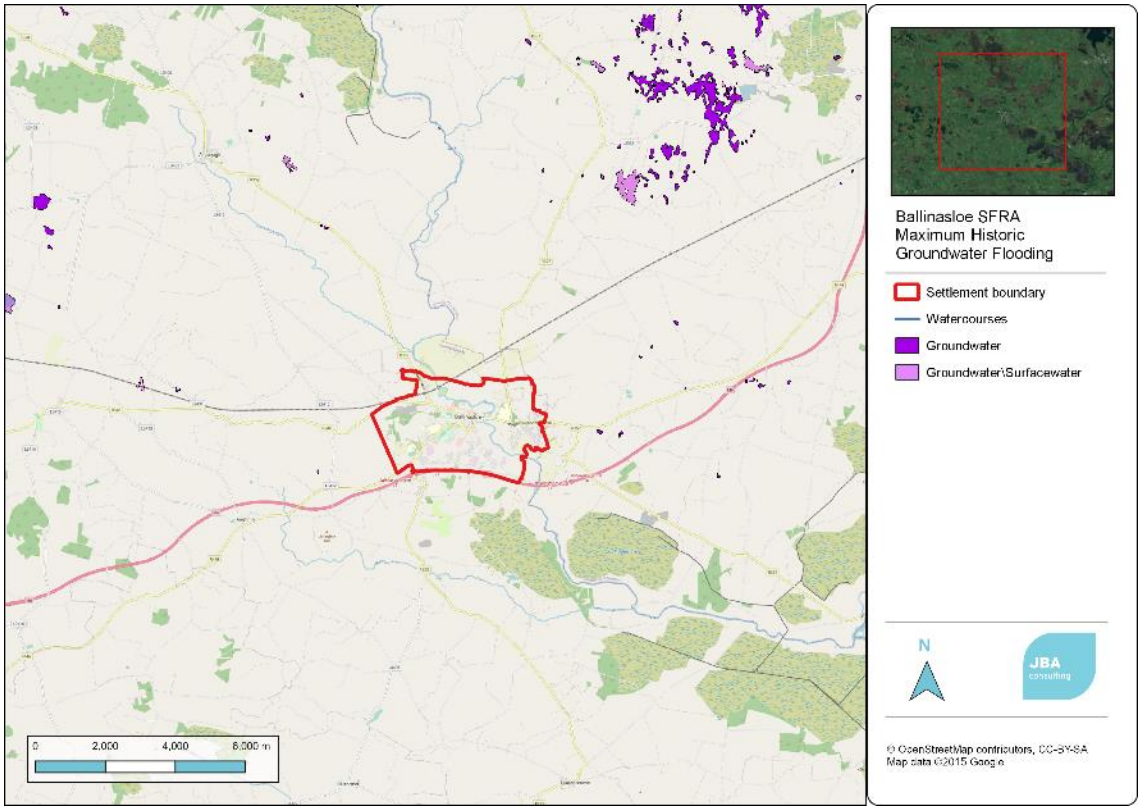


Figure 4-3 Maximum Historic Groundwater Flooding

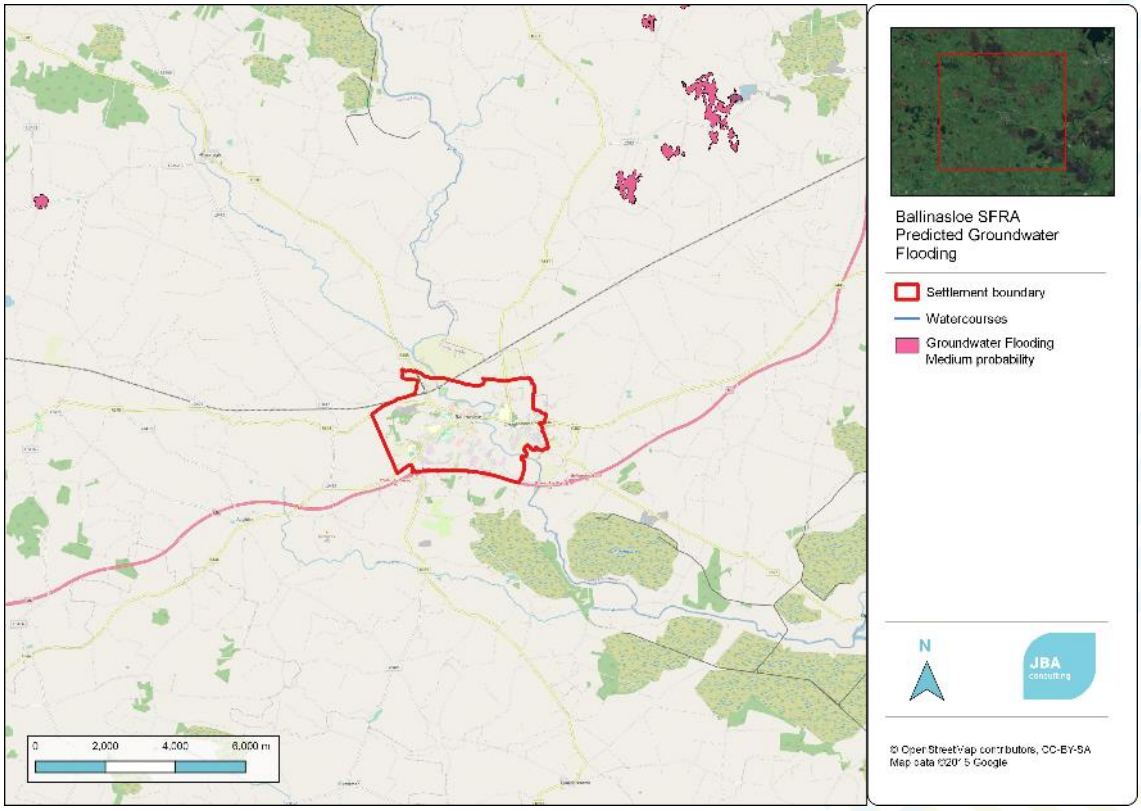


Figure 4-4 Groundwater Flooding Medium Probability

4.6 GSI Surface Water Flooding

Geological Survey Ireland - in collaboration with Trinity College Dublin and Institute of Technology Carlow - initiated the groundwater flood project GWFlood to address deficits in groundwater flooding and fit-for-purpose flood hazard maps.

In addition to the historic groundwater flood map, the flood mapping methodology was also adapted to produce a surface water flood map of the 2015/2016 flood event. This flood map encompasses fluvial and pluvial flooding in non-urban areas and has been developed as a separate product. The historic surface water flood map is displayed within Figure 4-1 and was reviewed on site during the walkover in January 2021.

4.7 CFRAM

In 2011 the OPW commenced appointment of consultants to carry out a more detailed flood risk assessment on key flood risk areas. This work was undertaken under the CFRAM programme across seven river basin districts in Ireland. The Shannon RBD includes the entire catchment of the River Shannon and its estuary, covering some 17,800km2 and 20% of the island of Ireland. The RBD covers parts of 17 counties: Limerick, Clare, Tipperary, Offaly, Westmeath, Longford, Roscommon, Kerry, Galway, Leitrim, Cavan, Sligo, Mayo, Cork, Laois, Meath and Fermanagh.

The initial Flood Risk Review (FRR) stage of the of the Shannon CFRAM included a site-based review of the PFRA flood outlines at a number of settlements. Several communities were identified through this process as being at potentially significant flood risk in the Shannon Upper & Lower River Basin, which included Ballinasloe. Following this review, any sites recommended as an Area for Further Assessment (AFA) were included in the subsequent detailed assessment stage of each CFRAM study.

A set of flood maps, indicating the areas prone to flooding, has been developed and published for each of the communities. The Plan builds on and supplements the national programme of flood protection works completed previously, that are under design and construction at this time or that have been set out through other projects or plans, and the ongoing maintenance of existing drainage and flood relief schemes.

Climate change is likely to have a considerable impact on flood risk in Ireland, such as through rising mean sea levels, increased wave action and the potential increases in winter rainfall and intense rainfall events. Land use change, for example, through new housing and other developments, can also increase potential future flood risk. In order to assess this risk, the Shannon CFRAM study also included detailed assessments of flooding and impacts for potential future climate change scenarios.

Refer to Section 6.2 for CFRAM measures. The 1% AEP and 1% AEP + climate change outlines are displayed over page in Figure 4-5. Results confirm a generally moderate impact of climate change across the settlement, except for the area to the south of the M6. The OPW has confirmed that there is an error with the current scenario CFRAM mapping and whilst the current scenario does not extend north of the M6 there is a significant area (outside of the LAP boundary) to the south of the M6 that should be included. The main area sensitive to impacts of climate change is therefore the margin of flooding to the north of the M6.

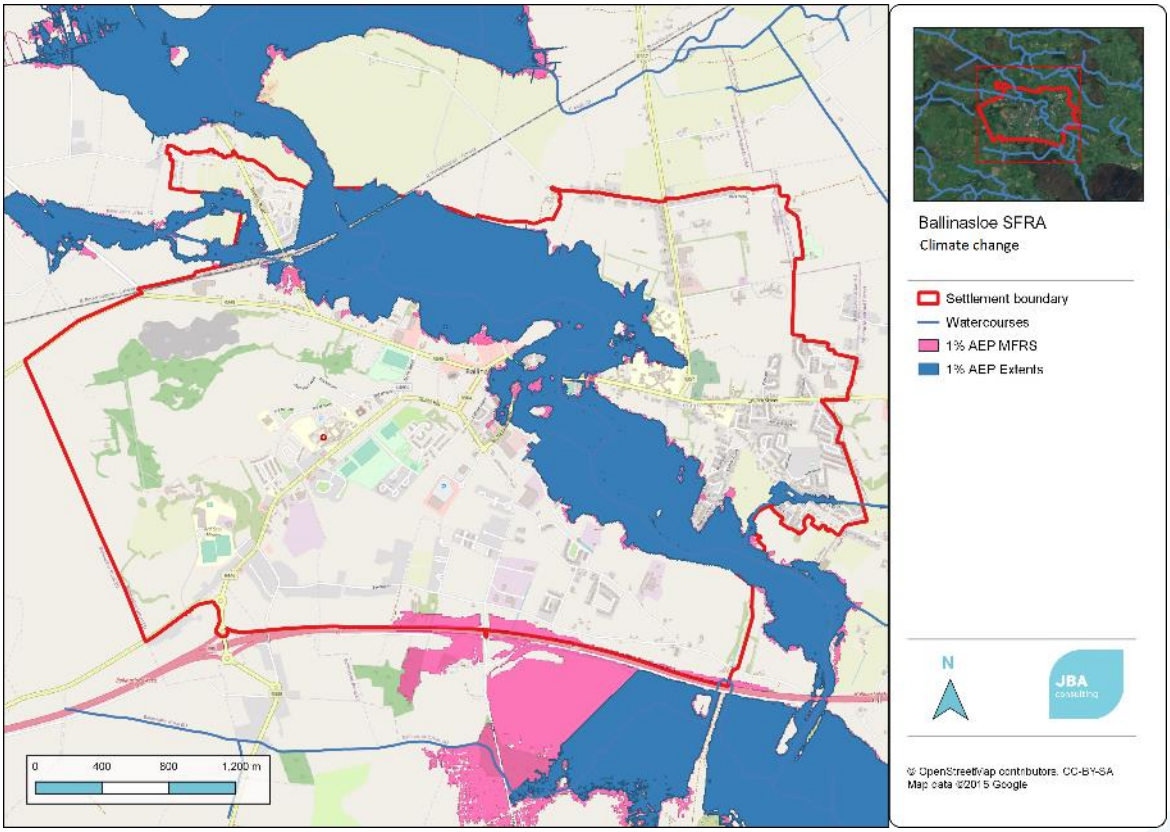


Figure 4-5 CFRAM Current Scenario and Climate Change 1% AEP outlines

4.8 Ballinasloe FRS

The Ballinasloe Flood Relief Scheme was proposed as a response to flood risk in the town from the Suck and Deerpark Rivers and other local tributaries. In recent times, significant flooding occurred in November 2009 and during winter 2015/2016. The scheme objective is to provide protection to all domestic and commercial properties currently at risk of flooding from the River Suck and its tributaries within the scheme area, up to the design standard of protection including an allowance for climate change adaptation. The first Public Consultation Day was held on Thursday 5th March 2020 in the Dunlo Room of the Shearwater Hotel, Ballinasloe. It is envisioned that construction of the scheme should be completed in 2025, however this is subject to revision. The proposed scheme is expected to provide protection against the 100-year flood (1% Annual Exceedance Probability).

The proposed Ballinasloe Flood Relief Scheme may include, construction of new flood defence walls, flood defence embankments and a demountable flood gate; Construction of two new flood alleviation arch culverts at Ballinasloe East Bridge. Regrading of the riverbank upstream and downstream of the bridge to maximize efficiency of the flood alleviation culverts; Construction of two Lock Gates across the Canal and a sluice gate across the channel flowing into the marina; Upgrade existing culvert; Upgrade the existing Kilclooney Road Bridge on the River Deerpark; Regrading of the riverbed upstream and downstream of Kilclooney Road Bridge to maximize efficiency; Maintain all existing defences.

5 Sources of Flooding

This SFRA has reviewed flood risk from fluvial, pluvial and groundwater sources. Flooding events have become more pronounced in Ireland, and County Galway, in recent years. Climate change risks also need to be considered at a strategic and site-specific scale. Climate change is discussed in Section 4.7 in relation to incorporation of climate change into the SFRA. A comment on the likely impacts of climate change, on a settlement basis, has been provided in Section 8.

5.1 Fluvial Flooding

This is the principal source of flood risk to Ballinasloe. Flooding from rivers and streams is associated with the exceedance of channel capacity during times of heavy rainfall resulting in higher flows. The process of flooding from watercourses depends on numerous characteristics associated with the catchment including; geographical location and variation in rainfall, steepness of the channel and surrounding floodplain and infiltration and rate of runoff associated with urban and rural catchments. Generally, there are two main types of catchments; large and relatively flat or small and steep, both giving two very different responses during large rainfall events.

In a large, relatively flat catchment such as the River Suck, flood levels will rise slowly, and natural floodplains may remain flooded for several days or even weeks, acting as the natural regulator of the flow.

The Bunowen and Deer Park Rivers confluence with the River Suck immediately north of Ballinasloe, which then flows through Ballinasloe in a south-easterly direction. River tributaries are also located within the town's boundary.

Many areas in Ballinasloe are relatively low lying and prone to flooding. There are records of 13 flood events in the vicinity of the town, including events in 1954, 1995, 1999, 2002, 2005, 2009 and winter 2015/16. The River Suck is the primary cause of flooding in Ballinasloe; with most events attributed to fluvial sources including the Suck and Deerpark Rivers as well as the smaller tributaries and drains.

Flood risk relating to specific areas of Ballinasloe is discussed in Section 8 and has been used to inform the zoning objectives for the Development Plan.

5.2 Drainage Districts

The River Suck Drainage District includes the River Suck and most of its tributaries within the settlement boundary. Drainage districts were established under the Arterial Drainage Act, 1945, and subsequent Amendment Act, 1995, they include channels/schemes that were undertaken prior to 1945 and are the responsibility of Local Authorities, rather than the OPW (who manage Arterial Drainage Schemes post-1945). The Act deals with the improvement of lands by drainage and preventing or substantially reducing the flooding of lands. The Act set up the process of Arterial Drainage Schemes and provides for the maintenance of these works. It also implements several drainage and flood reduction related measures such as approval procedures for bridges and weirs and iterates reporting requirements for Drainage Districts.

5.3 Flooding from Defence Overtopping or Breach

The Ballinasloe FRS is in its early stages and flood protection measures are yet to be determined. The Derrymullan area is subject to an existing flood relief scheme which includes flood walls/embankments that are potentially liable to overtopping/breach. Derrymullan clearly benefits from the construction of defences, and new defences could be considered as one means of facilitating the redevelopment of flood prone areas of the town. However, it is against sustainability objectives, and the general approach of

the OPW, to construct defences with the intention of releasing greenfield land for development. It is also not appropriate to consider the benefits of schemes which have not been constructed or which may only be at pre-feasibility or design stage. This is the case for the wider Ballinasloe FRS, future undeveloped/underutilised/brownfield lands in the core of the settlement (Town Centre) that may be subject to future defence protection could potentially pass the Justification Test under a future review of the Development Plan. However, until such a time as the defences are in place the SFRA and Policy within the plan do not permit new highly vulnerable development within Flood Zone A/B and less vulnerable development within Flood Zone A. Existing development within Flood Zone A/B is also carefully managed to avoid significant redevelopment of highly vulnerable use in Flood Zone A/B.

Residual risk is the risk that remains after measures to control flood risk have been carried out. Residual risk can arise from overtopping of flood defences and / or from the breach from structural failure of the defences

The concept of residual risk is explained in 'The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009' as follows:

"*Although flood defences may reduce the risk of flooding, they cannot eliminate it. A flood defence may be overtopped by a flood that is higher than that for which it was designed or be breached and allow flood water to rapidly inundate the area behind the defence. In addition, no guarantee can be given that flood defence will be maintained in perpetuity. As well as the actual risk, which may be reduced as a result of the flood defence, there will remain a residual risk that must be considered in determining the appropriateness of uses and development. For these reasons, flooding will still remain a consideration behind flood defences and the flood zones deliberately ignore the presence of flood defences*."

Overtopping of flood defences will occur during flood events greater than the design level of the defences. Overtopping is likely to cause lower levels of inundation of the floodplain than if defences had not been built, but the impact will depend on the duration, severity and volume of floodwater. However, and more critically, overtopping can destabilise a flood defence, cause erosion and make it more susceptible to breach or fail. Recovery time and drainage of overtopping quantities should also be considered. Overtopping may become more likely in future years due to the impacts of climate change and it is important that any assessment of defences includes an appraisal of climate change risks.

Breach or structural failure of flood defences is hard to predict and is largely related to the structural condition and type of flood defence. 'Hard' flood defences such as solid concrete walls are less likely to breach than 'soft' defence such as earth embankments. Breach will usually result in sudden flooding with little or no warning and presents a significant hazard and danger to life. There is likely to be deeper flooding in the event of a breach than due to overtopping.

Whilst it is important that residual risks are recognised and appropriate management measures put in place, it is also important to acknowledge the benefits that a flood relief scheme provides to those living and working behind it. In this regard, although 'The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009' requires flood zones to be undefended, consideration should be given to the benefit provided by flood defences, but only once the Justification Test has been applied and passed. This has been undertaken for Derrymullan and the test passes on the basis that there is no further highly vulnerable infill development, only extensions, renovations and changes of use.

5.4 Pluvial Flooding

Flooding of land from surface water runoff is usually caused by intense rainfall that may only last a few hours. The resulting water follows natural valley lines, creating flow paths along roads and through and around developments and ponding in low spots, which often coincide with fluvial floodplains. Any areas at risk from fluvial flooding will almost certainly be at risk from surface water flooding.

5.5 Flooding from Drainage Systems

Flooding from artificial drainage systems occurs when flow entering a system, such as an urban storm water drainage system, exceeds its discharge capacity, it becomes blocked or it cannot discharge due to a high-water level in the receiving watercourse.

Flooding in urban areas can also be attributed to sewers. Sewers have a finite capacity which, during certain load conditions, will be exceeded. In addition, design standards vary and changes within the catchment areas draining to the system, in particular planned growth and urban creep, will reduce the level of service provided by the asset. Sewer flooding problems will often be associated with regularly occurring storm events during which sewers and associated infrastructure can become blocked or fail. This problem is exacerbated in areas with under-capacity systems. In the larger events that are less frequent but have a higher consequence, surface water will exceed the sewer system and flow across the surface of the land, often following the same flow paths and ponding in the same areas as overland flow.

Foul sewers and surface water drainage systems are spread extensively across the urban areas with various interconnected systems discharging to treatment works and into local watercourses. The potential for pluvial flooding will be managed by the application of the specific policies on surface water, as displayed in Section 6.

5.6 Groundwater Flooding

Groundwater flooding is caused by the emergence of water originating from underground and is particularly common in karst landscapes. This can emerge from either point or diffuse locations. The occurrence of groundwater flooding is usually very local and unlike flooding from rivers and the sea, does not generally pose a significant risk to life due to the slow rate at which the water level rises. However, groundwater flooding can cause significant damage to property, especially in urban areas and pose further risks to the environment and ground stability. Flood risk relating to groundwater has been screened under Section 5.6 and confirmed that Ballinasloe is not at risk from predicted or historic groundwater flooding.

6 Flood Risk Management Policy

The implementation of the Planning Guidelines throughout the county is achieved through the application of the policies and objectives contained within the GCDP 2022-2028. Chapter 14 *Climate Change, Energy and Renewable Resource* of the (GCDP) sets out the Strategic Aims and key Policy Objectives pertaining to Flood Risk Management in County Galway which includes the Ballinasloe LAP area.

The specific management of risk is discussed for each area of Ballinasloe in Section 8.

6.1 Flood Risk & Surface Water Policy

BKT 40	**Climate Change** To implement, through this Local Area Plan Policy Objectives that support and encourage sustainable compact growth and settlement patterns, integrate land use and transportation, and maximise opportunities through development location, form, layout and design to secure climate resilience and reduce carbon dioxide and greenhouse emissions.
BKT 42	**Constrained Land Use** To facilitate the appropriate management and sustainable use of flood risk within zoning plan areas. This zoning limits new development, while recognising that existing development uses within these zones may require small scale development, as outlined below, over the life of the Local Area Plan, which would contribute towards the compact and sustainable urban development of the town. The underlying zoning or the existing permitted uses are deemed to be acceptable in principle for minor developments to existing buildings (such as small extensions to houses, most changes of use of existing buildings), which are unlikely to raise significant flooding issues, provided they do not obstruct important flow paths, introduce a significant additional number of people into flood risk areas or entail the storage of hazardous substances. Since such applications concern existing buildings or developed areas, the sequential approach cannot be used to locate them in lower-risk areas and the Justification Test will not apply. Development proposals within this zone shall be accompanied by a detailed Flood Risk Assessment, carried out in accordance with The Planning System and Flood Risk Assessment Guidelines and Circular PL 2/2014 (or as updated), which shall assess the risks of flooding associated with the proposed development. Proposals shall only be considered where it is demonstrated to the satisfaction of the Planning Authority that they would not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities, or increase the risk of flooding to other locations. The nature and design of structural and non-structural flood risk management measures required for development in such areas will also be required to be demonstrated, to ensure that flood hazard and risk will not be increased. Measures proposed shall follow best practice in the management of health and safety for users and residents of the development. Specifications for developments in flood vulnerable areas set out in this plan shall be complied with

	as appropriate. (Please refer also to Policy Objective BKT 41).
BKT 43	**Flood Risk Management Guidelines** It is the policy objective of Galway County Council to support, in co-operation with the OPW, the implementation of the EU Flood Risk Directive (2007/60/EC), the Flood Risk Regulations (SI No. 122 of 2010) and the DEHLG/OPW publication The Planning System and Flood Risk Management Guidelines (2009) (and any updated/superseding legislation or policy guidance) and Department Circular PL2/2014 or any updated / superseding version.
BKT 44	**Flood Risk Management and Assessment** It is a Policy Objective of the Council to comply with the requirements of the DoEHLG/OPW The Planning System and Flood Risk Management Guidelines for Planning Authorities and its accompanying Technical Appendices Document 2009 (including any updated/superseding documents). This will include the following: a) Avoid, reduce and/or mitigate, as appropriate in accordance with the Guidelines; b) Development proposals in areas where there is an identified or potential risk of flooding or that could give rise to a risk of flooding elsewhere will be required to carry out a Site-Specific Flood Risk Assessment, and justification test where appropriate, in accordance with the provisions of The Planning System and Flood Risk Management Guidelines 2009 (or any superseding document); Any flood risk assessment should include an assessment of the potential impacts of climate change, such as an increase in the extent or probability of flooding, and any associated measures necessary to address these impacts;
BKT 46	**Principles of Flood Risk Management Guidelines** The Council shall implement the key principles of flood risk management set out in the Flood Risk Management Guidelines as follows: a) Avoid development that will be at risk of flooding or that will increase the flooding risk elsewhere, where possible; b) Substitute less vulnerable uses, where avoidance is not possible; and c) Mitigate and manage the risk, where avoidance and substitution are not possible. Development should only be permitted in areas at risk of flooding when there are no alternative, reasonable sites available in areas at lower risk that also meet the objectives of proper planning and sustainable development. Vulnerable development in areas which have the highest flood risk should be avoided and/or only considered in exceptional circumstances (through a prescribed Justification Test) if adequate land or sites are not available in areas which have lower flood risk.

BKT 47	**Flood Relief Schemes** The Council shall support and co-operate with the Office of Public Works (OPW) in the delivery of the forthcoming Flood Relief Scheme for Ballinasloe. Appropriate measures to accommodate the delivery of the Flood Risk Scheme should be facilitated where possible, in accordance with proper planning and sustainable development.
BKT 48	**Surface Water Drainage and Sustainable Drainage Systems (SuDS)** Maintain and enhance, as appropriate, the existing surface water drainage system in Ballinasloe. Ensure that new developments are adequately serviced with surface water drainage infrastructure and promote the use of Sustainable Drainage Systems in all new developments. Surface water runoff from development sites will be limited to pre-development levels and planning applications for new developments will be required to provide details of surface water drainage and sustainable drainage systems proposals.
BKT 50	**Flood Risk Assessment for Planning Applications and CFRAMS** Protect Flood Zone A and Flood Zone B from inappropriate development and direct developments/land uses into the appropriate Flood Zone in accordance with The Planning System and Flood Risk Management Guidelines for Planning Authorities 2009 (or any superseding document) and the guidance contained in Development Management Standard 69. Site-specific Flood Risk Assessment (FRA) is required for all planning applications in areas at elevated risk of flooding, even for developments appropriate to the particular flood zone. The detail of these site-specific FRAs will depend on the level of risk and scale of development. A detailed site specific FRA should quantify the risks, the effects of selected mitigation and the management of any residual risks. The Council shall have regard to the results of any CFRAM Studies in the assessment of planning applications. Where a development/land use is proposed that is inappropriate within the Flood Zone, then the development proposal will need to be accompanied by a Development Management Justification Test in addition to the site-specific Flood Risk Assessment. In Flood Zone C, where the probability of flooding is low (less than 0.1%, Flood Zone C), site-specific Flood Risk Assessment may be required and the developer should satisfy themselves that the probability of flooding is appropriate to the development being proposed.
BKT 51	**FRA and Climate Change** Flood Risk Assessments in Ballinasloe shall provide information on the implications of climate change with regard to flood risk in relevant locations. The 2009 OPW Draft Guidance on Assessment of Potential Future Scenarios for Flood Risk Management (or any superseding document) shall be consulted with to this effect.
BKT 52	**FRA and Environmental Impact Assessment (EIA)** Flood risk may constitute a significant environmental effect of a development proposal that in certain circumstances may trigger a sub-threshold EIA. FRA should therefore be an integral part of any EIA undertaken for projects within Ballinasloe.

BKT 53	**Inland Fisheries** It is the Council policy objective to consult, where necessary, with Inland Fisheries Ireland, the National Parks and Wildlife Service and other relevant agencies in the construction of flood alleviation measures in Ballinasloe.
BKT 54	**Flood Vulnerable Zones** It is Council policy objective to ensure that applications pertaining to existing developments in flood vulnerable zones provide details of structural and non-structural risk management measures to include, but not be limited to specifications of the following - floor levels, internal layout, flood resilient construction, flood resistant construction, emergency response planning, access and egress during flood events.
BKT 55	**Flood Risk Management** Ensure each flood risk management activity is examined to determine actions required to embed and provide for effective climate change adaptation as set out in the OPW Climate Change Sectoral Adaptation Plan for Flood Risk Management applicable at the time.

6.2 CFRAM Recommendations

Following the publication of the final Flood Risk Management Plans for the CFRAM Study in May 2018 a 10 year €1billion programme of works (for 118 schemes) was announced by the OPW.

The OPW's Shannon Catchment Flood Risk Assessment and Management (CFRAM) Study identified Ballinasloe as an AFA and concluded that a flood relief scheme would be viable and effective for the community. The Shannon CFRAM FRMP identified a number of measures that may be implemented after project-level assessment and planning or Exhibition and confirmation. These included;

- Construction of 530m of new flood defence walls, 5,050m of flood defence embankments and a demountable flood gate;
- Construction of two new 6m wide flood alleviation arch culverts at Ballinasloe East Bridge. The invert level of these culverts is 35.3m;
- Regarding of the riverbank 130m upstream and downstream of the bridge to 35.3m to maximize efficiency of the flood alleviation culverts;
- Construction of two Lock Gates across the Canal and a sluice gate across the channel flowing into the marina from the canal;
- Upgrade existing culvert to a 2.0m dia. Culvert;
- Upgrade the existing Kilclooney Road Bridge on the River Deerpark;
- Regarding of the riverbed upstream and downstream of Kilclooney Road Bridge to maximize efficiency of the upgraded structure;
- Public Awareness, Flood Forecasting will also be required as part of this measure;
- Maintain all existing defences;
- The West and East Atlas channels need to be maintained to ensure their full capacity can be utilised in a flood event.

A graphical representation of the measures is provided in Appendix B.

7 Development Management and Flood Risk

In order to guide both applicants and relevant council staff through the process of planning for and mitigating flood risk, the key features of a range of development scenarios have been identified (relating the Flood Zone, development vulnerability and presence or absence of defences). For each scenario, a number of considerations relating to the suitability of the development are summarised below.

It should be noted that this section of the SFRA begins from the point that all land zoned for development has passed the Justification Test for Development Plans, and therefore passes Part 1 of the Justification Test for Development Management – which states that the land has in the first instance been zoned accordingly in a development plan (that underwent an SFRA). In addition to the general recommendations in the following sections, Section 8 should be reviewed for specific recommendations for individual areas of Ballinasloe, including details of the application of the Justification Test and the specific requirements within each area of the settlement.

In order to determine the appropriate design standards for a development it may be necessary to undertake a site-specific flood risk assessment. This may be a qualitative appraisal of risks, including drainage design. Alternatively, the findings of the CFRAM, or other detailed study, may be drawn upon to inform finished floor levels. In other circumstances a detailed modelling study and flood risk assessment may need to be undertaken. Further details of each of these scenarios, including considerations for the flood risk assessment are provided in the following sections.

7.1 Requirements for a Flood Risk Assessment

Assessment of flood risk is required in support of any planning application where flood risk may be an issue, and this may include sites in Flood Zone C (low probability of flooding) where a watercourse or field drain exists nearby. The level of detail will vary depending on the risks identified and the proposed land use. As a minimum, all proposed development, including that in Flood Zone C, must consider the impact of surface water flood risks on drainage design. In addition, flood risk from sources other than fluvial should be reviewed.

For sites within Flood Zone A or B (high/moderate probability of flooding), a site specific "Stage 2 - Initial FRA" will be required and may need to be developed into a "Stage 3 - Detailed FRA". The extents of Flood Zone A and B are delineated through this SFRA. However, future studies may refine the extents (either to reduce or enlarge them) so a comprehensive review of available data should be undertaken once an FRA has been triggered.

Within the FRA the impacts of climate change and residual risk (including culvert/structure blockage) should be considered and remodelled where necessary, using an appropriate level of detail, in the design of finished floor levels. Further information on the required content of the FRA is provided in the Planning System and Flood Risk Management Guidelines.

Any proposal that is considered acceptable in principle shall demonstrate the use of the sequential approach in terms of the site layout and design and, in satisfying the Justification Test (where required), the proposal will demonstrate that appropriate mitigation and management measures are put in place.

7.2 Drainage Design

All proposed development, whether in Flood Zone A, B or C, must consider the impact of surface water flood risks on drainage design as specified by the surface water management policies in the Greater Dublin Strategic Drainage Study (GDSDS) and this will be considered in the planning process. This may be in the form of a section within the flood risk assessment (for sites in Flood Zone A or B) or part of a surface water management plan.

Particular attention should be given to development in low-lying areas which may act as natural ponds for collection of run-off.

The drainage design should ensure no increase in flood risk to the site, or the downstream catchment. Where possible, and particularly in areas of new development, floor levels should at a minimum be 300mm above adjacent roads and hard standing areas to reduce the consequences of any localised flooding. Where this is not possible, an alternative design appropriate to the location may be prepared.

In addition, for larger sites (i.e. multiple dwellings or commercial units) master planning should ensure that existing flow routes are maintained, through the use of green infrastructure.

7.3 Development Proposals in Flood Zone C

Where a site is within Flood Zone C but adjoining or in close proximity to Flood Zone A or B there could be a risk of flooding associated with factors such as future scenarios (climate change) or in the event of failure of a defence, blocking of a bridge or culvert. Risk from sources other than fluvial must also be addressed for all development in Flood Zone C. As a minimum in such a scenario, a flood risk assessment should be undertaken which will screen out possible indirect sources of flood risk and where they cannot be screened out, it should present mitigation measures. The most likely mitigation measure will involve setting finished floor levels to a height that is above the 1 in 100-year fluvial flood level, with an allowance for climate change and freeboard, or to ensure a step up from road level to prevent surface water ingress. Design elements such as channel maintenance or trash screens may also be required. Evacuation routes in the event of inundation of surrounding land should also be detailed.

The impacts of climate change should be considered for all proposed developments and this information is readily available from the CFRAM dataset on floodinfo.ie. A development which is currently in Flood Zone C may be shown to be at risk when 20% climate change allowance is applied. Details of the approach to incorporating climate change impacts into the assessment and design are provided in Section 7.6.

7.4 Applications for Developments in Flood Zone A and B

7.4.1 Minor Developments

Section 5.28 of the Planning Guidelines on Flood Risk Management identifies certain types of development as being 'minor works' and therefore exempt from the Justification Test. Such development relates to works associated with existing developments, such as extensions, renovations and rebuilding of the existing development, small scale infill and changes of use.

Despite the 'Sequential Approach' and 'Justification Test' not applying, as they relate to existing buildings, an assessment of the risks of flooding should accompany such applications. This must demonstrate that the development would not increase flood risks, by introducing significant numbers of additional people into the flood plain and/or putting additional pressure on emergency services or existing flood management

infrastructure. This is particularly the case in Ballinasloe, prior to completion of the FRS. The development must not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities. Where possible, the design of built elements in these applications should demonstrate principles of flood resilient design (See 'The Planning System and Flood Risk Management Guidelines for Planning Authorities Technical Appendices, 2009', Section 4 - Designing for Residual Flood Risk).

Generally, the approach to deal with flood protection would involve raising the ground floor levels above the level of extreme river levels. If this leads to floor levels being much higher than adjacent streets it could create a hostile streetscape for pedestrians. This would cause problems for infill development sites if floor levels were required to be significantly higher than those of neighbouring properties. In this regard, it has been recognised that some flexibility could be allowed, in limited circumstances, on a site by site basis, for commercial and business developments. In these cases, the detailed design of the development should reflect the vulnerability of the site in terms of materials, fixtures and fittings and internal layout. For high risk areas, less vulnerable uses are encouraged at ground floor levels and in many areas of Ballinasloe highly vulnerable development is not appropriate at ground floor level, this is clarified in Section 8.

It should be noted that for residential buildings within Flood Zone A or B, bedroom accommodation is more appropriate at upper floor levels. A site-specific FRA will inform appropriate uses and detailed design and layout.

For commercial operations, business continuity must be considered, and steps taken to ensure operability during and recovery after a flood event for both residential and commercial developments. Emergency access must be considered as in many cases flood resilience will not be easily achieved in the existing built environment.

The requirement for providing compensatory storage for minor developments has been reviewed and can generally be relaxed, even where finished floor levels have been raised. This is because the development concerns land which has previously been developed and would already have limited capacity to mitigate flooding. However, a commentary to this effect must be substantiated in the site-specific FRA.

7.4.2 Highly Vulnerable Development in Flood Zone A or B

Development which is highly vulnerable to flooding, as defined in The Planning System and Flood Risk Management, includes (but is not limited to) dwelling houses, schools, hospitals, emergency services and caravan parks.

New Development

It is not appropriate for new, highly vulnerable development to be located on greenfield land in Flood Zones A or B, particularly outside the core of a settlement and where there are no flood defences. Such proposals do not pass the Justification Test. Instead, a less vulnerable use should be considered.

For extant permissions in Flood Zone A/B if the site remains unconstructed and the planning application lapses, any future planning applications on the site should be subject to an appropriately detailed FRA specific to the new site layout and it may be found that the site cannot be developed as planned. As part of any future variation to the Development Plan or the preparation of a Local Area Plan (as applicable to the relevant settlement) lands with no extant permission should be considered in line with the sequential approach and Justification Test for Plan Making.

Existing Developed Areas

The Planning Circular (PL02/2014) states that *"notwithstanding the need for future development to avoid areas at risk of flooding, it is recognised that the existing urban structure of the country contains many well established cities and urban centres which will continue to be at risk of flooding. In addition, development plans have identified various strategically important urban centres whose continued consolidation, growth, development or generation, including for residential use, is being encouraged to bring about compact and sustainable growth*."

Minor/small scale infill housing, extensions or changes of use is discussed previously and, subject to application of the Plan Making Justification Test and site specific flood risk assessment including the Development Management Justification Test, can in some cases be considered, this is clarified in each area within Section 8.

In cases where development has been justified, the outline requirements for a flood risk assessment and flood management measures have been detailed in this SFRA in the following sections and also the settlement review in Section 8 and Appendix A for the application of the Justification Test. Of prime importance is the requirement to manage risk to the development site and not to increase flood risk elsewhere. This should give due consideration to safe evacuation routes and access for emergency services during a flood event.

7.4.3 Less Vulnerable Development in Flood Zone A or B

Less vulnerable development includes retail, leisure, warehousing, technology, enterprise and buildings used for agriculture and forestry a comprehensive categorisation of land uses and vulnerability is provided in Table 3-3.

The design and assessment of less vulnerable development should generally begin with 1% AEP fluvial event as standard, with climate change and a suitable freeboard included in the setting of finished floor levels. The site-specific FRA should ensure that the risks are defined, understood, and accepted. Operability and emergency response should also be clearly defined. In a limited number of cases this may allow construction as low as the 1% AEP level to be adopted, provided the risks of climate change are included in the development through adaptable designs or resilience measures.

7.4.4 Water compatible uses in Flood Zone A or B

Water compatible uses can include the non-built environment, such as open space, agriculture and green corridors. These uses do not require a flood risk assessment and are appropriate for Flood Zone A and B. However, there are numerous other uses which are classified as water compatible, but which involve some kind of built development, such as lifeguard stations, fish processing plants and other activities requiring a waterside location. The Justification Tests are not required for such development, but an appropriately detailed flood risk assessment is required. This should consider mitigation measures such as development layout and finished floor levels, access, egress and emergency plans. Climate change and other residual risks should also be considered within the site specific FRA.

7.5 Key points for FRA for all types of developments

- Finished floor levels to be set above the 1% AEP fluvial level, with an allowance for climate change plus a freeboard of at least 300mm. The freeboard allowance should be assessed, and the choice justified.
- Flow paths through the site and areas of surface water storage should be managed to maintain their function and without causing increased flood risk elsewhere.
- Compensatory storage is to be provided to balance floodplain loss as a result of raising ground levels within Flood Zone A. The storage should be provided within the flood cell and on a level for level basis up to the 1% level.
- In a defended site, compensatory storage is not required, but the impact of removing the net reduction in floodplain storage should be assessed, and any impacts to existing development mitigated for the 0.1% event or a breach of these defences.
- A site is considered to be defended if the standard of protection is 1% AEP, within which a freeboard of at least 300mm is included. The FFL of the proposed development needs to take into account the impacts of climate change and other residual risks, including the 0.1% event, unless this has also been incorporated into the defence design. This may be assessed through breach analysis, overtopping analysis or projection of levels from the channel inland.
- For less vulnerable development, it may be that a finished floor level as low as the 1% AEP level could be adopted, provided the risks of climate change are included in the development through adaptable designs or resilience measures. This approach should reflect emergency planning and business continuity to be provided within the development. It may reflect the design life of the development, the proposed use, the vulnerability of items to be kept in the premises, the occupants and users, emergency plan and inclusion of flood resilience and recovery measures.

7.6 Incorporating Climate Change into Development Design

In all developments, climate change should be considered when assessing flood risk and in particular residual flood risk. Climate change may result in increased flood extents and therefore caution should be taken when zoning lands in transitional areas (i.e. on the edge of the floodplain). Consideration of climate change is particularly important where flood alleviation measures are proposed, as the design standard of the proposal may reduce significantly in future years due to increased rainfall and river flows.

'The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009' recommends that a precautionary approach to climate change is adopted due to the level of uncertainty involved in the potential effects. In this regard, the Guidelines recommends:

- Recognising that significant changes in the flood extent may result from an increase in rainfall or tide events and accordingly adopting a cautious approach to zoning land in these potential transitional areas;
- Ensuring that the levels of structures designed to protect against flooding such as flood defences, land raising or raised floor levels are sufficient to cope with the effects of climate change over the lifetime of the development they are designed to protect (normally 85-100 years); and
- Ensuring that structures to protect against flooding and the development protected are capable of adaptation to the effects of climate change when there

is more certainty about the effects and still time for such adaptations to be effective.

Advice on the expected impacts of climate change and the allowances to be provided for future flood risk management in Ireland is given in the OPW draft guidance. Two climate change scenarios are considered; these are the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS). The MRFS is intended to represent a "likely" future scenario based on the wide range of future predictions available. The HEFS represents a more "extreme" future scenario at the upper boundaries of future projections. Based on these two scenarios the OPW recommended allowances for climate change are given in Table 7-1 below. These climate change allowances are particularly important at the development management stage of planning and will ensure that proposed development is designed and constructed to take into account best current knowledge.

Table 7-1: Allowances for Future Scenarios (100-year Time Horizon)

Criteria	MRFS	HEFS
Extreme Rainfall Depths	+20%	+30%
Flood Flows	+20%	+30%
Mean Sea Level Rise	+500mm	+1000mm

Through the CFRAM Studies, both MRFS and HEFS model runs have been completed on all study watercourses, providing flood extent and depth maps. This information can be used to support flood risk assessments where the current CFRAM scenario has been deemed appropriate to the location.

For watercourses that are not part of the CFRAM programme, fluvial flood extents can be qualitatively assessed by using the Flood Zone B outline as a surrogate for 'Flood Zone A with allowance for the possible impacts of climate change', as suggested in the 'Planning System and Flood Risk Management'. Quantitative assessment of risks may require an additional model run to fully understand risks.

For most development, including residential, nursing homes, shops and offices, the medium-range future scenario (20% increase in flows) is an appropriate consideration. This should be applied in all areas that are at risk of flooding (i.e. within Flood Zone A and B) and should be considered for sites which are in Flood Zone C but are adjacent to Flood Zone A or B. This is because land which is currently not at risk may become vulnerable to flooding when climate change is taken into account.

Where the risk associated with inundation of a development is low and the design life of the development is short (typically less than 30 years) the allowance provided for climate change may be less than the 20% / 0.5m level. However, the reasoning and impacts of such an approach should be provided in the site-specific FRA.

Conversely, there may be development which requires a higher-level response to climate change. This could include major facilities which are extremely difficult to relocate, such as hospitals, airports, Seveso sites or power stations, and those which represent a high-economic and long-term investment within the scale of development across the county. In such situations it would be reasonable to expect the high-end future scenario (30% increase in flow) to be investigated in the site-specific FRA and used as the design standard.

In general, climate change will be accounted for the setting of finished floor levels to a height which includes an allowance for climate change. However, climate change may

also reveal additional flow paths which need to be protected or give rise to flows which exceed culvert capacity or overtop defences. These outcomes will need to be specifically investigated for each site, and an appropriate response provided.

Further consideration to the potential future impacts of climate change is given for each settlement in Section 8.

7.7 Flood Mitigation Measures at Site Design

For any development proposal in an area at moderate or high risk of flooding that is considered acceptable in principle (i.e. has passed the Plan Making Justification Test), the site specific FRA must demonstrate that appropriate mitigation measures can be put in place and that residual risks can be managed to acceptable levels. This may include the use of flood-resistant construction measures that are aimed at preventing water from entering a building and that mitigate the damage floodwater causes to buildings. Alternatively, designs for flood resilient construction may be adopted where it can be demonstrated that entry of floodwater into buildings is preferable to limit damage caused by floodwater and allow relatively quick recovery.

Various mitigation measures are outlined below and further detail on flood resilience and flood resistance are included in the Technical Appendices of the Planning Guidelines, The Planning System and Flood Risk Management.

7.7.1 Site Layout and Design

To address flood risk in the design of new development, a risk-based approach should be adopted to locate more vulnerable land use to higher ground while water compatible development i.e. car parking (with appropriate flood management plan) and recreational space can be located in higher flood risk areas.

The site layout should identify and protect land required for current and future flood risk management. Waterside areas or areas along known flow routes can be used for recreation, amenity and environmental purposes to allow preservation of flow routes and flood storage, while at the same time providing valuable social and environmental benefits.

7.7.2 Ground Levels, Floor Levels and Building Use

Modifying ground levels to raise land above the design flood level is a very effective way of reducing flood risk to the site. However, in most areas of fluvial flood risk, conveyance or flood storage would be reduced locally and could increase flood risk off site. There are a number of criteria which must all be met before this is considered a valid approach:

- Development at the site must have been justified through this SFRA based on the existing (unmodified) ground levels.
- The FRA should establish the function provided by the floodplain. Where conveyance is a prime function then a hydraulic model will be required to show the impact of its alteration.
- The land being given over to storage must be land which does not flood in the 1% AEP fluvial event (i.e. Flood Zone B or C).
- Compensatory storage should be provided on a level for level basis to balance the total area that will be lost through infilling where the floodplain provides static storage.
- The provision of the compensatory storage should be in close proximity to the area that storage is being lost from (i.e. within the same flood cell).

- The land proposed to provide the compensatory storage area must be within the ownership / control of the developer.
- The compensatory storage area should be constructed before land is raised to facilitate development.
- Compensatory storage is generally not required for loss of floodplain in locations behind defences.

In some sites it is possible that ground levels can be re-landscaped to provide a sufficiently large development footprint. However, it is likely that in other potential development locations there is insufficient land available to fully compensate for the loss of floodplain. In such cases it will be necessary to reconsider the layout or reduce the scale of development or propose an alternative and less vulnerable type of development. In other cases, it is possible that the lack of availability of suitable areas of compensatory storage mean the target site cannot be developed and should remain open space.

Raising finished floor levels within a development is an effective way of avoiding damage to the interior of buildings (i.e. furniture and fittings) in times of flood. Alternatively, assigning a water compatible use (i.e. garage / car parking) or less vulnerable use to the ground floor level, along with suitable flood resilient construction, is an effective way of raising vulnerable living space above design flood levels. It can however have an impact on the streetscape. Safe access and egress is a critical consideration in allocating ground floor uses.

Depending on the scale of residual risk, resilient and resistance measures may be an appropriate response, but this will mostly apply to less vulnerable development.

7.7.3 Raised Defences

Construction of raised defences (i.e. flood walls and embankments) has traditionally been the response to flood risk. However, this is not a preferred option on an ad-hoc basis where the defences to protect the development are not part of a strategically led flood relief scheme. Where a defence scheme is proposed as the means of providing flood defence, the impact of the scheme on flood risk up and downstream must be assessed and appropriate compensatory storage must be provided.

7.8 Green Corridor

It is recommended that, where possible, and particularly where there is greenfield land adjacent to the river, a 'green corridor', is retained on all rivers and streams. This will have a number of benefits, including:

- Retention of all, or some, of the natural floodplain;
- Potential opportunities for amenity, including riverside walks and public open spaces;
- Maintenance of the connectivity between the river and its floodplain, encouraging the development of a full range of habitats;
- Natural attenuation of flows will help ensure no increase in flood risk downstream;
- Allows access to the river for maintenance works;
- Retention of clearly demarcated areas where development is not appropriate on flood risk grounds, and in accordance with the Planning System and Flood Risk Management.

The width of this corridor should be determined by the available land, and topographically constraints, such as raised land and flood defences, but would ideally span the fully width of the floodplain (i.e. all of Flood Zone A).

8 Settlement Zoning Review

The purpose of land use zoning objectives is to indicate to property owners and members of the public the types of development the Planning Authority considers most appropriate in each land use category. Zoning is designed to reduce conflicting uses within areas, to protect resources and, in association with phasing, to ensure that land suitable for development is used to the best advantage of the community as a whole.

This section of the SFRA will:

- Outline the strategic approach to flood risk management.
- Consider the land use zoning objectives utilised within Ballinasloe and assess their potential vulnerability to flooding.
- Based on the associated vulnerability of the particular use, a clarification on the requirement of the application of the Justification Test is provided.
- The consideration of the specific land use zoning objectives and flood risk will be presented for the settlements. Comment will be provided on the use of the sequential approach and justification test. Conclusions will be drawn on how flood risk is proposed to be managed in the settlement.

8.1 A Strategic Approach to Flood Risk Management

A strategic approach to the management of flood risk is important in Ballinasloe as the risks are varied, with scales of risk and vulnerability varying across the settlement.

Following the Planning Guidelines, development should always be located in areas of lowest flood risk first, and only when it has been established that there are no suitable alternative options should development (of the lowest vulnerability) proceed. Consideration may then be given to factors which moderate risks, such as defences, and finally consideration of suitable flood risk mitigation and site management measures is necessary.

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

A summary of flood risks associated with each of the zoning objectives has been provided in the following settlement reviews. The Flood Risk commentary indicates whether a certain land zoning, in Flood Zone A or B, will need to have the Plan Making Justification Test (JT) applied and passed.

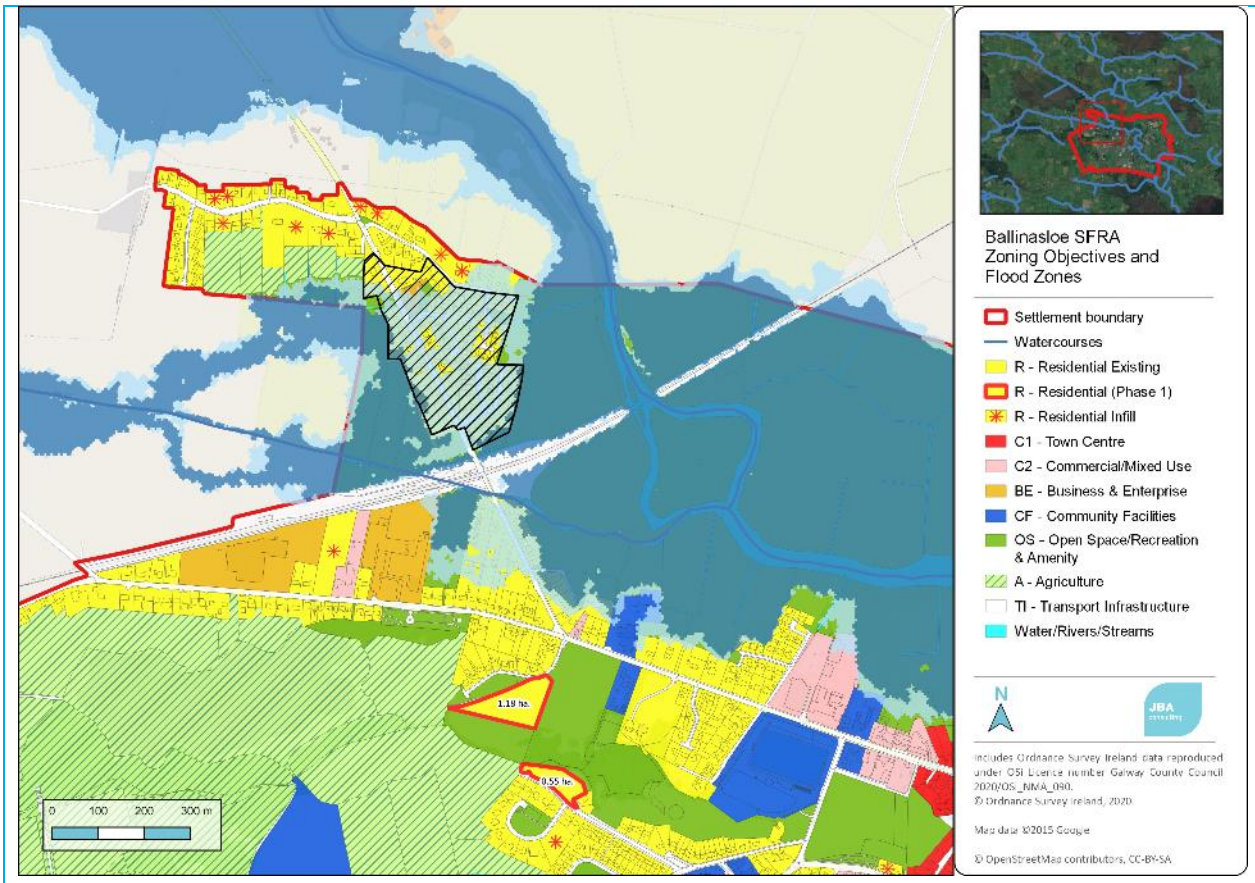
When carrying out a site specific FRA, or when planning applications are being considered, it is important to remember that not all uses will be appropriate on flood risk grounds, hence the need to work through the Justification Test for Development Management on a site by site basis and with reference to Table 8-1. For example, a Town Centre zoning objective can include for an integrated mix of residential, commercial, community and social uses which have varying vulnerabilities and would not be equally permissible within Flood Zone A and B.

Table 8-1: Zoning Objective Vulnerability

Zoning Objective	Indicative Primary Vulnerability	Flood Risk Commentary
Agriculture	Water compatible / highly vulnerable	JT not needed for water compatible. For farm housing the Justification Test applies in Flood Zone A/B.
Business & Enterprise	Less / highly vulnerable	For highly vulnerable development in Flood Zone A or B. For less vulnerable development in Flood Zone A.
Community Facilities	Less / highly vulnerable	Consideration to be given to flood risks and sequential use of land to ensure highly vulnerable uses are located within areas at lowest risk of flooding.
Residential Existing	Highly Vulnerable	JT required for within Flood Zone A and B.
Residential (Phase 1)	Highly Vulnerable	JT required for within Flood Zone A and B.
Residential (Phase 2)	Highly Vulnerable	JT required for within Flood Zone A and B.
Residential Infill	Highly Vulnerable	JT required for within Flood Zone A and B.
Industrial	Less vulnerable	Appropriate use in Flood Zone B, but JT will be needed in Flood Zone A.
Commercial Mixed Use	Less / highly vulnerable	For highly vulnerable development in Flood Zone A or B. For less vulnerable development in Flood Zone A.
Open Space/Recreation and Amenity	Water compatible	JT not needed. Land use appropriate and should be retained.
Public Utility	Less / highly vulnerable	For highly vulnerable development in Flood Zone A or B. For less vulnerable development in Flood Zone A.
Tourism	Less / highly vulnerable	For highly vulnerable development in Flood Zone A or B.
Transport Infrastructure	Less / Highly Vulnerable	For highly vulnerable development in Flood Zone A or B. For less vulnerable development in Flood Zone A.
Town Centre	Less / Highly Vulnerable	For highly vulnerable development in Flood Zone A or B. For less vulnerable development in Flood Zone A.

The following sections review the land use zoning objectives for each settlement within the plan and provide a comprehensive summary of flood risk and justification where necessary.

8.2 Derrymullan

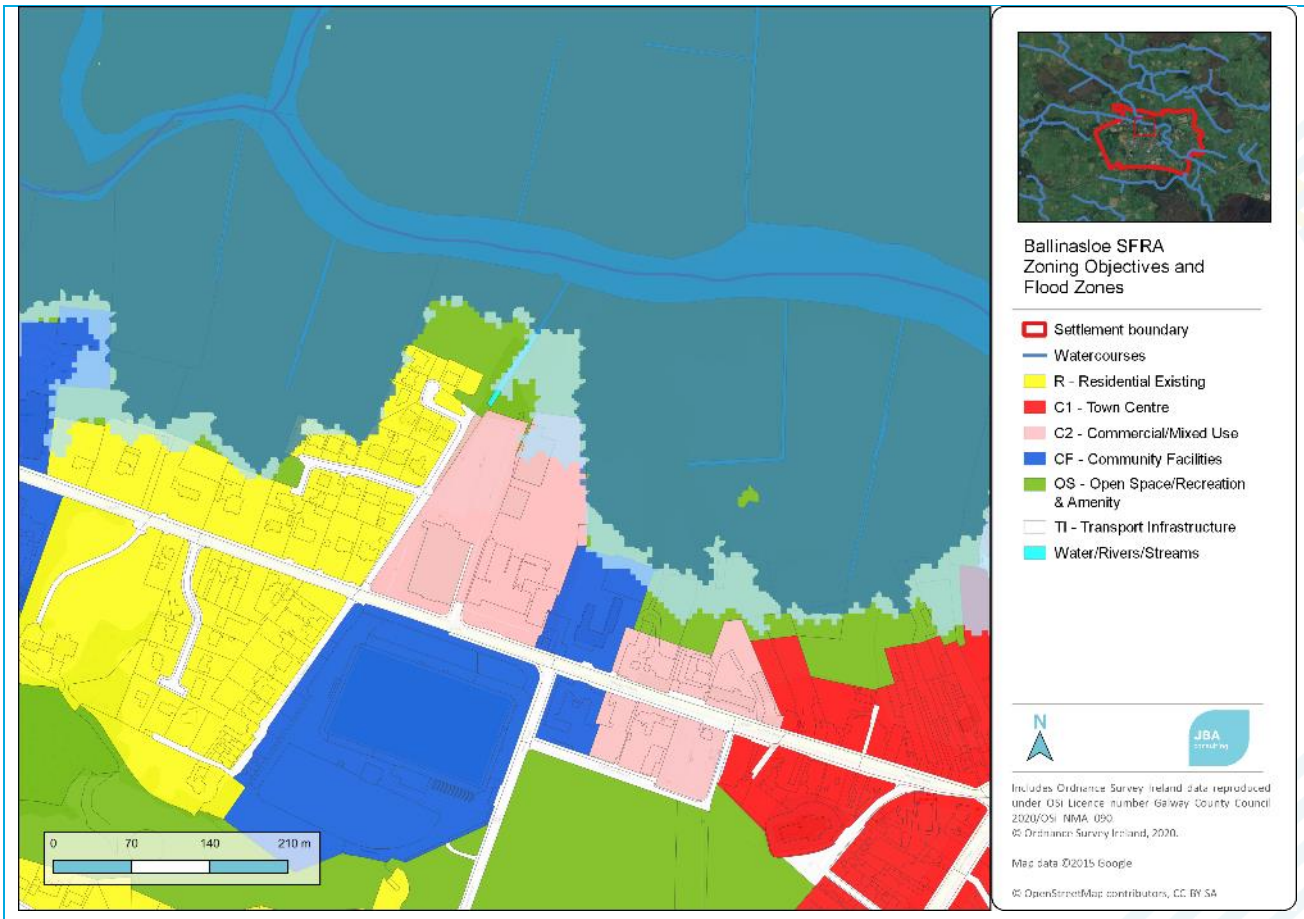


The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity.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

Flood Zone Data	CFRAM (verified by a site visit)
Historic Flooding	Recurring Fluvial flooding Derrymullan corresponding with predictive flood mapping. Flood event in 2009 was recorded as a 1 in 800 event and max flood levels recorded during this event was 39.33m OD. Note area is now defended.
Comment	The Suck River flows to the north and east of Derrymullan. In addition the Derrymullan stream passes through the middle of the area in an easterly direction. The Derrymullan Flood Defence Wall protects the large area of existing housing to the north of the railway line as well as the Business & Enterprise site (Signs & Systems units). The Flood Zones for Ballinasloe ignore impacts of flood defences. These are illustrated by a defended area in the mapping. The CFRAM Flood Zone mapping shows existing residential within Flood Zone A and B - this is defended by the aforementioned scheme. There is limited encroachment of Flood Zone A on Business and Enterprise and Community Facilities.
Climate Change	The Derrymullan defences were designed with a freeboard allowance for climate change, but would be sensitive to residual risk of overtopping in an event exceeding the design standard. South of the railway line is also sensitive to the impacts of climate change.
Conclusion	Most of the risk is limited to existing development and is defended to the north of the Railway line (Derrymullan Flood Defence Wall).

	South of the railway line there is significant undefended risk to existing residential and the leisure centre (CF zoning). Further development in this area prior to the completion of the Flood Relief Scheme would be premature. The Justification Test has been applied and passed for existing residential use (see Appendix A.1.1A.1.1). The Justification Test for existing residential is passed on the basis that development is; • Limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood Zone C. • There are to be no bedrooms on the ground floor when extending existing residential property in Flood Zone A/B. • Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the points detailed in Part 3 of the JT under Appendix A.1.1. The Justification Test has also been applied and passed for existing Community Facilities; the leisure centre (see Appendix A.1.2). Any future expansion of the leisure centre should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach should be applied and built development should preferably be located in Flood Zone C; • Flood Zone A would principally be suitable for playing pitches/water compatible use only; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Any development shall also be required to be built in accordance with GCC SuDS Policy. Elsewhere in the area and for Business & Enterprise sites that are adjacent to or within Flood Zone B, risk can be managed in line with approved Policy and the guidance provided within Section 7 of this SFRA.

8.3 Sarsfield Road

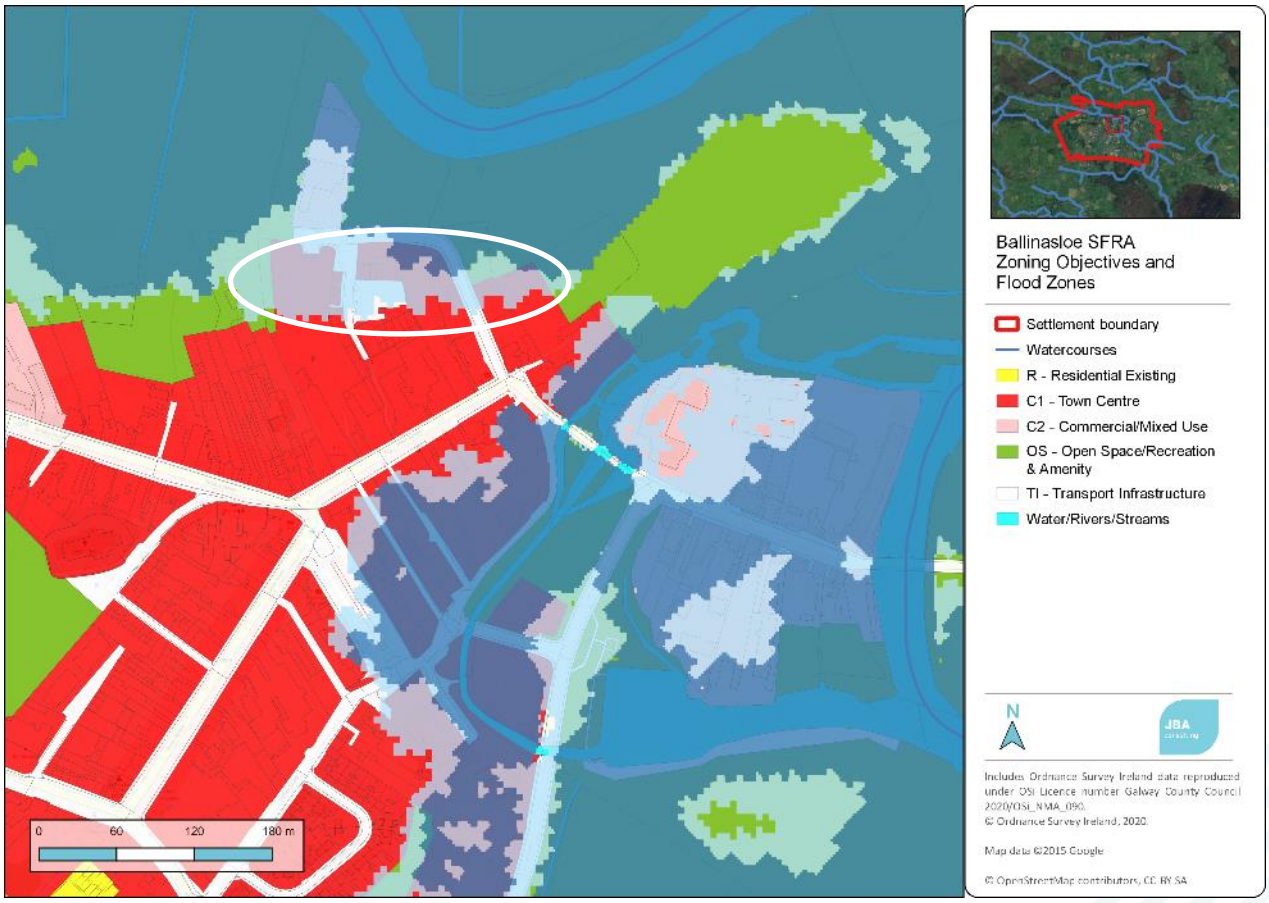


The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity.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

Flood Zone Data	CFRAM (verified by a site visit)
Historic Flooding	Ballinasloe, including the Sarsfield Road area experienced extensive flooding following a wet summer and a prolonged unsettled and heavy rainfall period starting in mid-October and continuing through November 2009. This resulted in high river water levels, high groundwater tables and practically full flood plains.
Comment	The Suck River flows in an easterly direction to the north of the area. Existing residential lies within Flood Zone A and B, however, there is limited encroachment along the northern fringe for this existing land use. There is also limited encroachment of Flood Zone A and B on existing land zoned for Commercial\Mixed use and Community Facilities on the north side of Sarsfield Road.
Climate Change	Localised moderate sensitivity to climate change.
Conclusion	Most of the risk is limited to existing developments and the Justification Test has been applied and passed for Existing Residential, C2 Commercial Mixed Use and CF Community Facilities (Scoil an Chroi Naofa). The Justification Test for existing residential (see Appendix A.2.1)A.2 is passed on the basis that development is: • Limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood Zone C.

	• There are to be no bedrooms on the ground floor when extending existing residential property in Flood Zone A/B. • Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the points detailed in Part 3 of the JT under Appendix A.2.1A.2. The Justification Test for existing Commercial Mixed Use zoning is passed on the basis that that the points detailed in Part 3 of the JT under Appendix A.2.2 are adhered to, key points include: • The sequential approach must be applied, and less vulnerable elements of the site should be located in Flood Zone B or preferably C; • Highly vulnerable development is only appropriate within Flood Zone C; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Any development shall also be required to be built in accordance with GCC SuDS Policy. Any future expansion of the school be subject to an FRA which should follow the general guidance provided in Section 77 of the SFRA and must specifically address the following: • The sequential approach should be applied and extensions to the school building should be located in Flood Zone C; • Flood Zone A/B would principally be suitable for playing pitches/water compatible use only; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Any development shall also be required to be built in accordance with GCC SuDS Policy. Elsewhere in the area, risk can be managed in line with approved Policy and the guidance provided within Section 7 of this SFRA.

8.4 Town Centre N and Commercial Mixed Use (east of River Suck)

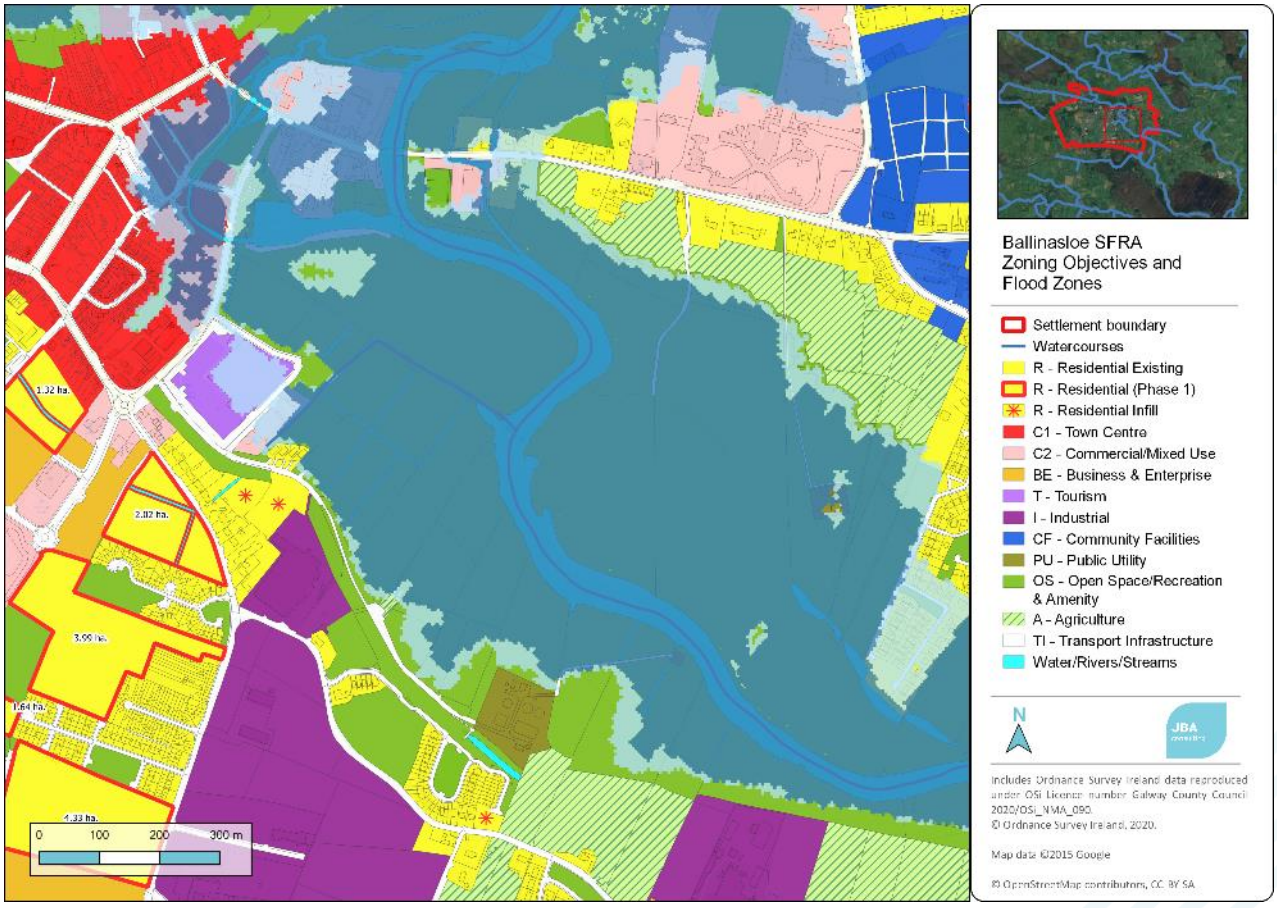


The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity.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

Flood Zone Data	CFRAM (verified by a site visit)
Historic Flooding	The Town Centre of Ballinasloe has experienced several previous fluvial flood events with the most severe one occurring in 2009. These events are primarily attributed to heavy rainfall and flood waters from the Suck.
Comment	This area is mostly within Flood Zone B, however the lands to the southeast are identified as being in Flood Zone A. There are some undeveloped or possibly brownfield lands, zoned town centre - circled white above. On the northeast of the Town Centre the Mill Race Nursing Home and adjacent hardware/agri supplies store to the north is zoned as Commercial/Mixed Use with the retirement home mostly within Flood Zone B and the hardware store within Flood Zone A. Commercial/Mixed use lands to the south also lie mostly within Flood Zone A.
Climate Change	High sensitivity to climate change.
Conclusion	Part of the Town Centre and Existing Commercial lands are within Flood Zone A/B. The Justification Test has been passed for the Town Centre on the basis that development; • Within Flood Zone A/B is limited to extensions, renovations and change of use. • Infill highly vulnerable development and demolition and

	reconstruction can only take place in Flood Zone C until such a time as the Ballinasloe FRS has been constructed and the SFRA updated to apply the Justification Tests for any opportunity sites/significant redevelopment of highly vulnerable use. • Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address points listed in Appendix A.3.1A.3.1. The Justification Test for existing Commercial/Mixed Use zoning is passed on the basis that that the points detailed in Part 3 of the JT under Appendix A.3.2A.3.2 are adhered to, key points include: • Development is constructed in accordance with the site specific FRAs. • Additional development in Flood Zones A/B should be limited to extensions and renovations. • Infill highly vulnerable development or change of use to such use is not appropriate until such a time as the Ballinasloe FRS has been constructed and the SFRA updated to apply the Justification Tests for any opportunity sites/significant redevelopment for such use. Elsewhere in the area, manage risk can be managed in line with approved Policy and the guidance provided within Section 7 of this SFRA.

8.5 Town Centre South



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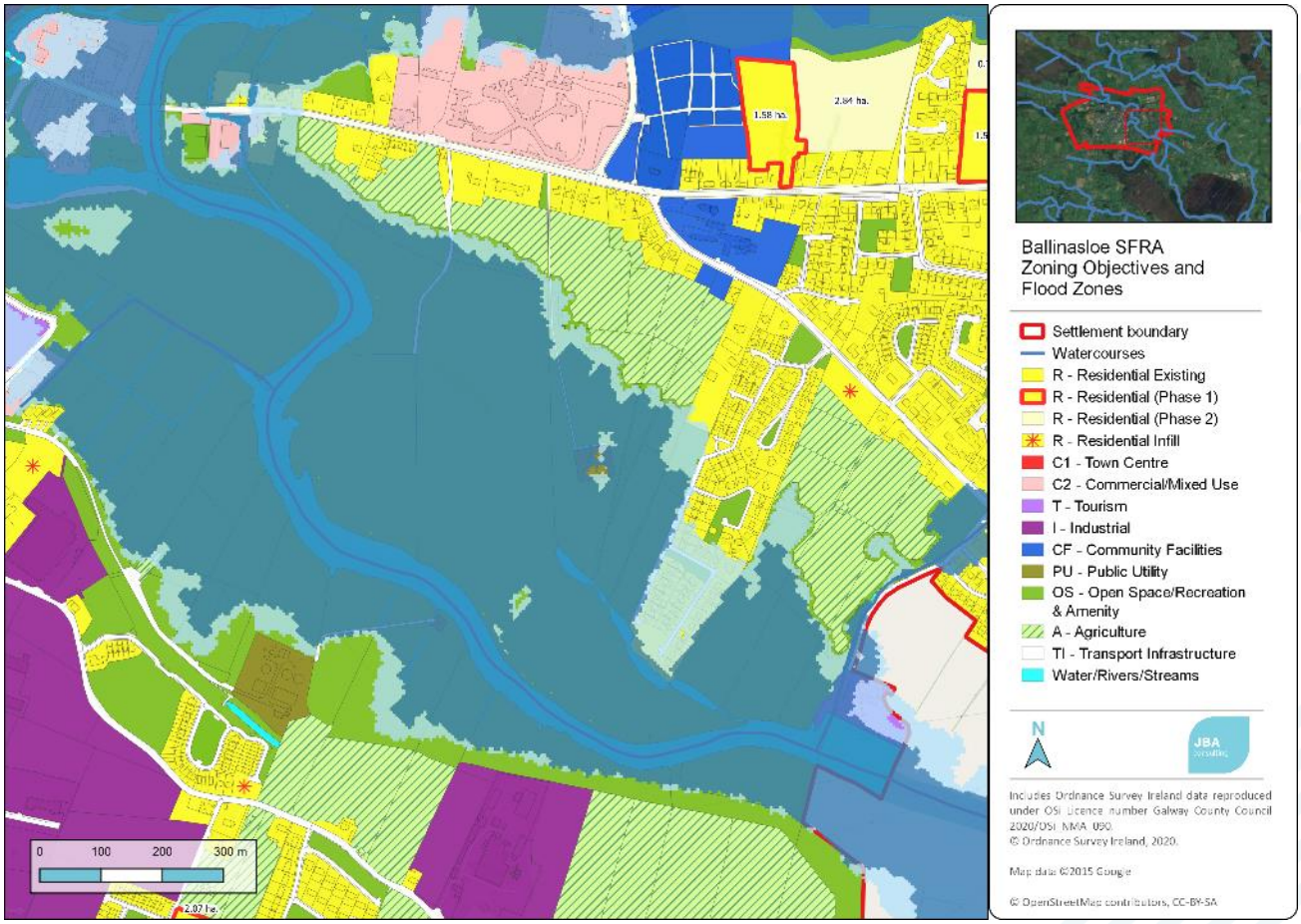
The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity.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

Flood Zone Data	CFRAM (verified by a site visit)
Historic Flooding	The Town Centre of Ballinasloe has experienced several previous fluvial flood events with the most severe one occurring in 2009. These events are primarily attributed to heavy rainfall and flood waters from the Suck.
Comment	No undeveloped lands are zoned. Under the Tourism zoning the carpark of Shearwater in Flood Zone B. Commercial/Mixed use (Lidl site and adjacent to the hotel) is in Flood Zone A/B. Existing residential borders Flood Zone A. Infill sites here are in Flood Zone C and also not affected by climate change.
Climate Change	Moderate to high sensitivity to climate change
Conclusion	The Justification Test has been applied and passed for Existing Residential use, Commercial/Mixed Use and Town Centre. The Justification Test for existing residential is passed on the basis that development is; • Limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood Zone C. • There are to be no bedrooms on the ground floor. • Any future development should be subject to an FRA which

	should follow the general guidance provided in Section 7 of the SFRA and must specifically address the points detailed in Part 3 of the JT under Appendix A.4.1A.4.1. The Justification Test for existing Commercial Mixed Use and Town Centre is passed on the basis that that the points detailed in Part 3 of the JT under Appendix A.4.2A.4.2 & A.4.3A.4.3 are adhered to, key points include: • Within Flood Zone A/B is limited to extensions, renovations and change of use. • Redevelopment of less vulnerable use in Commercial Mixed use land can be considered. • Infill highly vulnerable development and demolition and reconstruction can only take place in Flood Zone C until such a time as the Ballinasloe FRS has been constructed and the SFRA updated to apply the Justification Tests for any opportunity sites/significant redevelopment of highly vulnerable use. • Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address points listed in Appendix A.4.2A.4.2 & A.4.3A.4.3. The Tourism zoning includes the Shearwater Hotel and this is only impacted by Flood Zone B. In this case the use is considered less vulnerable and as with other sites in the area, risk can be managed in line with approved Policy and the guidance provided within Section 7 of this SFRA.

8.6 Ballinasloe East

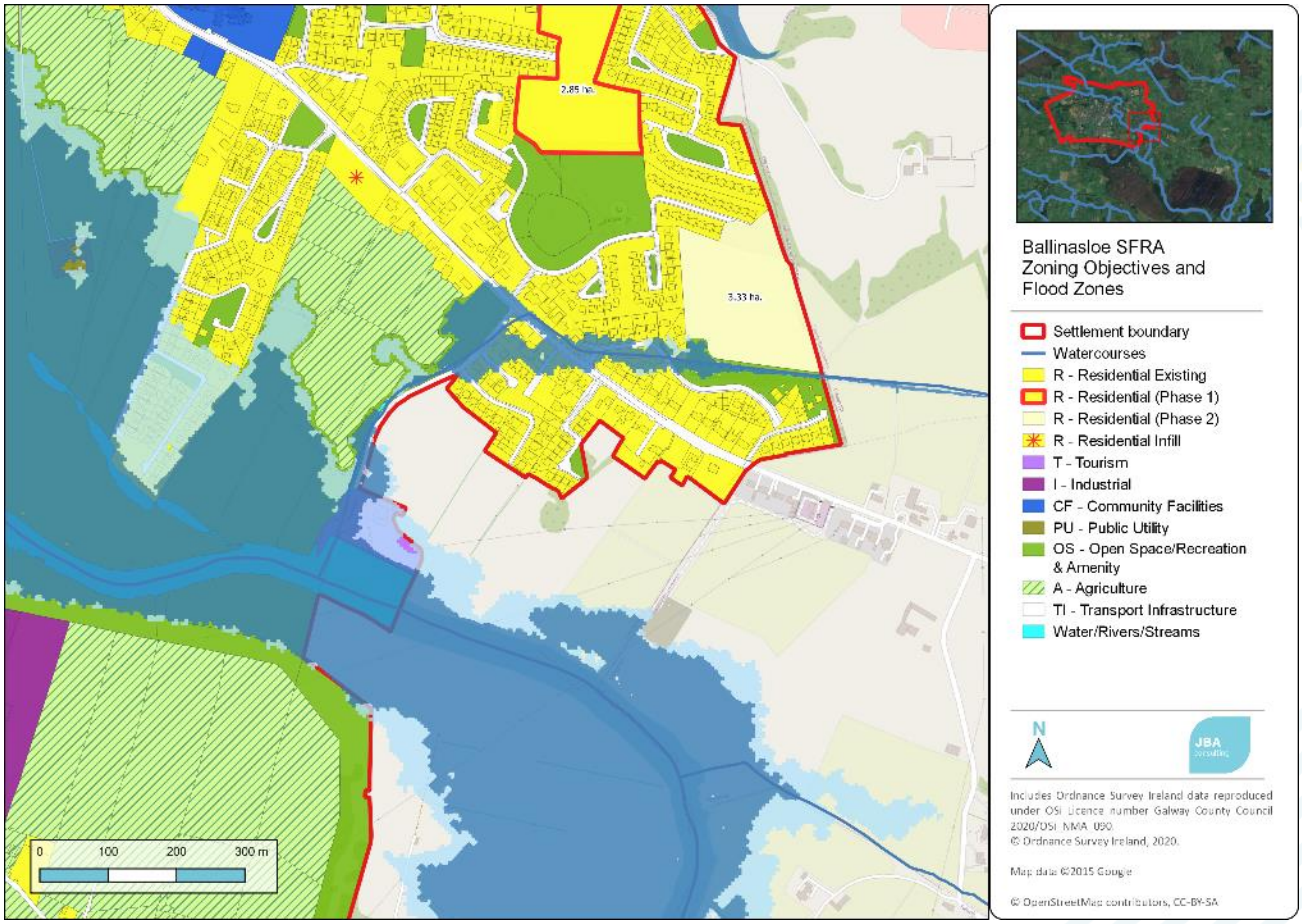


The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity.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

Flood Zone Data	CFRAM (verified by a site visit)
Historic Flooding	The area has experienced several previous fluvial flood events with the most severe one occurring in 2009. These events are primarily attributed to heavy rainfall and flood waters from the Suck.
Comment	Existing Residential lies within Flood Zone B with some very small areas within Flood Zone A. Existing public utility within Flood Zone A. Commercial/Mixed Use is within Flood Zone A/B. The rest of the zoning within a Flood Zone is comprised of Agriculture and Open Space.
Climate Change	Low sensitivity to climate change, apart from the residential area within Flood Zone B, which is highly sensitive.
Conclusion	The Justification Test has been applied and passed for existing residential use (see Appendix A.5.1A.5.1). The Justification Test for existing residential is passed on the basis that development is; • Limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood Zone C. • There are to be no bedrooms on the ground floor. • Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the

	SFRA and must specifically address the points detailed in Part 3 of the JT under Appendix A.5.1A.5.1. The Justification Test for existing Commercial/Mixed Use is passed on the basis that that the points detailed in Part 3 of the JT under Appendix A.5.2A.5.2 are adhered to, key points include: • The sequential approach must be applied, and less vulnerable elements of the site should be located in Flood Zone B or preferably C. The Justification Test for existing Public Utility is passed on the basis that that the points detailed in Part 3 of the JT under Appendix A.5.3A.5.3 are adhered to, key points include: • The sequential approach should be applied and highly vulnerable elements of the site should be located in Flood Zone C, or raised/bunded/protected; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas. Elsewhere in the area, risk can be managed in line with approved Policy and the guidance provided within Section 7 of this SFRA.

8.7 Moycarn

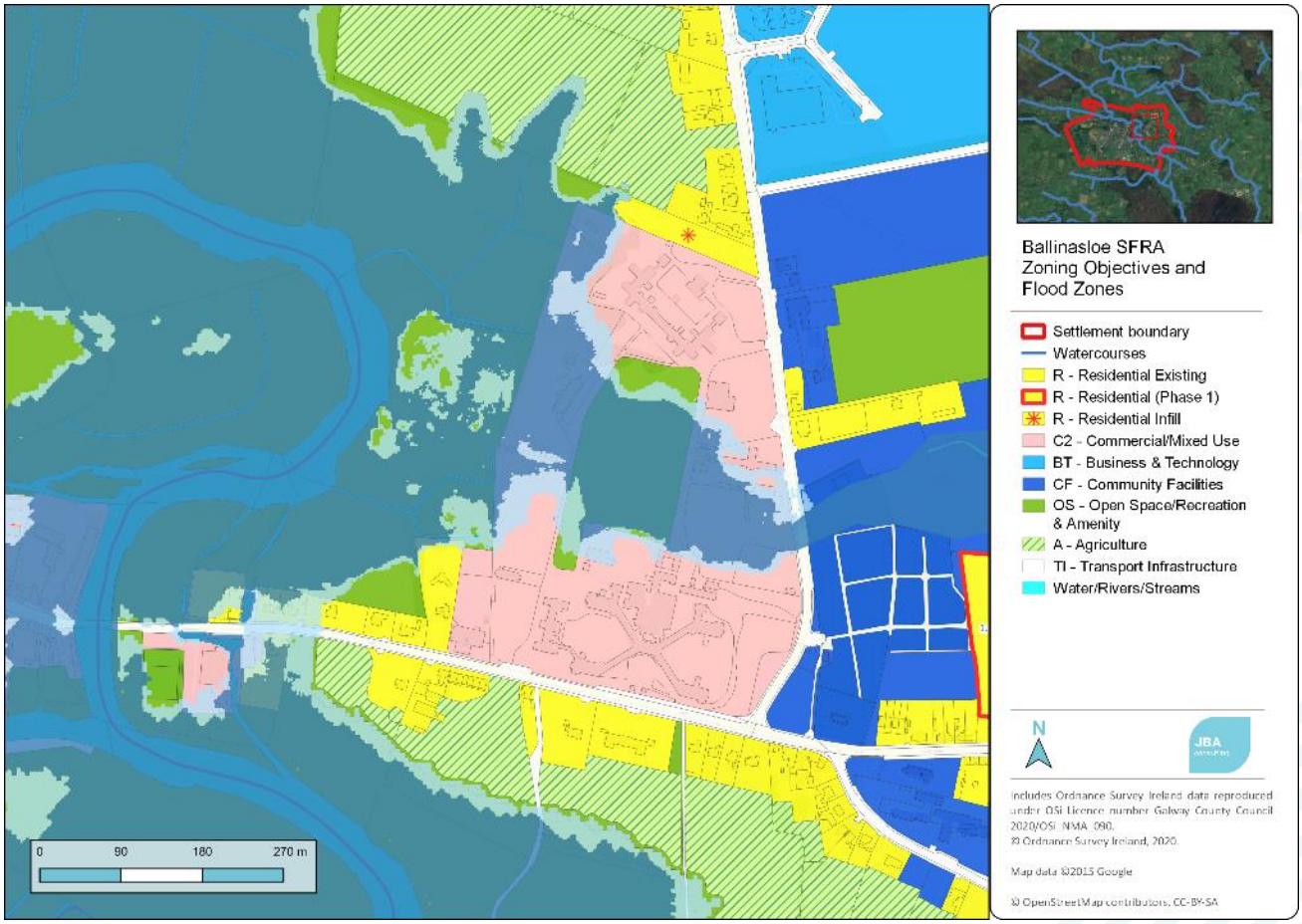


The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity.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

Flood Zone Data	CFRAM (verified by a site visit)
Historic Flooding	Moycarn, including Portnick Drive is an area of recurring flooding. This area was also confirmed to have flooded during the flood event in 2009, which was recorded as a 1 in 800 event with max flood level recorded of 39.33m OD.
Comment	Existing Residential lies within Flood Zone A & B. Existing tourism (Hotel & Marina) within Flood Zone A, the marina is a water compatible use. The rest of the zoning within Flood Zone A/B is comprised of Agriculture and Open Space which is appropriate.
Climate Change	Low sensitivity to climate change
Conclusion	Risk is limited to existing residential development, plus the hotel (tourism), both of which must have the JT applied. The Justification Test has been applied and passed for existing residential use (see Appendix A.6.1A.6.1) on the basis that development is; • Limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood Zone C. • There are to be no bedrooms on the ground floor. • Any future development should be subject to an FRA which

	should follow the general guidance provided in Section 7 of the SFRA and must specifically address the points detailed in Part 3 of the JT under Appendix A.6.1A.6.1. The Justification Test for existing Tourism Use is passed on the basis that that the points detailed in Part 3 of the JT under Appendix A.6.2A.6.2 are adhered to, key points include: • Flood Zone A would principally be suitable for water compatible use only; • Bedrooms should be located in the upstairs of the hotel building when extending existing development within Flood Zone B; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures.

8.8 St. Brigid's Hospital

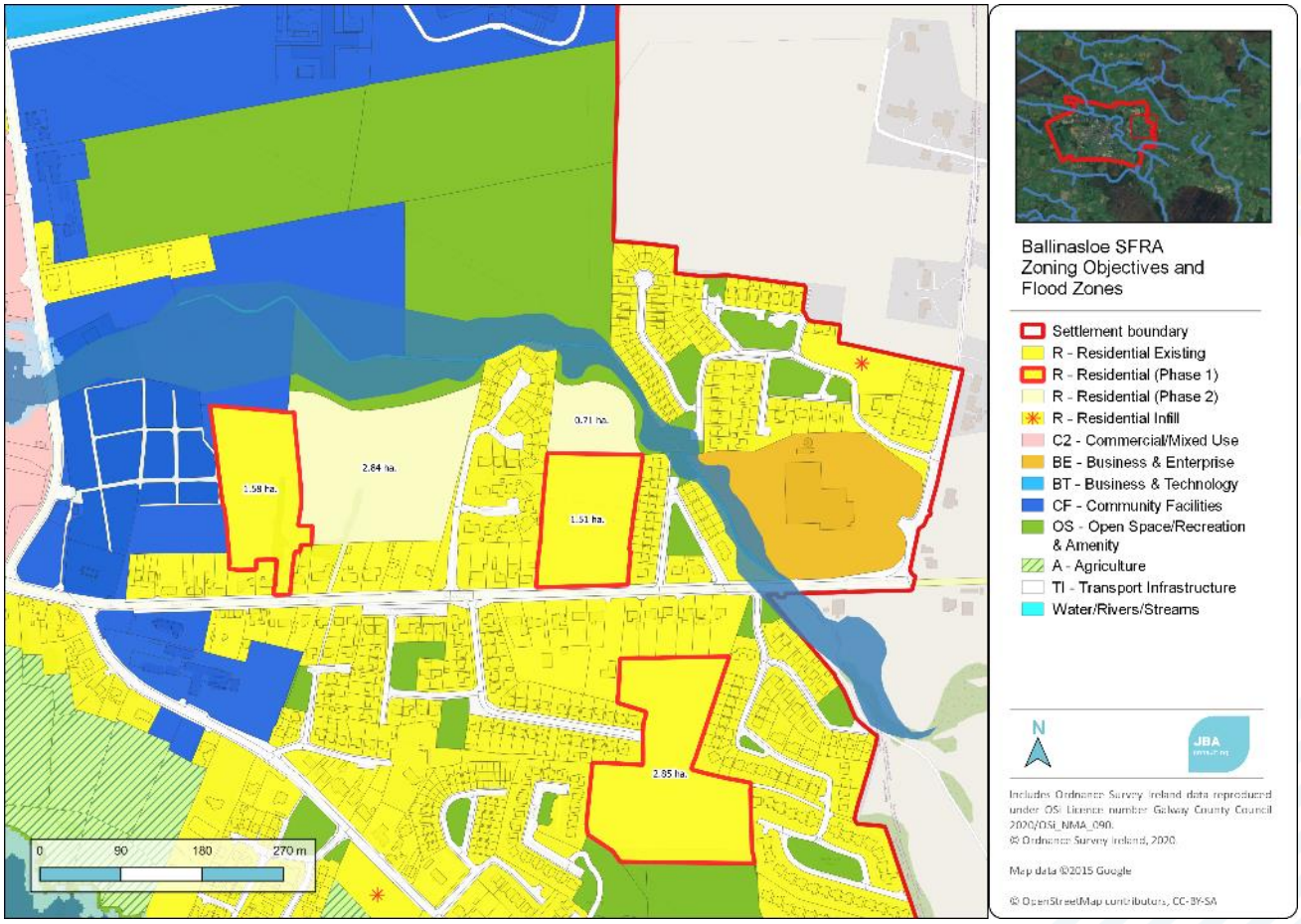


The flood mapping has been produced in accordance with the Planning Guidelines and therefore ignores the impact of flood protection structures. Areas protected by flood defences still carry a residual risk of flooding due to overtopping or breach, there may also be no guarantee of maintenance in perpetuity.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

Flood Zone Data	CFRAM (verified by a site visit)
Historic Flooding	The area indicated in predictive flood mapping was confirmed to have flooded during the flood event in 2009, which was recorded as a 1 in 800 event with max flood level recorded of 39.33m OD.
Comment	The dis-used St Brigid's Hospital site is zoned commercial/mixed use and is a key redevelopment site within Ballinasloe. The zoning type ranges in vulnerability from less to high, with residential use posing the greatest risk within the Flood Zones. The Ballinasloe FRS is yet to confirm relief options for the area, but it is possible that the site will be protected, but that is still some years away and risk must be managed in the interim period.
Climate Change	Low sensitivity
Conclusion	Risk is present to a large central low lying area of the St Brigid's site. There is also some amenity space within Flood Zone A/B which is appropriate. The JT has been applied and passed for Commercial/Mixed use with some caveats • Residential redevelopment and any demolition and reconstruction can only take place in Flood Zone C. • Less vulnerable development can take place in Flood Zone B.

	• Areas within Flood Zone A/B (for highly vulnerable development) and Flood Zone A (for less vulnerable development) should not be developed until after the Ballinasloe Flood Relief Scheme is completed and an amendment to the SFRA has been undertaken to apply the Justification Test for the particular use. • Any future development should be subject to an FRA which should follow the general guidance provided in Section 7of the SFRA and must specifically address the points detailed in Part 3 of the JT under Appendix A.7.1A.7.1. For other sites within the area manage risk in line with approved Policy and the guidance provided within Section 7 of this SFRA.

8.9 St Brigid's to Dubarry Area



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

Flood Zone Data	JBA verified by a site visit, LiDAR analysis and alluvial soils mapping.
Historic Flooding	Anecdotal evidence confirms surcharging of the culvert upstream of the graveyard. Also the presence of alluvial soils in the vicinity of the watercourse in this area indicates these lands were historically flooded.
Comment	The CFRAM did not map the local watercourse in the area between Dubarry factory in the east and St Brigid's in the west. The watercourse flows in a westerly direction and has an associated margin of food risk that has now been assessed on site by JBA. The watercourse goes into culvert under the cemetery and there is a risk of surcharging and an overland flow route to St Brigid's. The assessment identified potential risk to lands zoned for existing Residential, Business & Enterprise and Community Facilities.
Climate Change	Moderate sensitivity to climate change.
Conclusion	The Justification Test has been applied and passed to these existing residential, community facility and business and enterprise lands. The Justification Test has been applied and passed for existing Residential lands on the basis that; • Further detailed assessment of risk under a site specific FRA is required to confirm flood level and extent of the local watercourse.

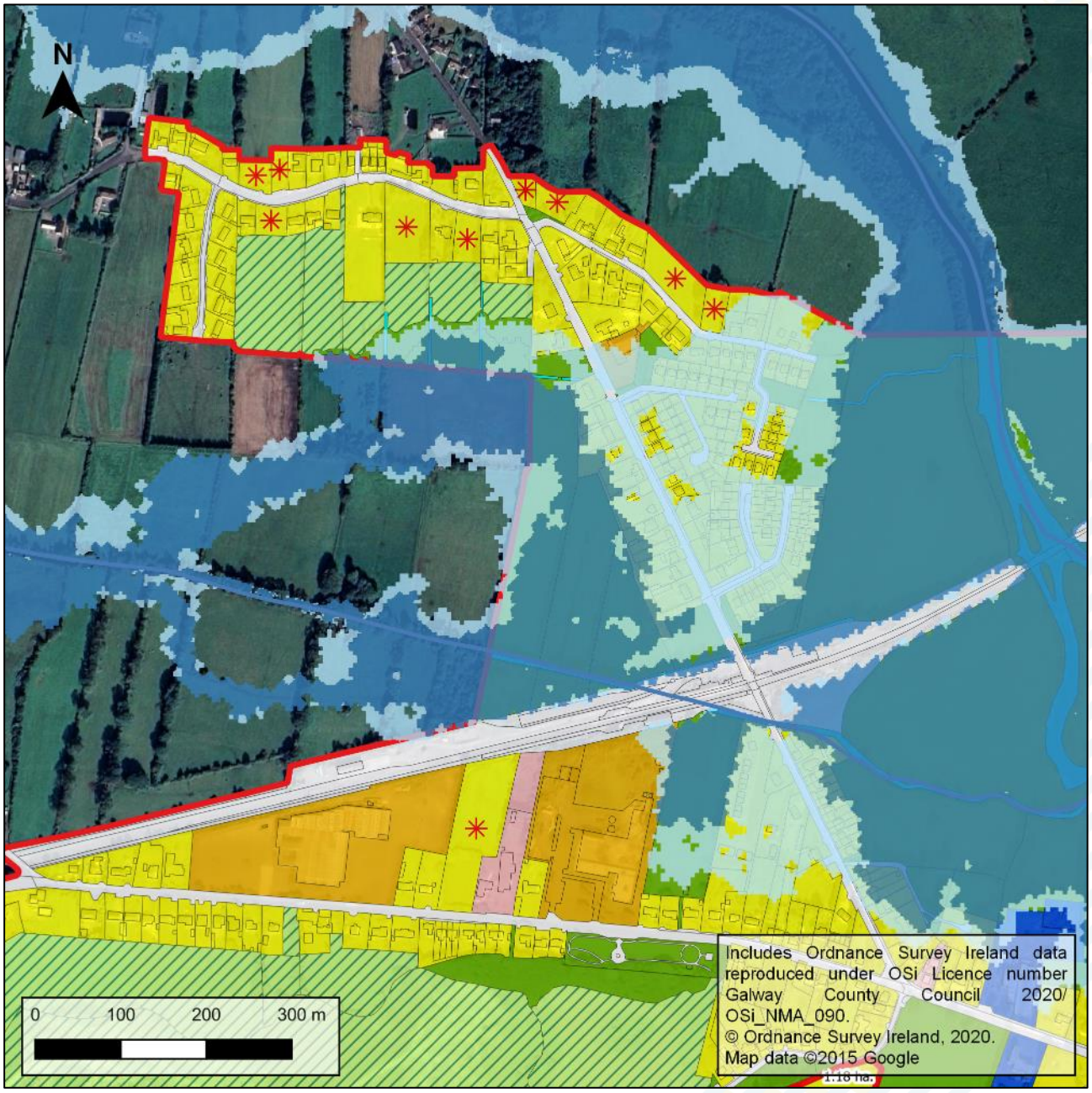
	• Development is constructed in accordance with the site specific FRAs. • Additional development in Flood Zones A/B should be limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood Zone C. • Refer to Appendix A.8.1A.8.1 for further guidance. The Justification Test has been applied and passed for existing Business & Enterprise lands on the basis that any further development of the lands should be subject to an appropriately detailed FRA which should clarify flood levels and extents through a detailed FRA and for new development the sequential approach must be applied and less vulnerable elements of the site should be located in Flood Zone B or preferably C, refer to Appendix A.8.2A.8.2. Finally, the Justification Test has also been applied and passed for the Community lands. Any future development of the land should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • Existing flood data is indicative and does not provide flood levels. An appropriately detailed hydraulic model will be required to confirm flood levels and extents. • The sequential approach should be applied and highly vulnerable elements of development should be located in Flood Zone C, less vulnerable is appropriate within Flood Zone B; • Flood Zone A would principally be suitable for playing pitches/water compatible use only. • Refer to Appendix A.8.3A.8.3 for further guidance. For other sites within the area manage risk in line with approved Policy and the guidance provided within Section 7 of this SFRA.

Appendix A - Justification Tests

A.1 Derrymullan

A.1.1 Existing Residential

Area within defended area and south of railway

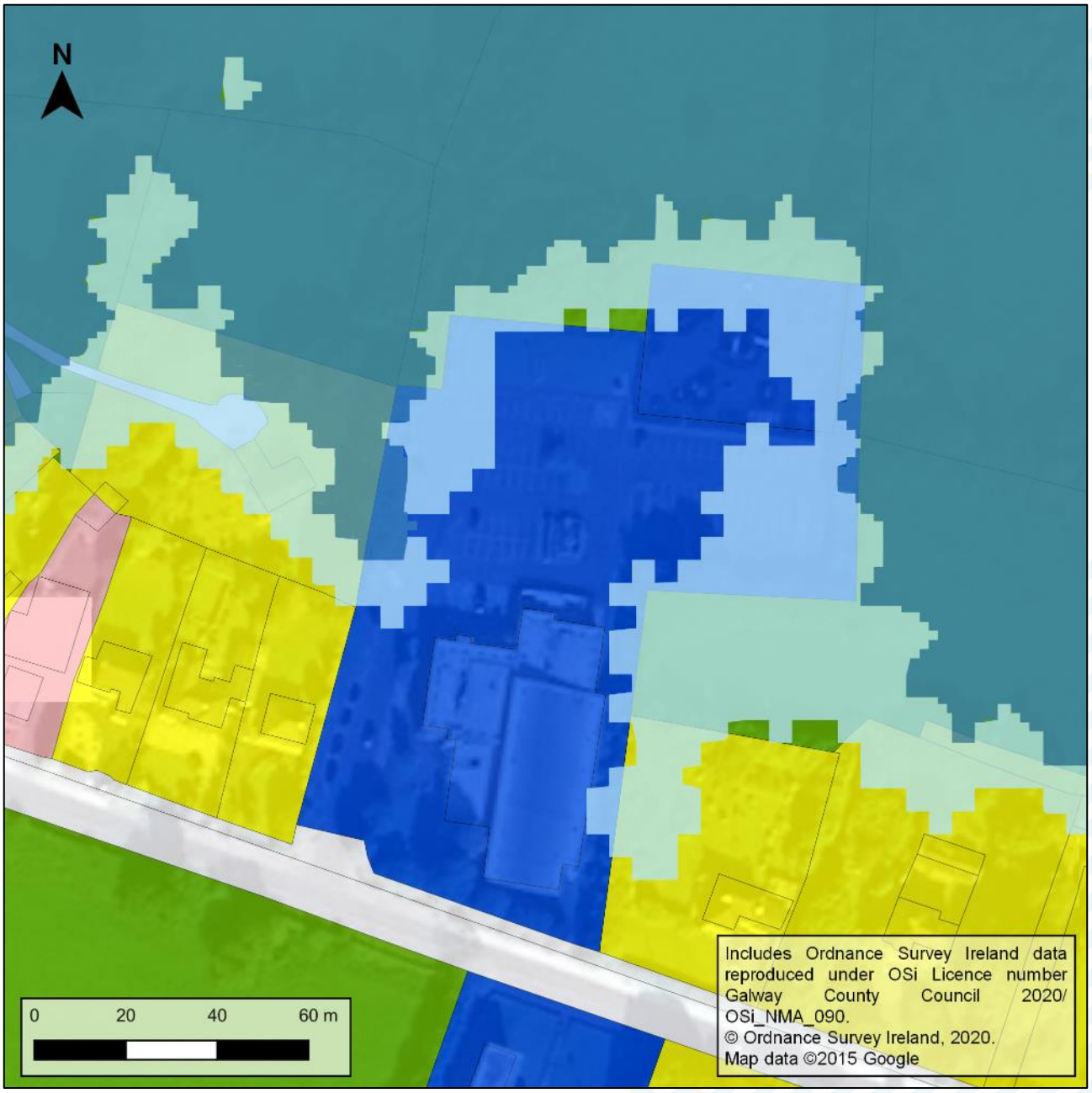


1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally

Area within defended area and south of railway	
provisions of the Planning and Development Act, 2000, as amended.	strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
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:	Yes. The existing residential lands are located within the existing settlement boundary of the town and reflects where housing has been provided.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The lands zoned are existing residential lands within Ballinasloe's settlement boundary. The retention of existing residential zoning is essential to regeneration and vitality of the settlement and to retaining a strong and cohesive settlement development boundary. The type of developments envisaged to occur would include small scale developments such as such as domestic extensions and changes of use which do not increase risk of flooding. Change of use to a more vulnerable class would not be permitted. (Table 3.1 Classification of vulnerability of different types of development) The Planning System and Flood Risk Management Guidelines refers.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands comprise under-utilised lands and existing residential development.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are located within the settlement boundary of Ballinasloe identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. Retention of existing residential lands will maintain a strong and cohesive settlement. Any growth in this zoning will be limited to uses which do not increase flood risk.
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 zoning classification 'existing residential' is a unique category of zoning which reflects existing rather than proposed use. There are no alternative zoning categories on lands in lower risk of flooding within or adjoining the core that fulfils the same role as 'existing residential'.
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	South of the railway line there is significant undefended risk to existing residential. Further development here prior to the completion of the FRS is premature. A large area of existing residential development is within an area defended by the Derrymullan Flood Defence Wall. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Development is constructed in accordance with the site specific FRAs.

Area within defended area and south of railway	
the local context and should be described in the relevant flood risk assessment	• Additional development in Flood Zones A/B should be limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood Zone C. Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • FRA should address climate change scenarios in relation to FFLs and potential mitigation measures; • Residential FFLs should be above the 1% AEP level plus climate change and freeboard; • Bedrooms should be located in the upstairs of two-story buildings when extending existing property when extending existing residential property in Flood Zone A/B; • Flood resilient construction materials and fittings should be considered if in Flood Zone A/B; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.1.2 Community Facilities

Leisure Centre


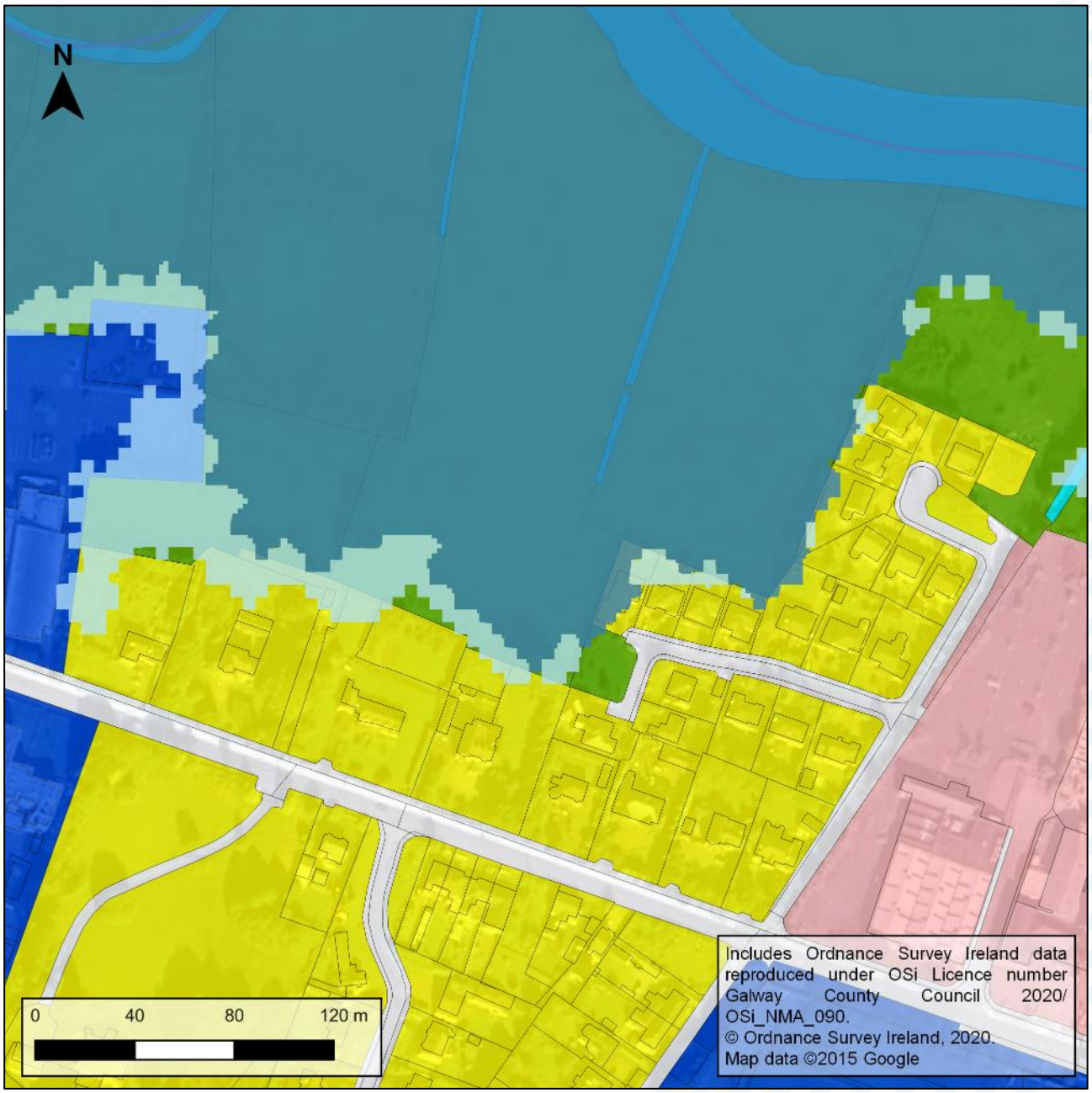
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. The zoning of these lands for Community Facilities is

Leisure Centre	
particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	required to achieve the proper planning and sustainable development of Ballinasloe.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. Its zoning for these uses is essential to facilitate the continued regeneration of Ballinasloe.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are a mix of existing and undeveloped Community Facilities lands within the settlement boundary of Ballinasloe.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are wholly located within Ballinasloe, identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The lands for the proposed use are essential in achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	The lands are a mix of existing and undeveloped Community Facilities lands considered appropriate to retain the zoning within the settlement boundary of Ballinasloe.
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	Just to the south of the River Suck an existing Leisure centre lies partly within Flood Zone A and B. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning for the leisure centre. Any future expansion of the leisure centre should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach should be applied and built development should preferably be located in Flood Zone C; • Flood Zone A would principally be suitable for playing pitches/water compatible use only; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.2 Sarsfield Road

A.2.1 Existing Residential

North of Sarsfield Road

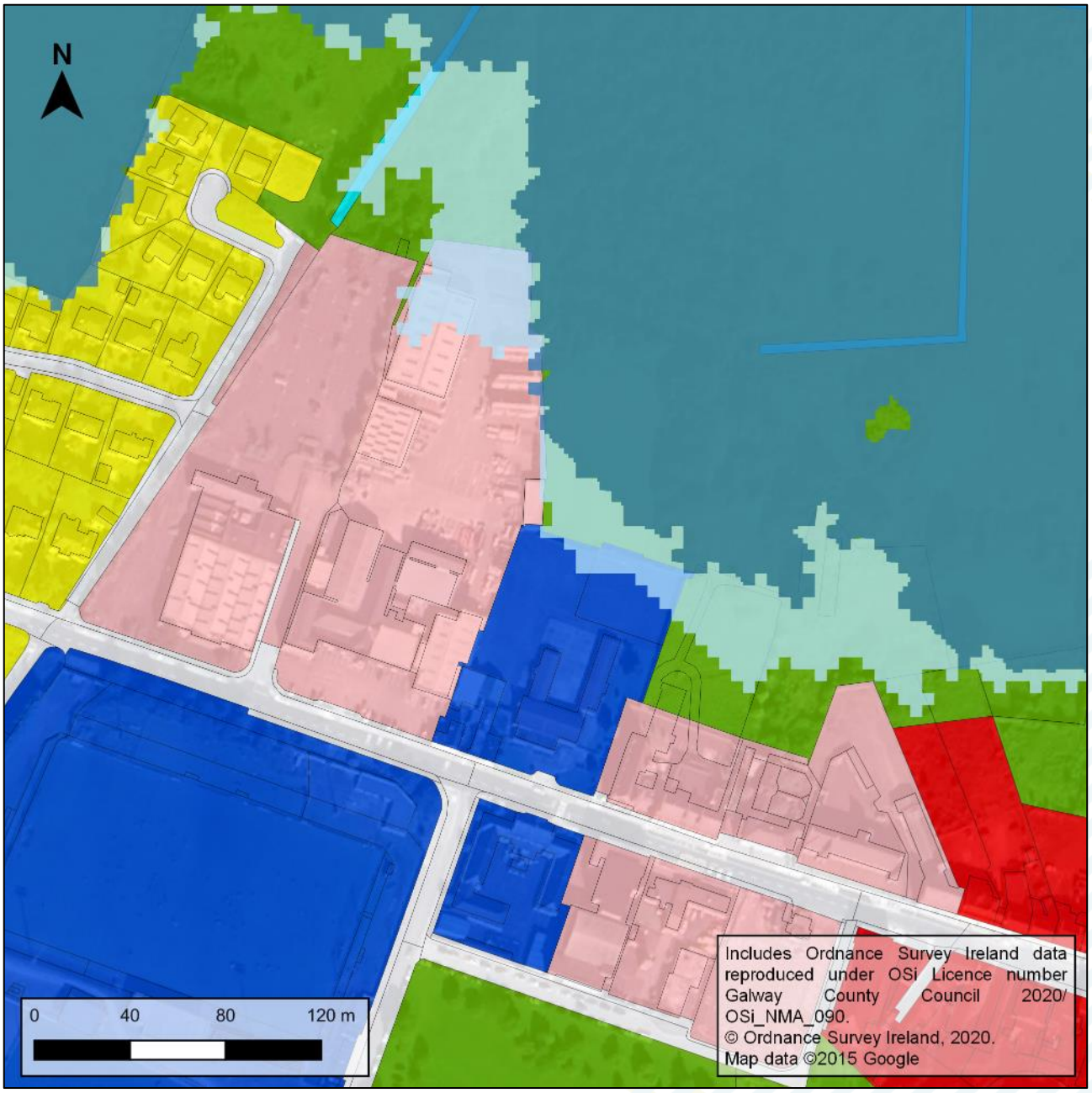


1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the

North of Sarsfield Road	
	higher order areas within the settlement hierarchy.
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:	Yes. The existing residential lands are located within the existing settlement boundary of the town and reflects where housing has been provided.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The lands zoned are existing residential lands within Ballinasloe's settlement boundary. The retention of existing residential zoning is essential to regeneration and vitality of the settlement and to retaining a strong and cohesive settlement development boundary. The type of developments envisaged to occur would include small scale developments such as such as domestic extensions and changes of use which do not increase risk of flooding. Change of use to a more vulnerable class would not be permitted. (Table 3.1 Classification of vulnerability of different types of development) The Planning System and Flood Risk Management Guidelines refers.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands comprise under-utilised lands and existing residential development.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are located within the settlement boundary of Ballinasloe identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. Retention of existing residential lands will maintain a strong and cohesive settlement. Any growth in this zoning will be limited to uses which do not increase flood risk.
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 zoning classification 'existing residential' is a unique category of zoning which reflects existing rather than proposed use. There are no alternative zoning categories on lands in lower risk of flooding within or adjoining the core that fulfils the same role as 'existing residential'.
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	There is limited overlap with Flood Zone A/B and the existing residential lands. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Development is constructed in accordance with the site specific FRAs. • Additional development in Flood Zones A/B should be limited to extensions, renovations and change of use. • Infill residential development and demolition

North of Sarsfield Road	
relevant flood risk assessment	and reconstruction can only take place in Flood Zone C. Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • FRA should address climate change scenarios in relation to FFLs and potential mitigation measures; • Residential FFLs should be above the 1% AEP level plus climate change and freeboard when extending existing residential property in Flood Zone A/B; • Bedrooms should be located in the upstairs of two-story buildings when extending existing property; • Flood resilient construction materials and fittings should be considered if in Flood Zone A/B; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.2.2 Commercial Mixed use



1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. Mixed use zoning in the town is required to achieve

particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	the proper planning and sustainable development of the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Mixed Use/Commercial uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Mixed Use/Commercial lands are situated with the settlement of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Other land use zoning categories adjoining the area of mixed use/commercial zoning.
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	There is limited overlap with Flood Zone A/B and the Community\Mixed Use lands. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. Any further development of the lands should be subject to an appropriately detailed FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach must be applied, and less vulnerable elements of the site should be located in Flood Zone B or preferably C; • Highly vulnerable development is only appropriate within Flood Zone C; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.2.3 Community Facilities

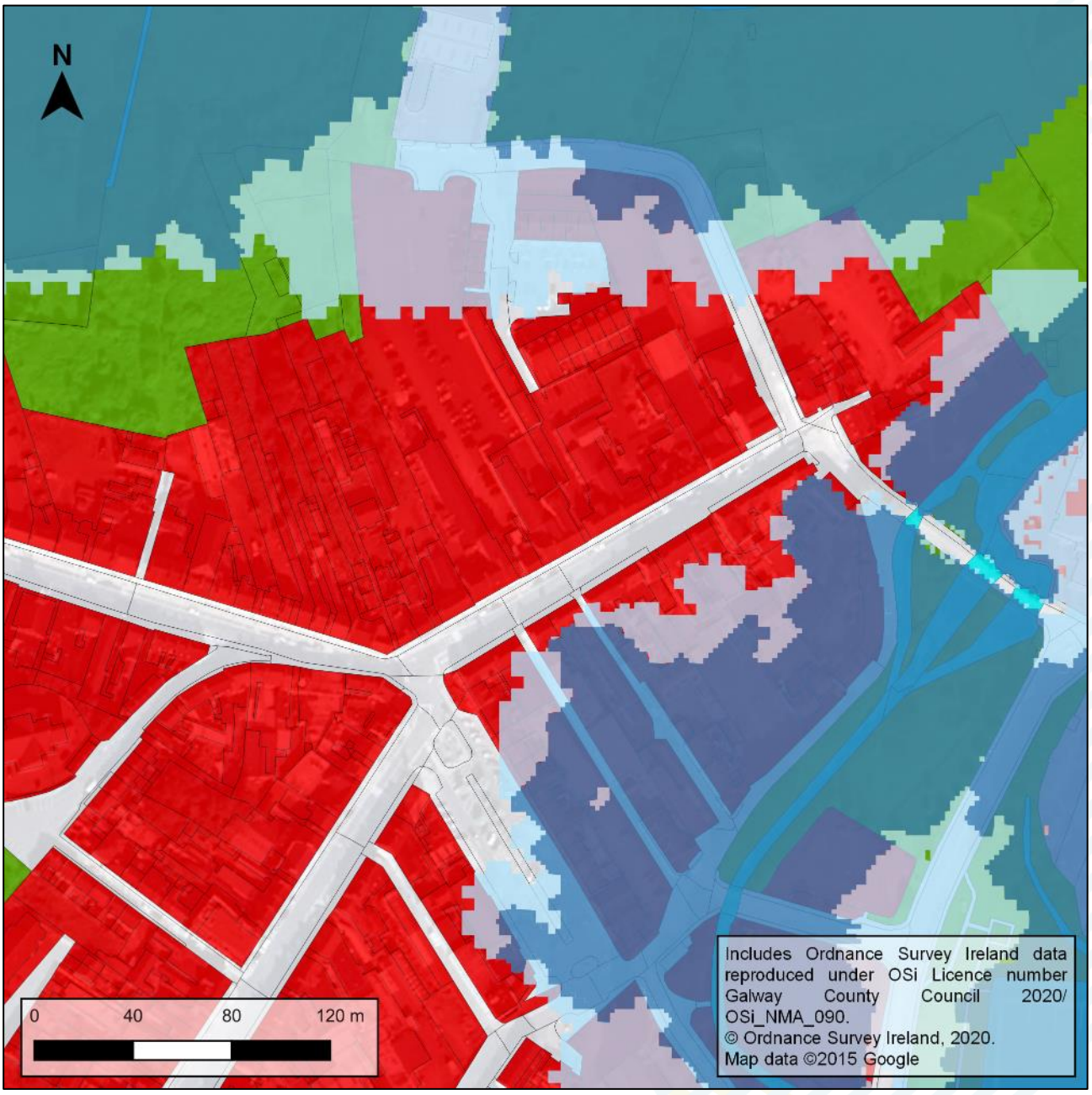
Scoil an Croí Naofa	
	
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. The zoning of these lands for Community Facilities is

Scoil an Croí Naofa	
particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	required to achieve the proper planning and sustainable development of Ballinasloe.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. Its zoning for these uses is essential to facilitate the continued regeneration of Ballinasloe.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are a mix of existing and undeveloped Community Facilities lands within the settlement boundary of Ballinasloe.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are wholly located within Ballinasloe, identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The lands for the proposed use are essential in achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	The lands are a mix of existing and undeveloped Community Facilities lands considered appropriate to retain the zoning within the settlement boundary of Ballinasloe.
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	There is limited overlap with Flood Zone B and the existing Community Facility lands. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning for Scoil an Croí Naofa. Any future expansion of the school be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach should be applied and extensions to the school building should be located in Flood Zone C; • Flood Zone A/B would principally be suitable for playing pitches/water compatible use only; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.3 Town Centre North

A.3.1 Town Centre

Town Centre North Lands



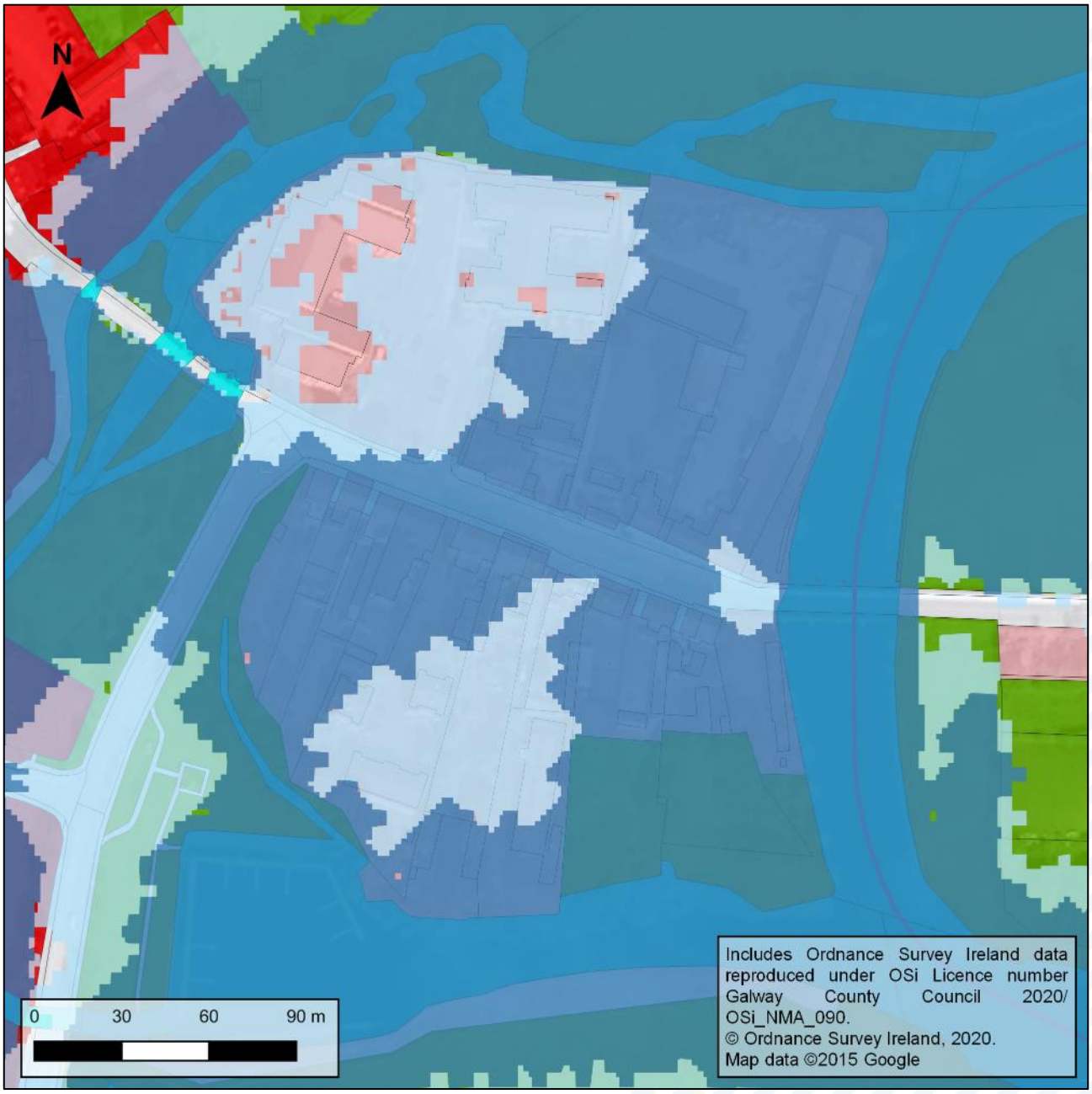
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the

Town Centre North Lands	
	higher order areas within the settlement hierarchy.
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:	Yes. Town centre use zoning in the town is required to achieve the proper planning and sustainable development of the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Town Centre uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Town Centre lands are situated within the Town Centre of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Other land use zoning categories adjoining the town centre do not permit the mix of uses that would normally be associated with the town centre, so there are no suitable alternative lands.
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	Parts of the Town Centre are within Flood Zone A/B. While most of the land is under existing development. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Within Flood Zone A/B development is limited to extensions, renovations and change of use. • Infill highly vulnerable development and demolition and reconstruction can only take place in Flood Zone C. • Less vulnerable development is appropriate within Flood Zone B. Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach should be applied and highly vulnerable infill and redevelopment shall not be permitted in Flood Zone A or B; • Infill highly vulnerable development and demolition and reconstruction can only take place in Flood Zone C until such a time as the Ballinasloe FRS has been constructed and the SFRA updated to apply the Justification Tests for any opportunity sites/significant redevelopment for such use.

Town Centre North Lands	
	• FRA should address climate change scenarios in relation to FFLs and potential mitigation measures; • Finished floor levels should be above the 1% AEP level plus climate change and freeboard; • Bedrooms should be located in the upstairs of two-story buildings when extending existing residential property in Flood Zone A/B; • Flood resilient construction materials and fittings should be considered if in Flood Zone A/B; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.3.2 Commercial Mixed use

Nursing Home and Other Commercial Mixed Use



1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. Mixed use zoning in the town is required to achieve

Nursing Home and Other Commercial Mixed Use	
particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	the proper planning and sustainable development of the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Mixed Use/Commercial uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Mixed Use/Commercial lands are situated with the settlement of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Other land use zoning categories adjoining the area of mixed use/commercial zoning
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	Most of the Commercial\Mixed Use lands are within Flood Zone A\B but limited to existing development. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Development is constructed in accordance with the site specific FRAs. • Additional development in Flood Zones A/B should be limited to extensions and renovations. • Infill highly vulnerable development or change of use to such use is not appropriate until such a time as the Ballinasloe FRS has been constructed and the SFRA updated to apply the Justification Tests for any opportunity sites/significant redevelopment for such use. Any further development of the lands should be subject to an appropriately detailed FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach must be applied, and less vulnerable elements of the site should be located in Flood Zone B or preferably C; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow

Nursing Home and Other Commercial Mixed Use	
	paths or cause flood risk impacts to the surrounding areas, and; • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.4 Town Centre South

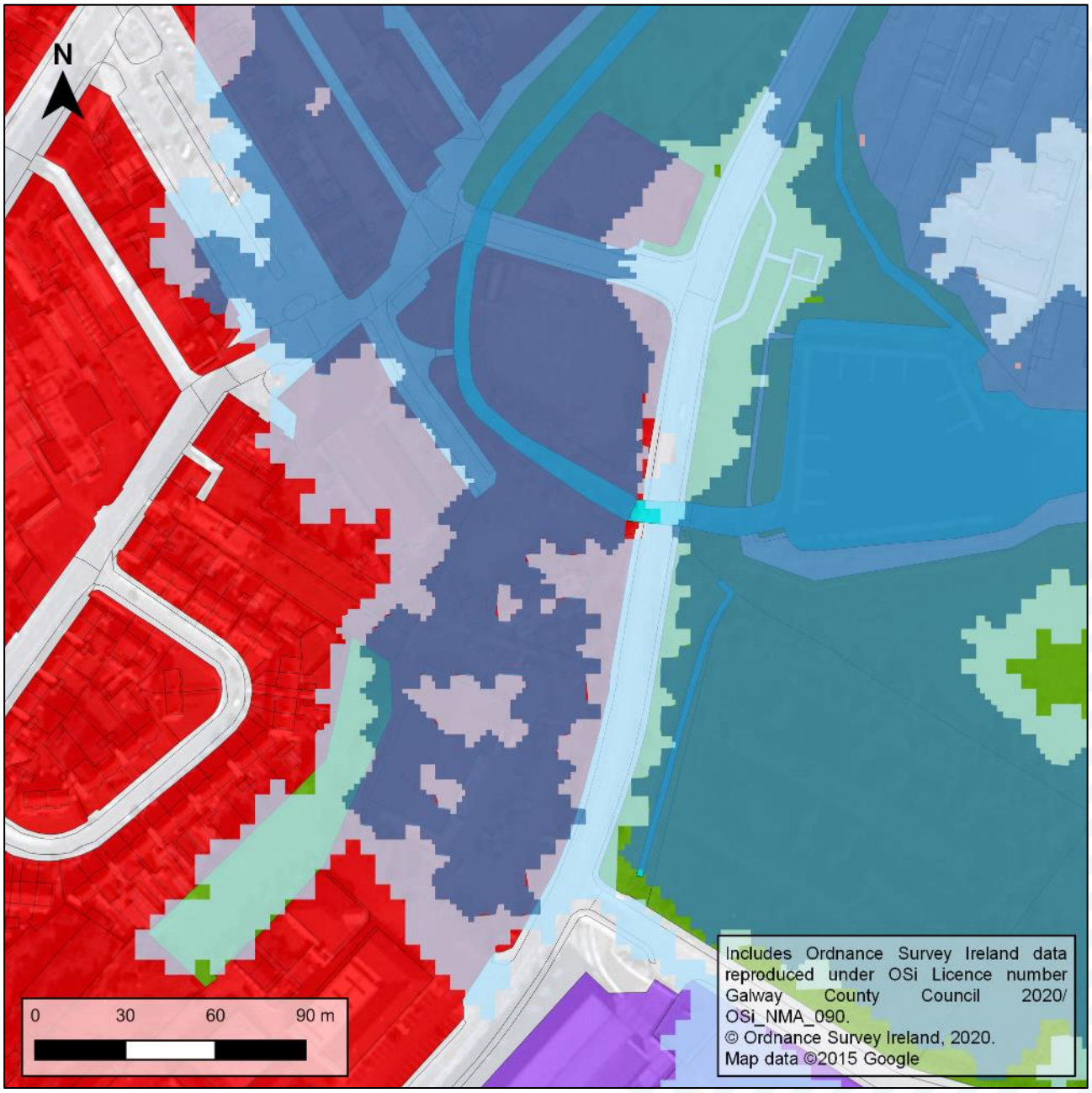
A.4.1 Existing Residential

1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the

	higher order areas within the settlement hierarchy.
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:	Yes. The existing residential lands are located within the existing settlement boundary of the town and reflects where housing has been provided.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The lands zoned are existing residential lands within Ballinasloe's settlement boundary. The retention of existing residential zoning is essential to regeneration and vitality of the settlement and to retaining a strong and cohesive settlement development boundary. The type of developments envisaged to occur would include small scale developments such as such as domestic extensions and changes of use which do not increase risk of flooding. Change of use to a more vulnerable class would not be permitted. (Table 3.1 Classification of vulnerability of different types of development) The Planning System and Flood Risk Management Guidelines refers.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands comprise under-utilised lands and existing residential development
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are located within the settlement boundary of Ballinasloe identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. Retention of existing residential lands will maintain a strong and cohesive settlement. Any growth in this zoning will be limited to uses which do not increase flood risk.
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 zoning classification 'existing residential' is a unique category of zoning which reflects existing rather than proposed use. There are no alternative zoning categories on lands in lower risk of flooding within or adjoining the core that fulfils the same role as 'existing residential'.
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	There is limited overlap with Flood Zone A/B and the Existing Residential lands. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Development is constructed in accordance with the site specific FRAs. • Additional development in Flood Zones A/B should be limited to extensions, renovations and change of use. • Infill residential development and demolition

relevant flood risk assessment	and reconstruction can only take place in Flood Zone C. Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • FRA should address climate change scenarios in relation to FFLs and potential mitigation measures; • Residential FFLs should be above the 1% AEP level plus climate change and freeboard; • Bedrooms should be located in the upstairs of two-story buildings when extending existing property; • Flood resilient construction materials and fittings should be considered if in Flood Zone A/B; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.4.2 Town Centre

Existing Town Centre South and Lidl	
	
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. Town centre use zoning in the town is required to

Existing Town Centre South and Lidl	
particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	achieve the proper planning and sustainable development of the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Town Centre uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Town Centre lands are situated within the Town Centre of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Other land use zoning categories adjoining the town centre do not permit the mix of uses that would normally be associated with the town centre, so there are no suitable alternative lands.
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	Part of the Town Centre are within Flood Zone A/B. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Within Flood Zone A/B development is limited to extensions, renovations and change of use. • Infill highly vulnerable development and demolition and reconstruction can only take place in Flood Zone C. Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach should be applied and highly vulnerable infill and redevelopment shall not be permitted in Flood Zone A or B; • Infill highly vulnerable development and demolition and reconstruction can only take place in Flood Zone C until such a time as the Ballinasloe FRS has been constructed and the SFRA updated to apply the Justification Tests for any opportunity sites/significant redevelopment for such use. • FRA should address climate change scenarios in relation to FFLs and potential mitigation measures; • Finished floor levels should be above the 1% AEP level plus climate change and freeboard;

Existing Town Centre South and Lidl	
	• Bedrooms should be located in the upstairs of two-story buildings when extending existing residential property in Flood Zone A/B; • Flood resilient construction materials and fittings should be considered if in Flood Zone A/B; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. • Any development shall also be required to be built in accordance with GCC SuDS Policy.

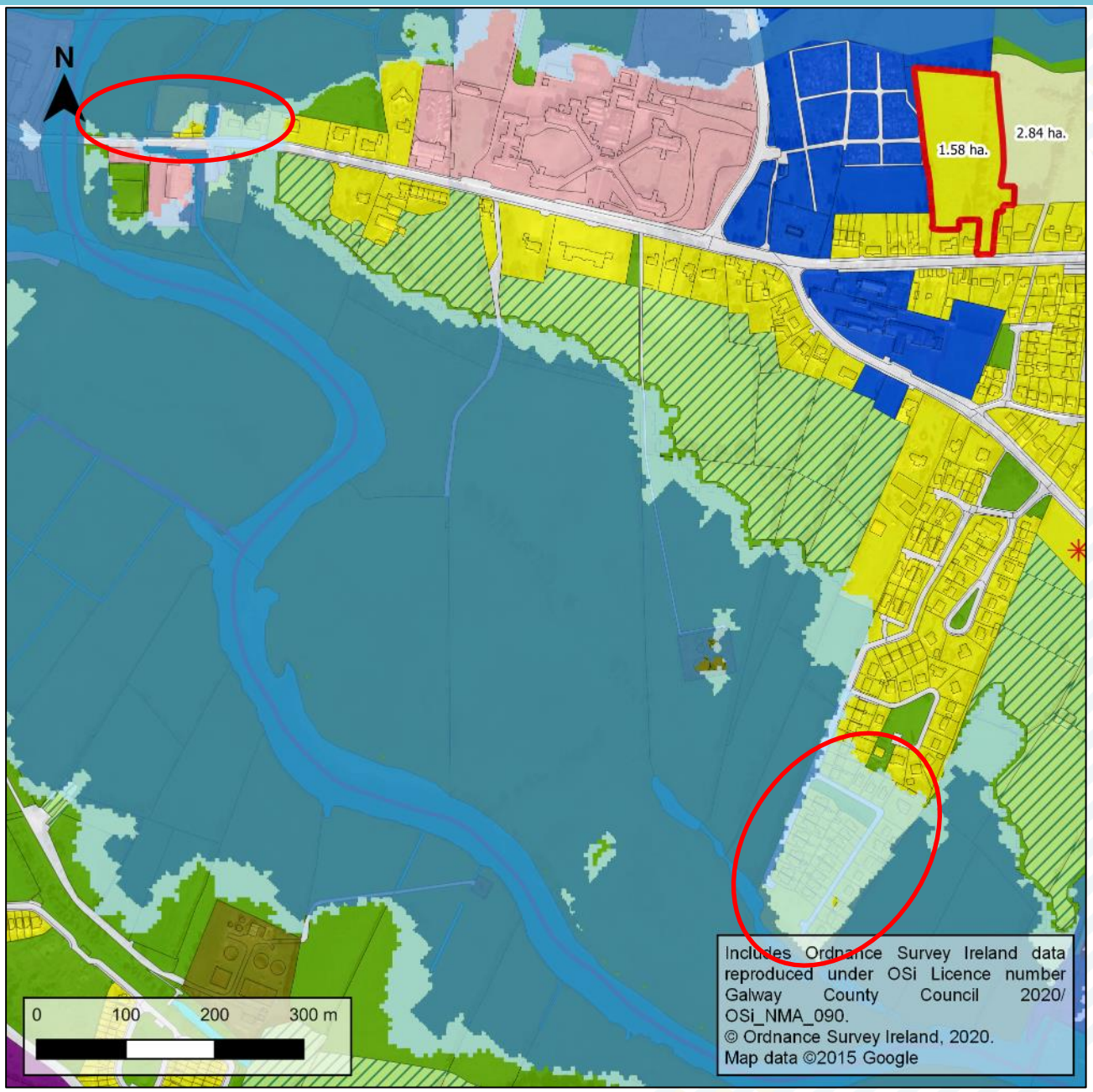
A.4.3 Commercial Mixed Use

Lands to the east of the Shearwater Hotel	
	
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. Mixed use zoning in the town is required to achieve

Lands to the east of the Shearwater Hotel	
particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	the proper planning and sustainable development of the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Mixed Use/Commercial uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Mixed Use/Commercial lands are situated with the settlement of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Other land use zoning categories adjoining the area of mixed use/commercial zoning.
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	There is limited overlap with Flood Zone A/B and the Community\Mixed Use lands. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. Any further development of the lands should be subject to an appropriately detailed FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach must be applied, and less vulnerable elements of the site should be located in Flood Zone B or preferably C; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.5 Ballinasloe East

A.5.1 Existing Residential



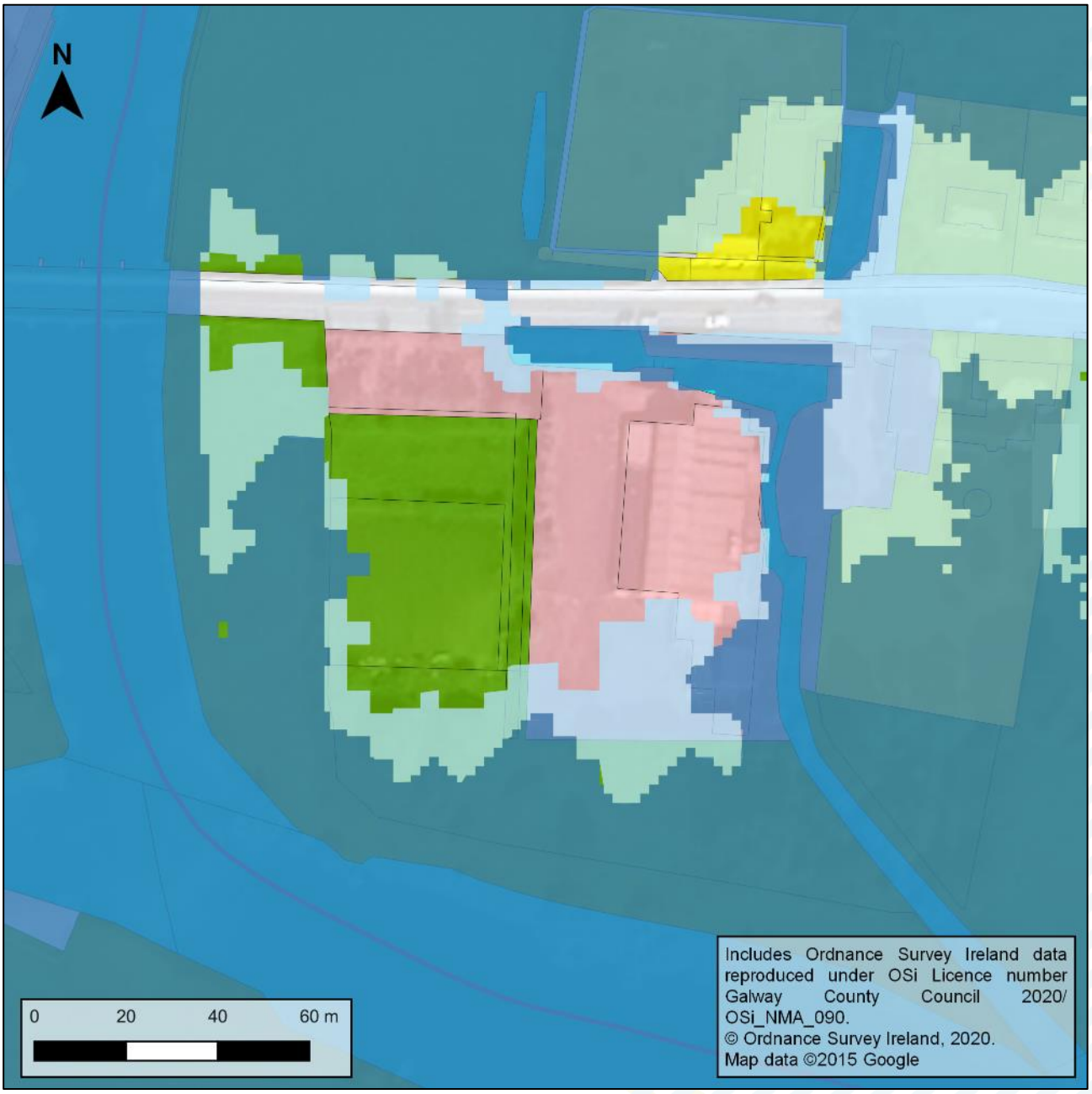
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher

	order areas within the settlement hierarchy.
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:	Yes. The existing residential lands are located within the existing settlement boundary of the town and reflects where housing has been provided.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The lands zoned are existing residential lands within Ballinasloe's settlement boundary. The retention of existing residential zoning is essential to regeneration and vitality of the settlement and to retaining a strong and cohesive settlement development boundary. The type of developments envisaged to occur would include small scale developments such as such as domestic extensions and changes of use which do not increase risk of flooding. Change of use to a more vulnerable class would not be permitted. (Table 3.1 Classification of vulnerability of different types of development) The Planning System and Flood Risk Management Guidelines refers.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands comprise under-utilised lands and existing residential development
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are located within the settlement boundary of Ballinasloe identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. Retention of existing residential lands will maintain a strong and cohesive settlement. Any growth in this zoning will be limited to uses which do not increase flood risk.
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 zoning classification 'existing residential' is a unique category of zoning which reflects existing rather than proposed use. There are no alternative zoning categories on lands in lower risk of flooding within or adjoining the core that fulfils the same role as 'existing residential'.
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	There is limited overlap with Flood Zone A and the Existing Residential lands with most of the lands at risk residing in Flood Zone B. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Development is constructed in accordance with the site specific FRAs. • Additional development in Flood Zones A/B should be limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood

assessment	Zone C. Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • FRA should address climate change scenarios in relation to FFLs and potential mitigation measures; • Residential FFLs should be above the 1% AEP level plus climate change and freeboard; • Bedrooms should be located in the upstairs of two-story buildings when extending existing property; • Flood resilient construction materials and fittings should be considered if in Flood Zone A/B; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.5.2 Commercial Mixed Use

Auto Service Yard

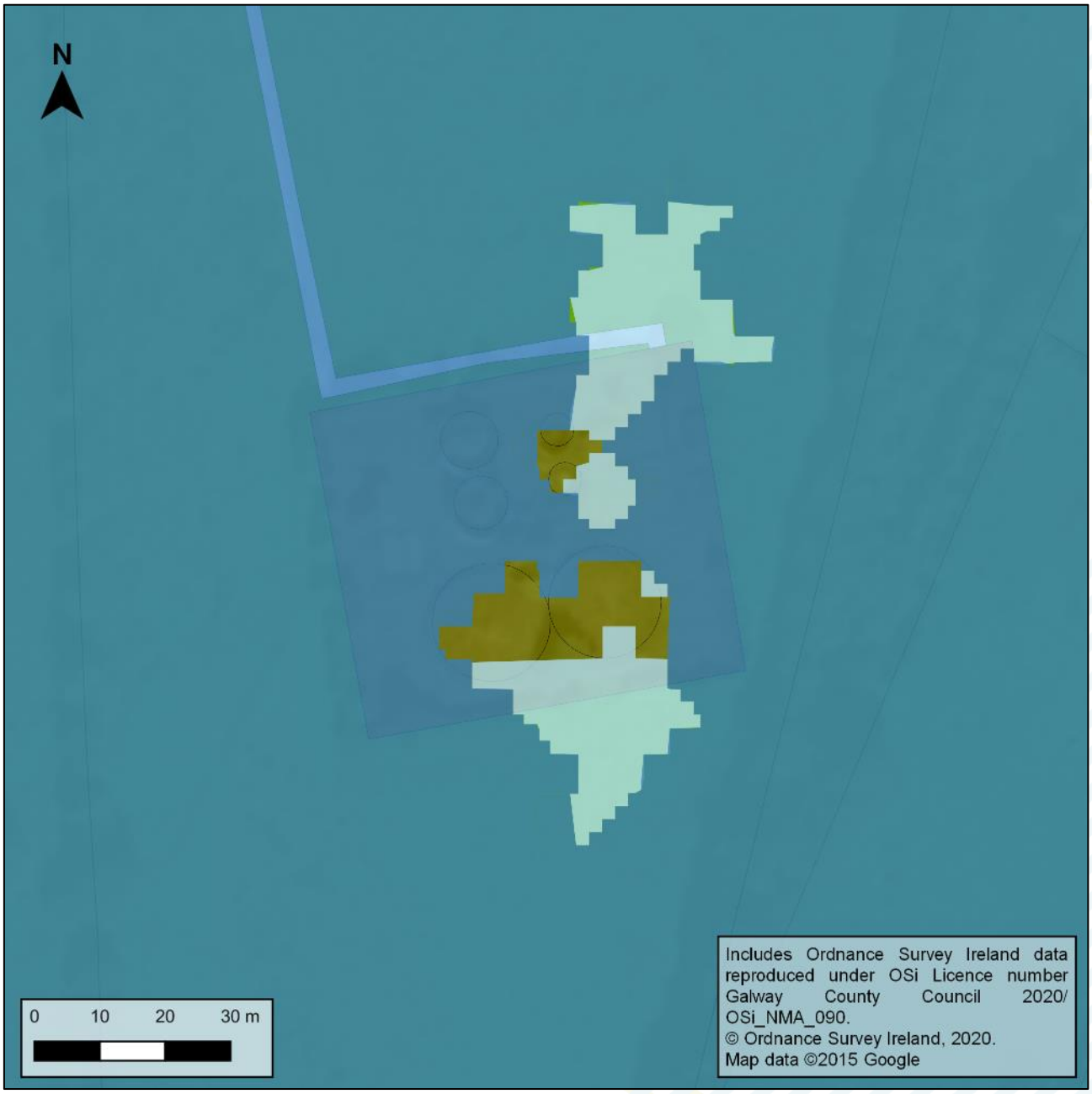


1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. Mixed use zoning in the town is required to achieve

Auto Service Yard	
particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	the proper planning and sustainable development of the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Mixed Use/Commercial uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Mixed Use/Commercial lands are situated with the settlement of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Other land use zoning categories adjoining the village centre do not permit the mix of uses that would normally be associated with the village centre, so there are no suitable alternative lands.
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	There is limited overlap with Flood Zone A/B and the Commercial\Mixed Use lands comprising of an auto services yard. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. Any further development of the lands should be subject to an appropriately detailed FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach must be applied, and less vulnerable elements of the site should be located in Flood Zone B or preferably C; • Highly vulnerable development would only be suitable in Flood Zone C. • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.5.3 Public Utility

Wastewater Facility (Pumping Station)

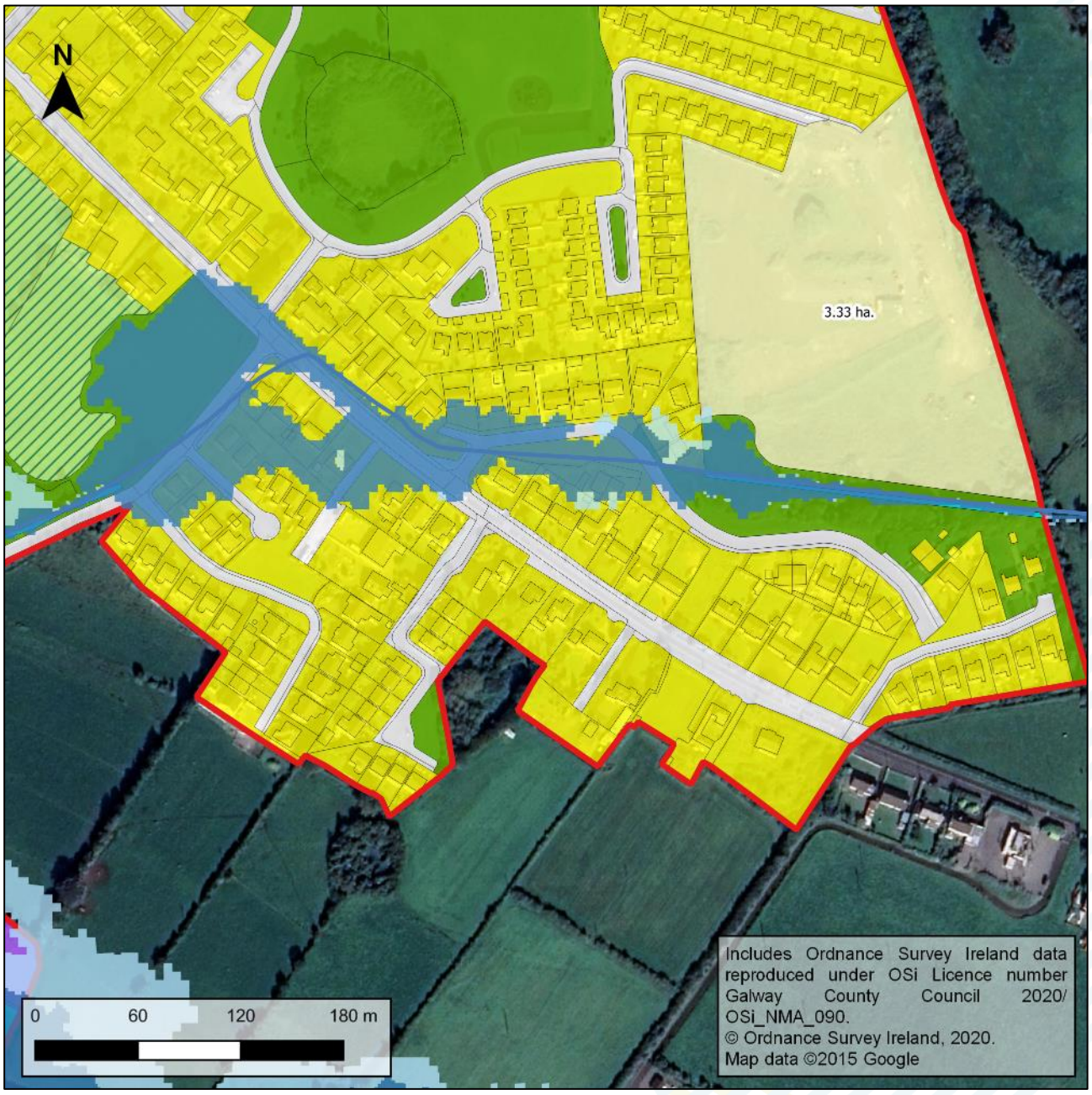


1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the particular use or development type is	Yes. Public utilities zoning in the town is required to achieve the proper planning and sustainable development of the urban

Wastewater Facility (Pumping Station)	
required to achieve the proper planning and sustainable development of the urban settlement and in particular:	settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality in the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Public Utilities infrastructure.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Public Utilities lands are situated within the settlement of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	The Public Utilities zoning provides particular supporting infrastructure to the town. It is therefore appropriate to retain the Public Utilities zonings as set out in the Draft Local Area Plan.
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	A significant area of existing Public Utility Lands are within Flood Zone A\B. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. Any future expansion of the existing public utility should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • The sequential approach should be applied and highly vulnerable elements of the site should be located in Flood Zone C, or raised/bunded/protected; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.6 Moycarn

A.6.1 Existing Residential

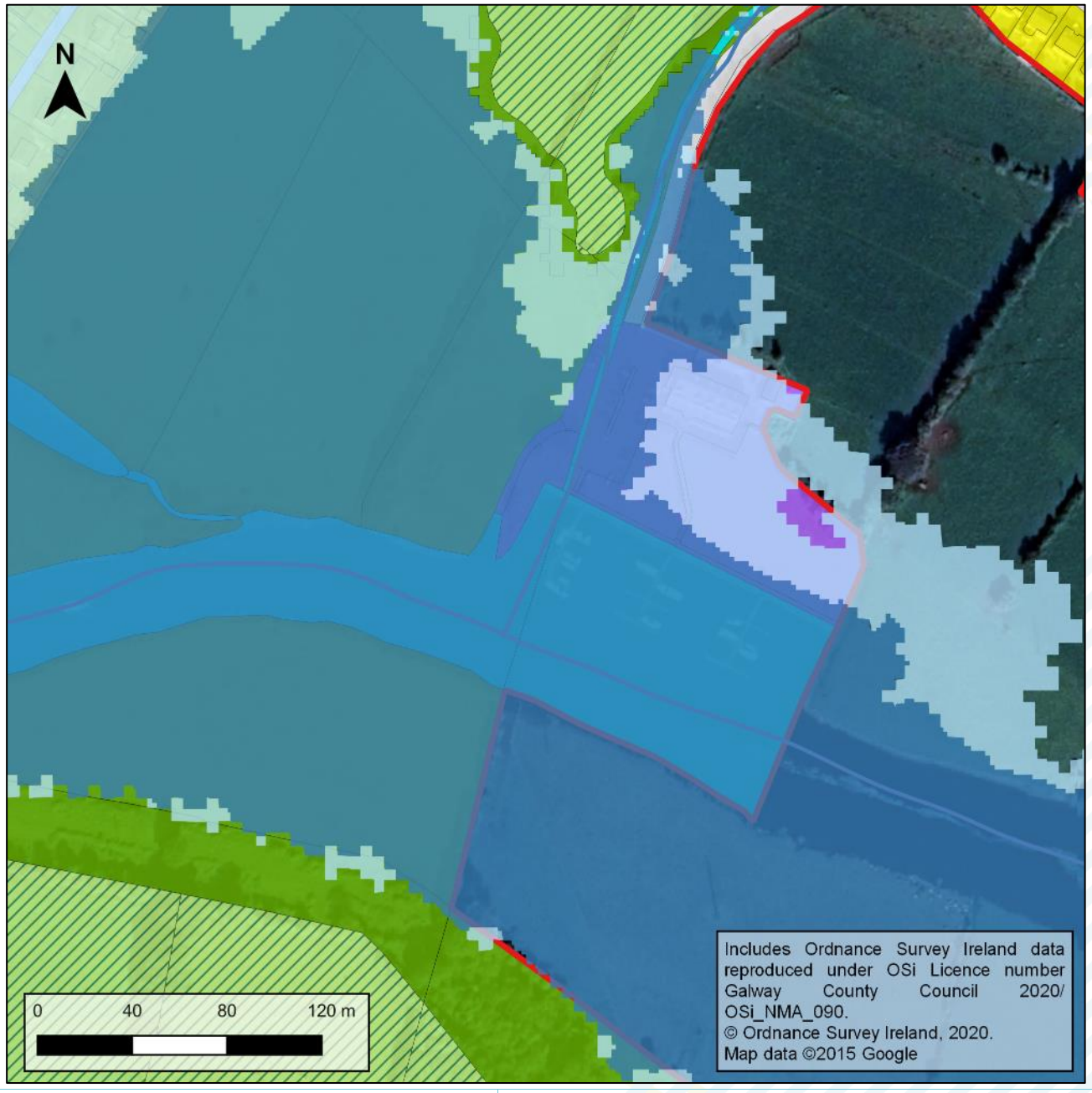


1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the

	higher order areas within the settlement hierarchy.
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:	Yes. The existing residential lands are located within the existing settlement boundary of the town and reflects where housing has been provided.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The lands zoned are existing residential lands within Ballinasloe's settlement boundary. The retention of existing residential zoning is essential to regeneration and vitality of the settlement and to retaining a strong and cohesive settlement development boundary. The type of developments envisaged to occur would include small scale developments such as such as domestic extensions and changes of use which do not increase risk of flooding. Change of use to a more vulnerable class would not be permitted. (Table 3.1 Classification of vulnerability of different types of development) The Planning System and Flood Risk Management Guidelines refers.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands comprise under-utilised lands and existing residential development.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are located within the settlement boundary of Ballinasloe identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. Retention of existing residential lands will maintain a strong and cohesive settlement. Any growth in this zoning will be limited to uses which do not increase flood risk.
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 zoning classification 'existing residential' is a unique category of zoning which reflects existing rather than proposed use. There are no alternative zoning categories on lands in lower risk of flooding within or adjoining the core that fulfils the same role as 'existing residential'.
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	There is a significant area of existing residential development at potential risk. Some of this risk is within gardens and open space. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Development is constructed in accordance with the site specific FRAs. • Additional development in Flood Zones A/B should be limited to extensions, renovations and change of use.

relevant flood risk assessment	• Infill residential development and demolition and reconstruction can only take place in Flood Zone C. Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • FRA should address climate change scenarios in relation to FFLs and potential mitigation measures; • Residential FFLs should be above the 1% AEP level plus climate change and freeboard; • Bedrooms should be located in the upstairs of two-story buildings when extending existing property; • Flood resilient construction materials and fittings should be considered if in Flood Zone A/B; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.6.2 Tourism

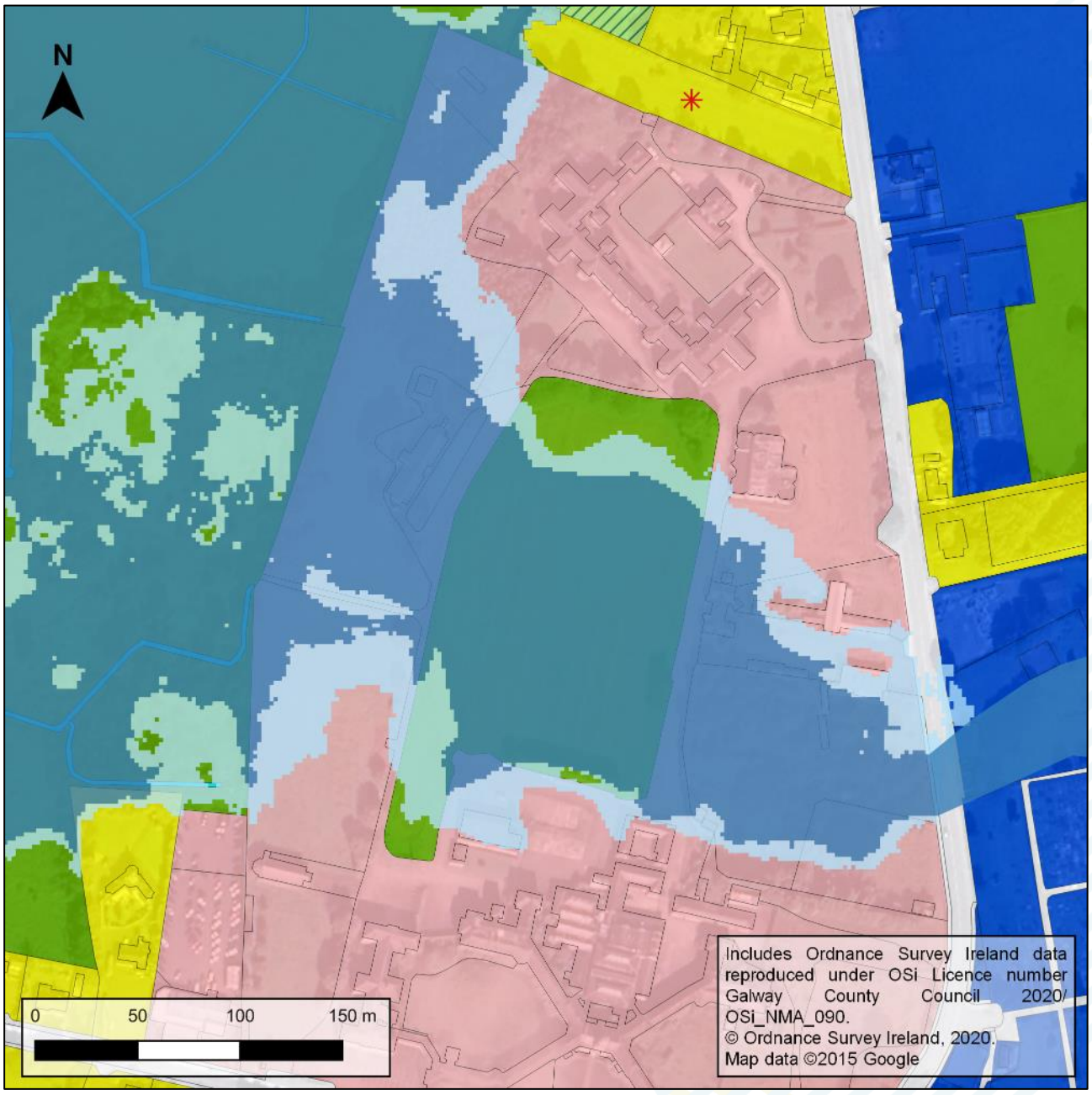
Existing Hotel and Marina	
	
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. Tourism zoning in the town is required to achieve the

Existing Hotel and Marina	
particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	proper planning and sustainable development of the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Tourism uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Tourism lands are situated with the settlement of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Alternative sites within the settlement have the same level of flood risk. A significant re-development of the lands should be subject to a Stage 3 detailed FRA which should follow the general guidance set out in the SFRA.
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	An existing hotel and marina lie within Flood Zone A\B. The hotel building itself lies within Flood Zone B while the marina is water compatible and fully within Flood Zone A. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning for this site. Any further development of the lands should be subject to an appropriately detailed FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • Flood Zone A would principally be suitable for water compatible use only; • Bedrooms should be located in the upstairs of the hotel building when extending existing development within Flood Zone B; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.7 St. Brigid's hospital

A.7.1 Commercial Mixed Use

St. Brigid's Hospital



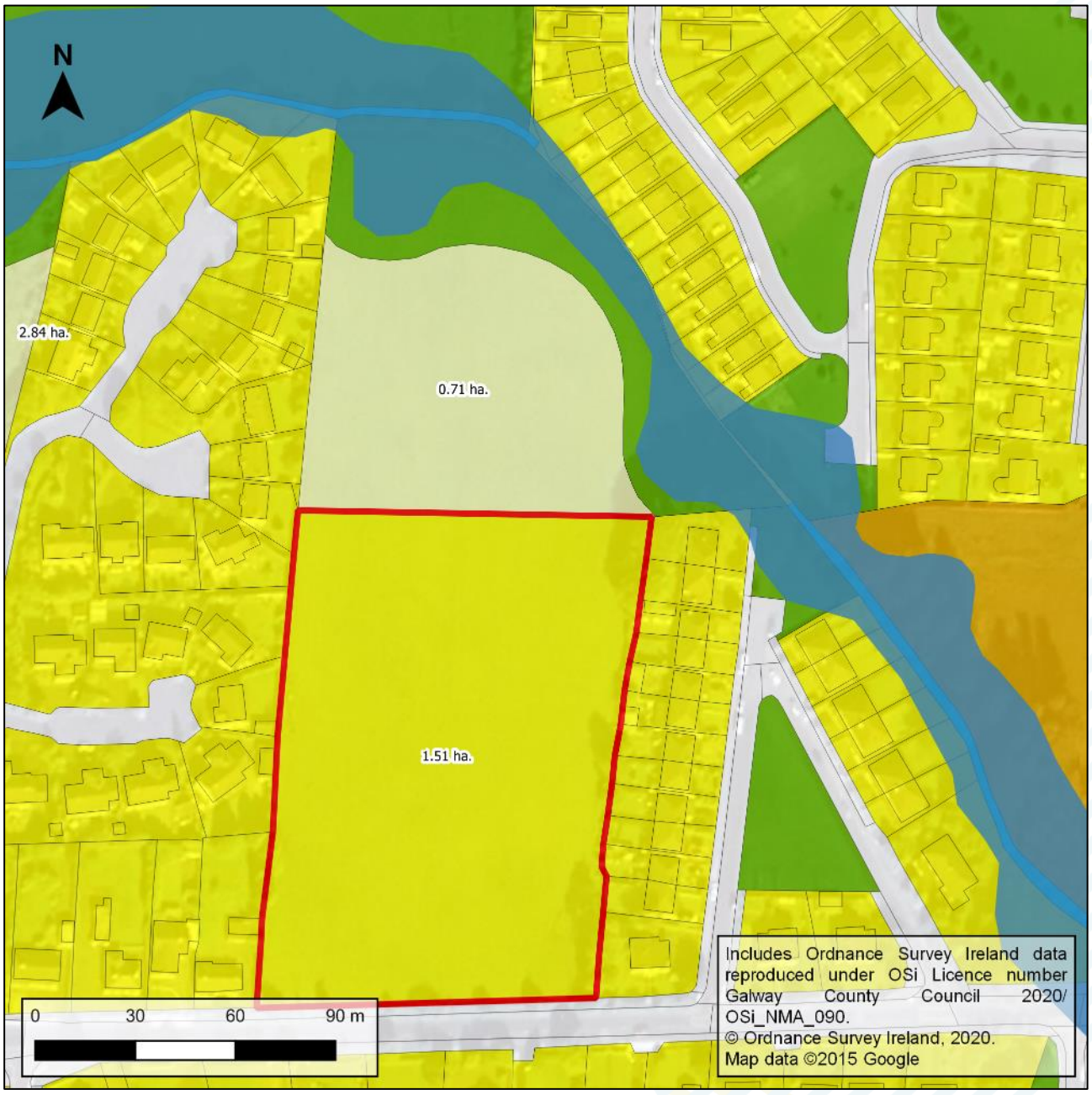
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the

St. Brigid's Hospital	
	higher order areas within the settlement hierarchy.
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:	Yes. Mixed use/Commercial zoning in the town is required to achieve the proper planning and sustainable development of the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Mixed Use/Commercial uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Mixed Use/Commercial lands are situated within the settlement of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Other land use zoning categories adjoining the village centre do not permit the mix of uses that would normally be associated with the village centre, so there are no suitable alternative lands.
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	There are large parts of these lands overlapping with Flood Zone A\B with amenity central to the development. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; Any further development or redevelopment of the lands should be subject to an appropriately detailed FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • Residential redevelopment and any demolition and reconstruction can only take place in Flood Zone C. • Less vulnerable development can take place in Flood Zone B. • Areas within Flood Zone A/B (for highly vulnerable development) and Flood Zone A (for less vulnerable development) should not be developed until after the Ballinasloe Flood Relief Scheme is completed and an amendment to the SFRA has been undertaken to apply the Justification Test for the particular use. • Any development shall also be required to be built in accordance with GCC SuDS Policy.

A.8 St Brigid's to Dubarry Area

A.8.1 Existing Residential

Glentaun



1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher

Glentaun	
	order areas within the settlement hierarchy.
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:	Yes. The existing residential lands are located within the existing settlement boundary of the town and reflects where housing has been provided.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The lands zoned are existing residential lands within Ballinasloe's settlement boundary. The retention of existing residential zoning is essential to regeneration and vitality of the settlement and to retaining a strong and cohesive settlement development boundary. The type of developments envisaged to occur would include small scale developments such as such as domestic extensions and changes of use which do not increase risk of flooding. Change of use to a more vulnerable class would not be permitted. (Table 3.1 Classification of vulnerability of different types of development) The Planning System and Flood Risk Management Guidelines refers.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands comprise under-utilised lands and existing residential development.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are located within the settlement boundary of Ballinasloe identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. Retention of existing residential lands will maintain a strong and cohesive settlement. Any growth in this zoning will be limited to uses which do not increase flood risk.
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 zoning classification 'existing residential' is a unique category of zoning which reflects existing rather than proposed use. There are no alternative zoning categories on lands in lower risk of flooding within or adjoining the core that fulfils the same role as 'existing residential'.
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	There is limited overlap with Flood Zone A/B and the existing residential lands. Most of the lands within Flood Zone A\B is comprised of gardens and open space. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. This is on the basis that; • Development is constructed in accordance with the site specific FRAs. • Additional development in Flood Zones A/B should be limited to extensions, renovations and change of use. • Infill residential development and demolition and reconstruction can only take place in Flood

Glentaun	
	Zone C. Any future development should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • Existing flood data is indicative and does not provide flood levels. An appropriately detailed hydraulic model will be required to confirm flood levels and extents. • FRA should address climate change scenarios in relation to FFLs and potential mitigation measures; • Residential FFLs should be above the 1% AEP level plus climate change and freeboard; • Bedrooms should be located in the upstairs of two-story buildings when extending existing property confirmed as within Flood Zone A/B; • Flood resilient construction materials and fittings should be considered if in Flood Zone A/B; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and; • Any development shall also be required to be built in accordance with GCC SuDS Policy.

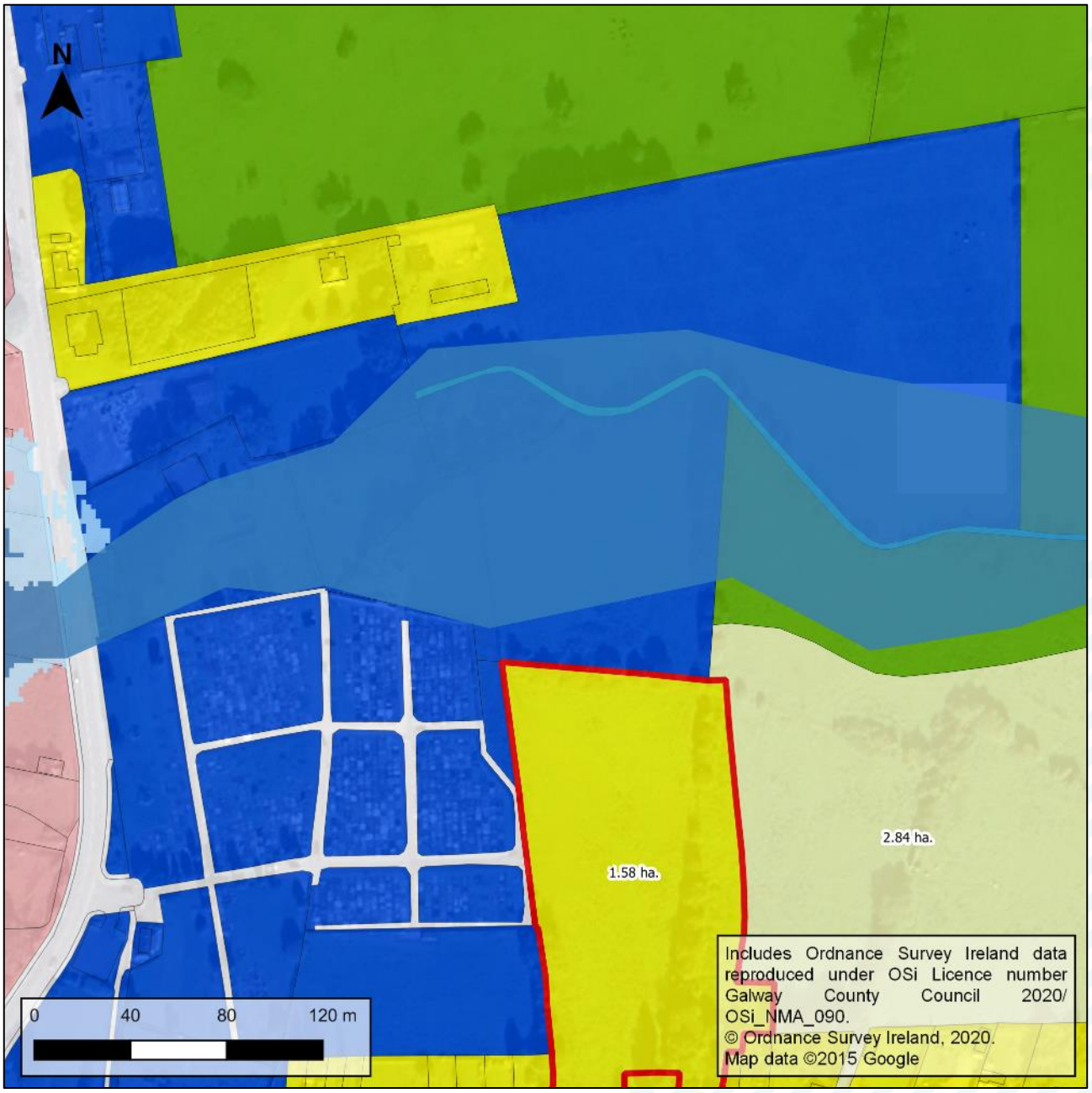
A.8.2 Business and Enterprise

Dubarry Factory	
	
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the particular use or development type is	Yes. Business and Enterprise zoning in the town is required to achieve the proper planning and sustainable development of

Dubarry Factory	
required to achieve the proper planning and sustainable development of the urban settlement and in particular:	the urban settlement.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. The zoning is essential to facilitate regeneration and vitality of the settlement.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are previously developed and contain Business and Enterprise uses.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The Business and Enterprise lands are situated with the settlement of Ballinasloe.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The zoning is essential to achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Alternative sites within the settlement have the same level of flood risk. A significant re-development of the lands should be subject to a Stage 3 detailed FRA which should follow the general guidance set out in the SFRA.
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	Existing General Business and Enterprise lands are partly within the Flood Zone A/B extent. The lands within the extent are limited to open space and all buildings are currently located in Flood Zone C. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. Any further development of the lands should be subject to an appropriately detailed FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • Existing flood data is indicative and does not provide flood levels. An appropriately detailed hydraulic model will be required to confirm flood levels and extents. • For new development the sequential approach must be applied and less vulnerable elements of the site should be located in Flood Zone B or preferably C; • For existing development/redevelopment then the site specific FRA should specify how risk will be managed; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and;

Dubarry Factory	
	• Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. • Any development shall also be required to be built in accordance with GCC SuDS Policy.

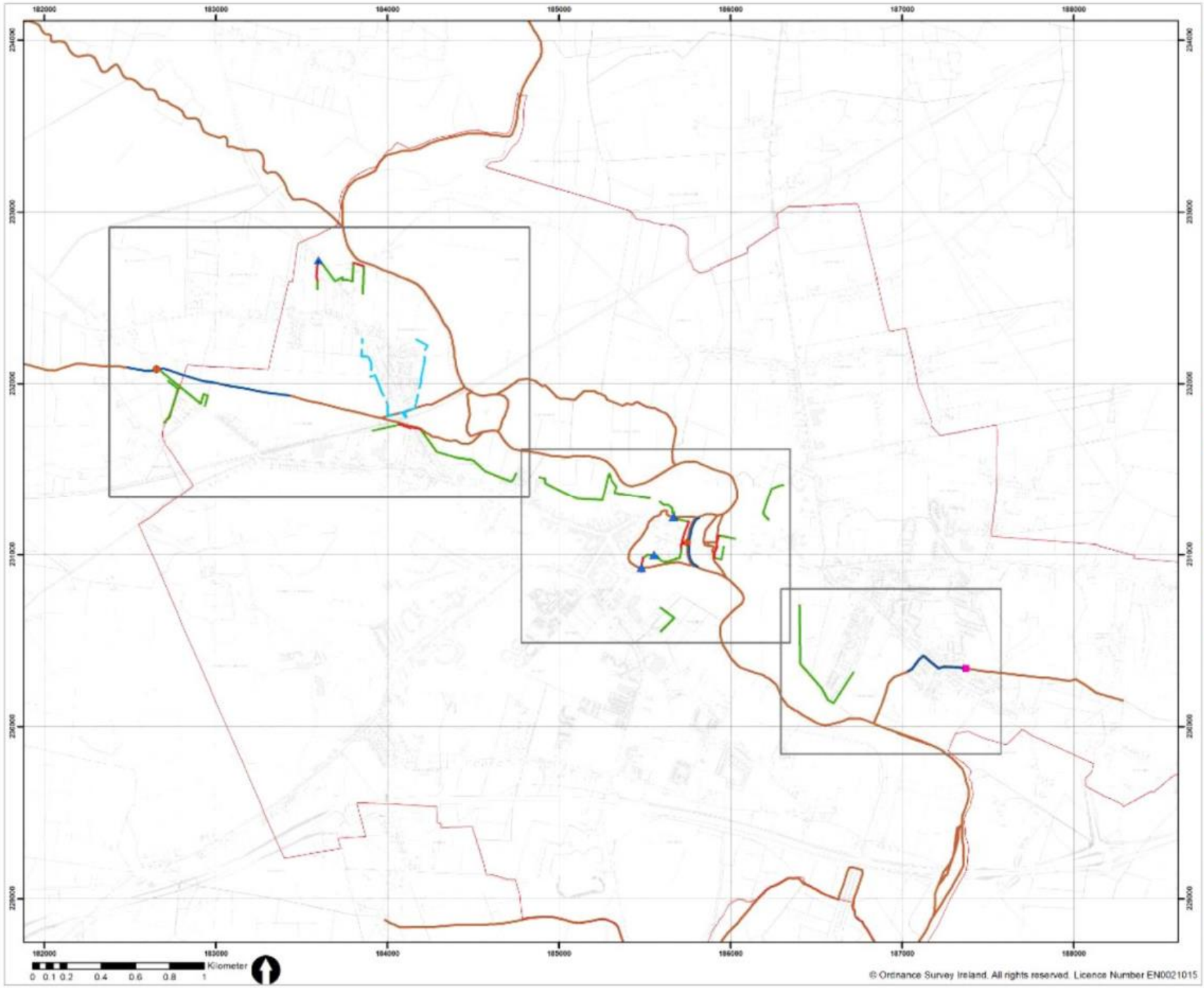
A.8.3 Community Facilities

Cemetery	
	
1. The urban settlement is targeted for growth under the National Planning Framework, Regional Spatial and Economic Strategy (RSES), statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act, 2000, as amended.	Yes. Ballinasloe is identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy. *Key Towns* are defined as towns that are regionally strategic employment centres of significant scale that can act as regional drivers that complement and support the higher order areas within the settlement hierarchy.
2. The zoning or designation of the lands for the	Yes. The zoning of these lands for Community Facilities is

Cemetery	
particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement and in particular:	required to achieve the proper planning and sustainable development of Ballinasloe.
i. Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement	Yes. Its zoning for these uses is essential to facilitate the continued regeneration of Ballinasloe.
ii. Comprises significant previously developed and/or underutilised lands,	Yes. The lands are a mix of existing and undeveloped Community Facilities lands within the settlement boundary of Ballinasloe.
iii. Is within or adjoining the core of an established or designated urban settlement,	Yes. The lands are wholly located within Ballinasloe, identified as a *Key Town* in the Galway County Development Plan 2022 – 2028 settlement hierarchy.
iv. Will be essential in achieving compact and sustainable urban growth, and	Yes. The lands for the proposed use are essential in achieving compact and sustainable urban growth.
v. There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	The lands are a mix of existing and undeveloped Community Facilities lands considered appropriate to retain the zoning within the settlement boundary of Ballinasloe.
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	A significant area of the Community Facilities lands lies within Flood Zone A\B. These lands are comprised of an existing cemetery and is considered water compatible. Parts 1 & 2 of the test found that it is considered appropriate to retain the existing zoning. Any future development of the Community Facilities land should be subject to an FRA which should follow the general guidance provided in Section 7 of the SFRA and must specifically address the following: • Existing flood data is indicative and does not provide flood levels. An appropriately detailed hydraulic model will be required to confirm flood levels and extents. • The sequential approach should be applied and highly vulnerable elements of development should be located in Flood Zone C, less vulnerable is appropriate within Flood Zone B; • Flood Zone A would principally be suitable for playing pitches/water compatible use only; • FRA should address climate change scenarios in relation to operational levels and potential mitigation measures; • Proposals should not impede existing flow paths or cause flood risk impacts to the surrounding areas, and;

Cemetery	
	• Emergency evacuation plan and defined access / egress routes should be developed for extreme flood events. • Any development shall also be required to be built in accordance with GCC SuDS Policy.

Appendix B – CFRAM recommendations for potentially viable flood relief works



Legend

- AFA Boundary
- River Centreline

Potential Measures

- Structure Enhancement
- Structure Replacement
- Property Relocation
- Pump
- Flood Gate
- Flapped Outfall
- Replace Culvert
- Weir
- Existing Defence
- Raise Existing Defences
- Embankment
- Wall
- Existing Diversion
- Flow Diversion
- Channel Maintenance
- Increase Conveyance
- Raise Road
- Storage Area

IMPORTANT USER NOTE
This outline plan provides the indicative details of a potential flood risk management option developed for the Shannon CFRAM Study. The information provided is suitable as a concept design ONLY and will need to be reviewed before commencement of any detailed design phase.

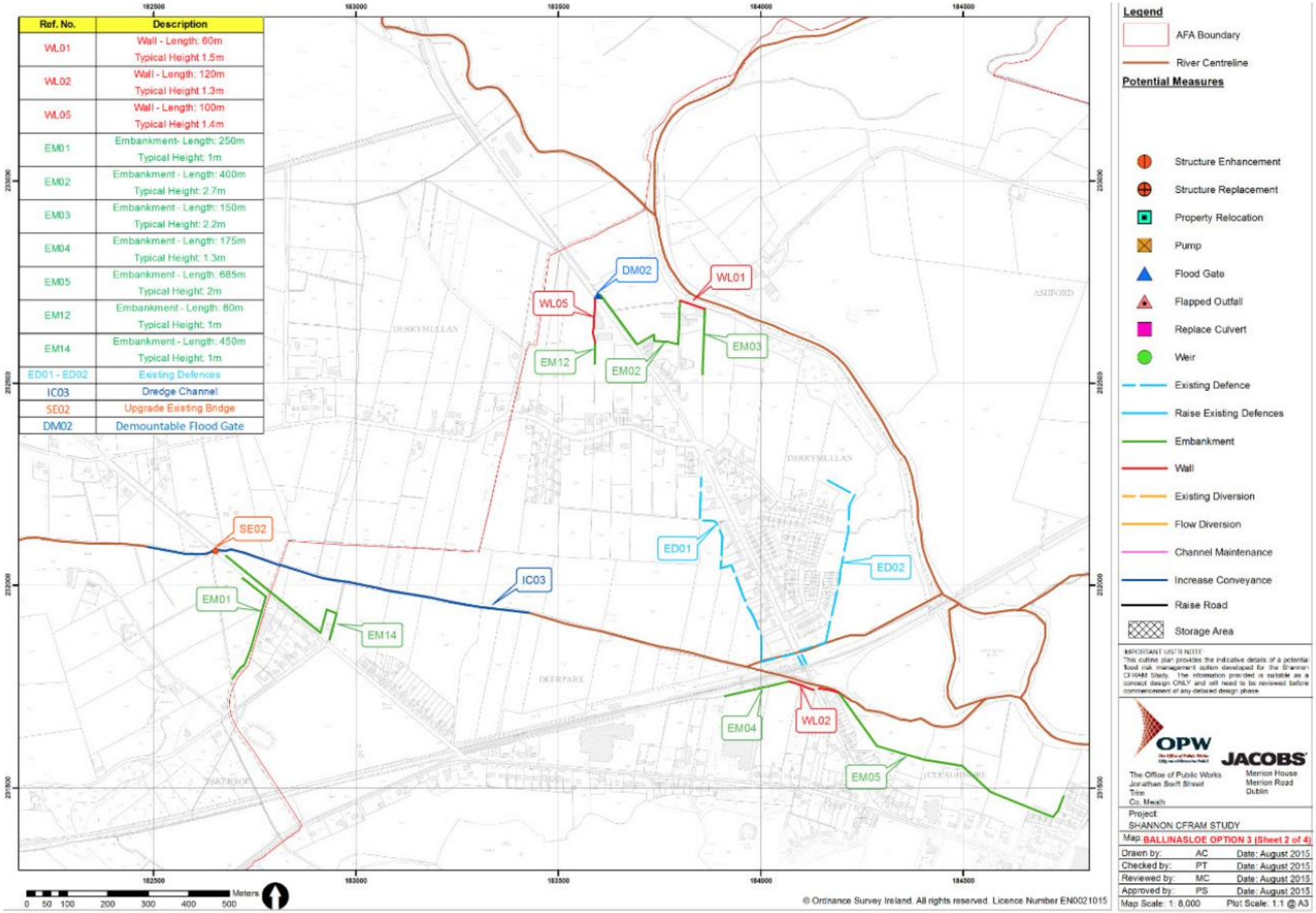
OPW
The Office of Public Works
Jonathan Swift Street
Trim
Co. Meath

JACOBS
Merrion House
Merrion Road
Dublin

Project:
SHANNON CFRAM STUDY

Map **BALLINASLOE OPTION 3 (Sheet 1 of 4)**

Drawn by:	AC	Date: August 2015
Checked by:	PT	Date: August 2015
Reviewed by:	MC	Date: August 2015
Approved by:	PS	Date: August 2015
Map Scale: 1: 20,000		Plot Scale: 1:1 @ A3



Ref. No.	Description
WL01	Wall - Length: 60m Typical Height 1.5m
WL02	Wall - Length: 120m Typical Height 1.3m
WL05	Wall - Length: 100m Typical Height 1.4m
EM01	Embankment- Length: 250m Typical Height: 1m
EM02	Embankment - Length: 400m Typical Height: 2.7m
EM03	Embankment - Length: 150m Typical Height: 2.2m
EM04	Embankment - Length: 175m Typical Height: 1.3m
EM05	Embankment - Length: 685m Typical Height: 2m
EM12	Embankment - Length: 60m Typical Height: 1m
EM14	Embankment - Length: 450m Typical Height: 1m
ED01 - ED02	Existing Defences
IC03	Dredge Channel
SE02	Upgrade Existing Bridge
DM02	Demountable Flood Gate

Legend

- AFA Boundary
- River Centreline

Potential Measures

- Structure Enhancement
- Structure Replacement
- Property Relocation
- Pump
- Flood Gate
- Flapped Outfall
- Replace Culvert
- Weir
- Existing Defence
- Raise Existing Defences
- Embankment
- Wall
- Existing Diversion
- Flow Diversion
- Channel Maintenance
- Increase Conveyance
- Raise Road
- Storage Area

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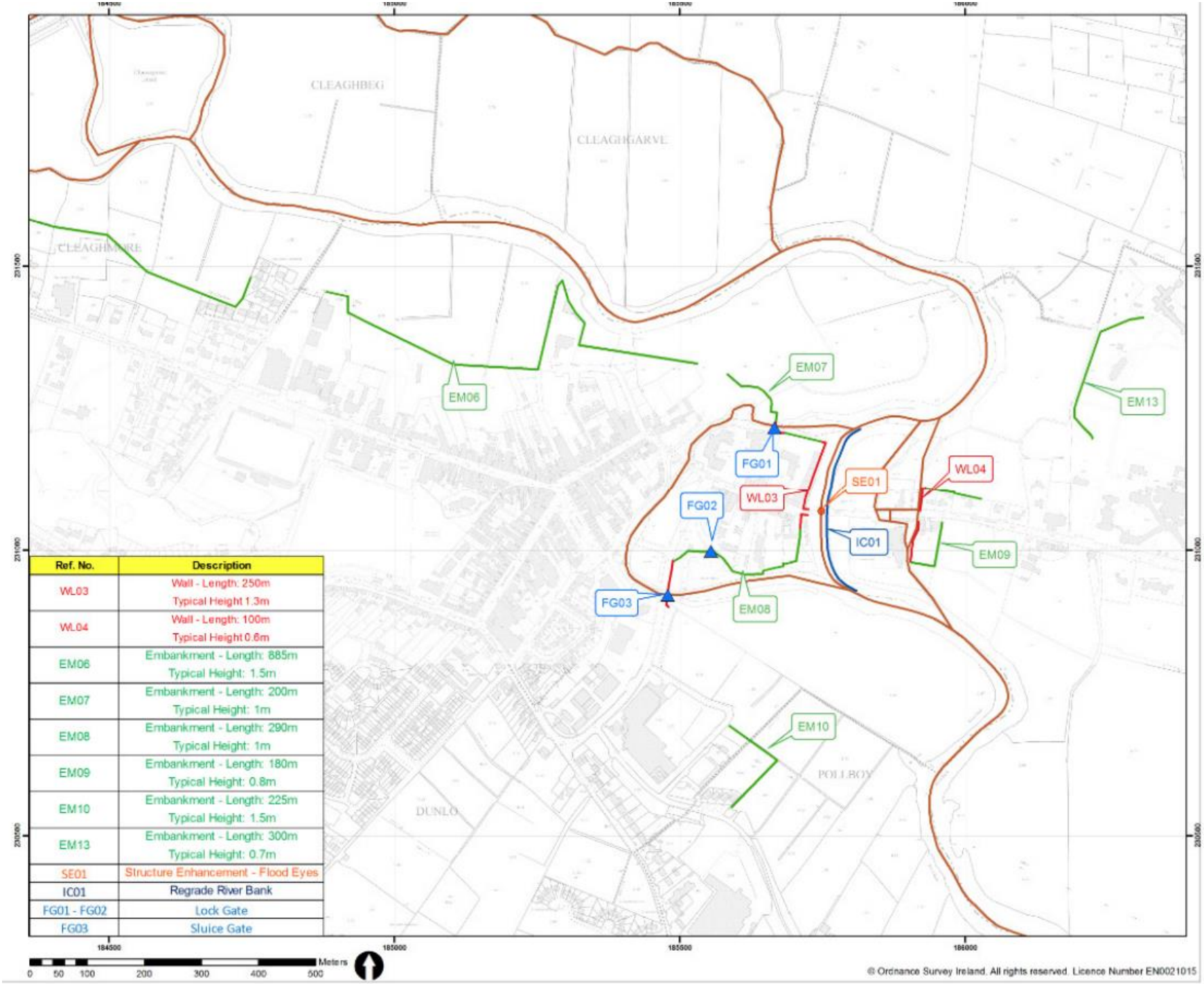
Map: BALLINASLOE OPTION 3 (Sheet 2 of 4)

Drawn by:	AC	Date: August 2015
Checked by:	PT	Date: August 2015
Reviewed by:	MC	Date: August 2015
Approved by:	PS	Date: August 2015
Map Scale: 1: 8,000		Plot Scale: 1:1 @ A3



Ref. No.	Description
WL03	Wall - Length: 250m Typical Height 1.3m
WL04	Wall - Length: 100m Typical Height 0.6m
EM06	Embankment - Length: 885m Typical Height: 1.5m
EM07	Embankment - Length: 200m Typical Height: 1m
EM08	Embankment - Length: 290m Typical Height: 1m
EM09	Embankment - Length: 180m Typical Height: 0.8m
EM10	Embankment - Length: 225m Typical Height: 1.5m
EM13	Embankment - Length: 300m Typical Height: 0.7m
SE01	Structure Enhancement - Flood Eyes
IC01	Regrade River Bank
FG01 - FG02	Lock Gate
FG03	Sluice Gate

Legend

AFA Boundary

River Centreline

Potential Measures

- Structure Enhancement
- Structure Replacement
- Property Relocation
- Pump
- Flood Gate
- Flapped Outfall
- Replace Culvert
- Weir
- Existing Defence
- Raise Existing Defences
- Embankment
- Wall
- Existing Diversion
- Flow Diversion
- Channel Maintenance
- Increase Conveyance
- Storage Area

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Map: BALLINASLOE OPTION 3 (Sheet 3 of 4)

Drawn by:	AC	Date: September 2015
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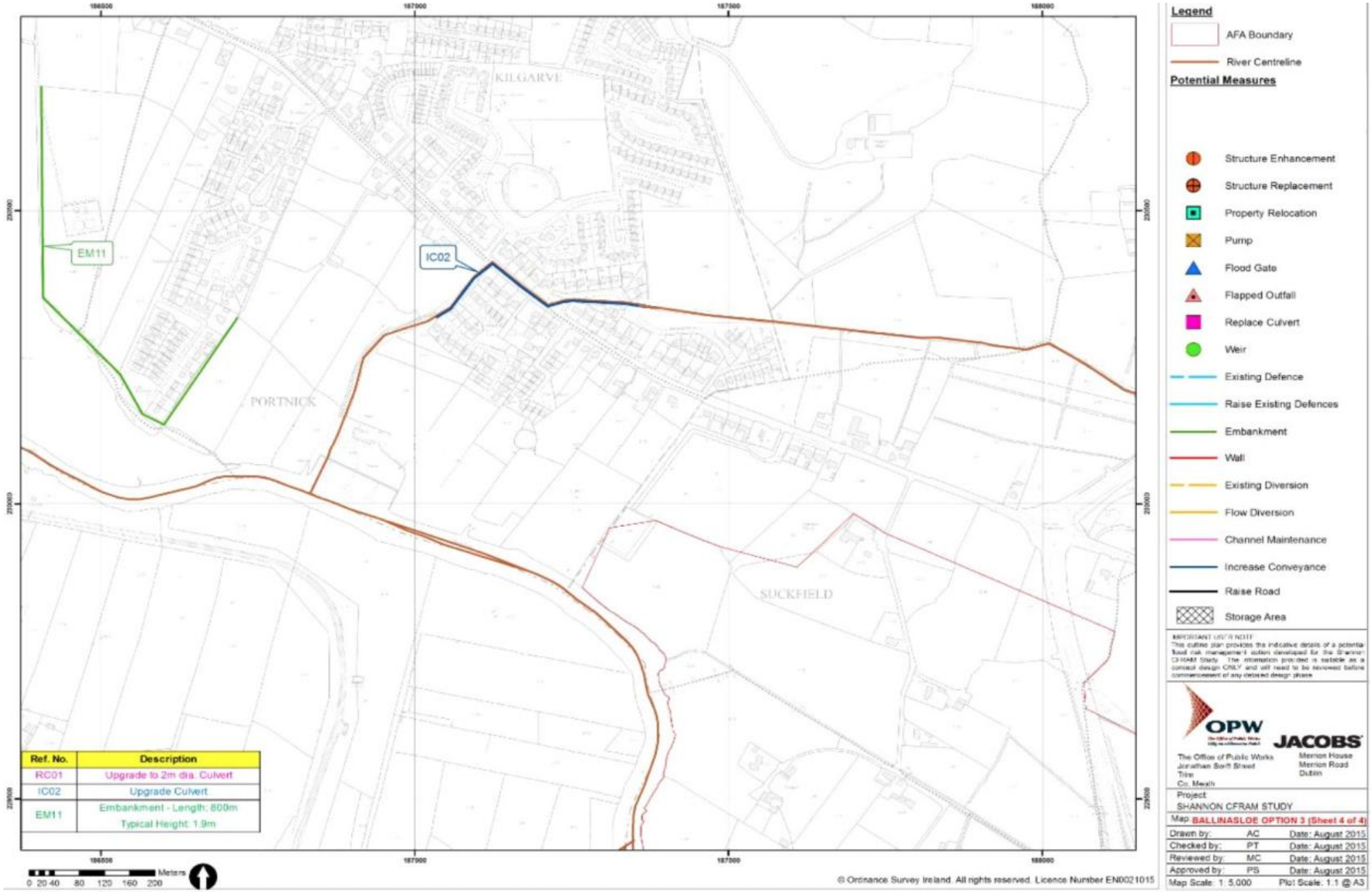
Reviewed by:	MC	Date: September 2015
Approved by:	PS	Date: September 2015

Map Scale: 1: 6,000 Plot Scale: 1:1 @ A3


KILGARVE
PORTNICK
SUCKFIELD
EM11
IC02
Legend
AFA Boundary
River Centreline
Potential Measures
Structure Enhancement
Structure Replacement
Property Relocation
Pump
Flood Gate
Flapped Outfall
Replace Culvert
Weir
Existing Defence
Raise Existing Defences
Embankment
Wall
Existing Diversion
Flow Diversion
Channel Maintenance
Increase Conveyance
Raise Road
Storage Area
Ref. No. | Description
RC01 | Upgrade to 2m dia. Culvert
IC02 | Upgrade Culvert
EM11 | Embankment - Length: 600m Typical Height: 1.9m
Meters
0 20 40 80 120 160 200
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Project:
SHANNON CFRAM STUDY
Map: BALLINASLOE OPTION 3 (Sheet 4 of 4)
Drawn by: AC Date: August 2015
Checked by: PT Date: August 2015
Reviewed by: MC Date: August 2015
Approved by: PS Date: August 2015
Map Scale: 1: 5,000 Plot Scale: 1:1 @ A3