STRATEGIC FLOOD RISK ASSESSMENT

FOR THE

SLIGO COUNTY DEVELOPMENT PLAN 2011-2017

for: **Sligo County Council**

County Hall

Riverside

Sligo

County Sligo

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Table of Contents

List of Figures

List of Tables

Section 1 Introduction and Background

1.1 Introduction and Terms of Reference

This is the Strategic Flood Risk Assessment (SFRA) for the Sligo County Development Plan 2011-2017 (hereafter referred to as the Plan). The purpose of this report is to inform the Plan, particularly its policies and objectives, as well as its Strategic Environmental Assessment (SEA).

This report has been prepared by CAAS Ltd. who are also engaged by Sligo County Council to carry out the SEA. Its content and format are adapted from guidance provided in a document called *Regional Planning Guidelines: Template for Flooding Section* which was issued by the Department of the Environment, Heritage and Local Government (DEHLG) in May 2009 and *The Planning System and Flood Risk Management - Guidelines for Planning Authorities*, (DEHLG) November 2009. While the former document was prepared for the broader regional scale of flood risk assessment it has been adapted to suit the scale of a county development plan for the purposes of this SFRA. The guidelines[1] refer to a specific template for flood risk assessment at the county development plan scale; however such a template was not available at the time of preparation of this SFRA.

This SFRA sets out how flood risk relates to the planning processes. It presents and analyses available flood related data at appropriate scales to identify flood risk management priorities for the County. Strategic flood risk management policies, priorities and actions are then described and the concluding section discusses the approach to monitoring and review.

1.2 Disclaimer

It is important to note that compliance with the requirements of *The Planning System and Flood Risk Management - Guidelines for Planning Authorities* and of the *Floods Directive2007 60/EC* is a work in progress and is currently based on emerging and incomplete data as well as estimates of the locations and likelihood of flooding. The Assessment and Mapping of areas of flood risk[2], in particular, still awaits the publication of both Preliminary Flood Risk Assessments [PFRAs] and Catchment-based Flood Risk Assessment and Management Studies [CFRAMS]. As a result, SFRA in County Sligo is based on available information.

Accordingly all information in relation to flood risk is provided for general policy guidance only. It may be substantially altered in light of future data and analysis. As a result all landowners and developers are advised that the Sligo County Council and its agents can accept no responsibility for losses or damages arising due to assessments of the vulnerability to flooding of lands, uses and developments. Owners, users and developers are advised to take all reasonable measures to assess the vulnerability to flooding of lands in which they have an interest prior to making planning or development decisions.

[1] *The Planning System and Flood Risk Management - Guidelines for Planning Authorities*, Technical Appendices, Section 1.1, p.2. Department of the Environment Heritage and local Government / OPW, November 2009

[2] Content and format are adapted from guidance provided in a document called *Regional Planning Guidelines: Template for Flooding Section* which was issued by the Department of the Environment, Heritage and Local Government (DoEHLG) in May 2009 and the on *The Planning System and Flood Risk Management - Guidelines for Planning Authorities*, (DoEHLG) November 2009.

1.3 Flood Risk, Context and its Relevance as an Issue to the County Development Plan

1.3.1 Flood Risk

Flooding is an environmental phenomenon which, as well as causing economic and social impacts, could in certain circumstances pose a risk to human health. Parts of County Sligo are vulnerable to flooding as mapped on Figure 2.1. This vulnerability can be exacerbated by changes in the occurrence of severe rainfall events and associated flooding of the County's rivers. Local conditions such as low-lying lands and slow surface water drainage increase the risk of flooding. This risk can be increased by human actions including clearing of natural vegetation to make way for agriculture, draining of bog and wetland areas, the development of settlements in the flood plains of rivers and on low lying or eroding coastlines as well as by changing weather patterns. Inadequately planned infrastructural development, culverting, forestry operations and urban development in the floodplain can also give rise to flooding hazards.

1.3.2 Context

Flood Risk must be seen in the context of both the long history of settlement in the County and in the context of existing and emerging policy and practice in relation to planning, development and flooding. Flooding issues are well understood in the County with its long history of settlement and the location and layout of its towns have generally evolved to avoid flood-prone areas. The direct impact of new urban development is generally not as significant a problem now as it was in the past because of the implementation of Sustainable Urban Drainage Systems (SUDS). However vigilance is still needed at the planning and zoning stage to avoid flood risk, for example in less well understood urban fringe areas – hence the need for Flood Risk Assessment of all new plans at all levels as appropriate – including County Development Plan level.

1.3.3 Relevance to Plan Making Process

This SFRA contains a county-wide flood risk evaluation. The need for flood risk assessments of specific areas of the County is prioritised taking account of the findings of this evaluation, the hierarchy of settlements in the Plan and whether flood management studies[3] have recently been carried out for areas that are at risk or not. A range of preparatory actions are proposed in order to position Sligo County Council to ensure that they are involved in flood risk assessment and management as appropriate and as prescribed under the DEHLG Guidelines.

1.4 Policy Framework

1.4.1 EU Flood Directive

European Directive 2007/60/EC on the assessment and management of flood risk aims to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity. The Directive applies to inland waters as well as all coastal waters across the whole territory of the EU. The Directive requires Member States to carry out a preliminary assessment by 2011 in order to identify the river basins and associated coastal areas at risk of flooding. For such zones, flood risk maps are required to be drawn up by 2013. Flood risk management plans focused on prevention, protection and preparedness must be established by 2015.

Compliance with the Directive is to be coordinated with actions under the Water Framework Directive. Flood risk management plans and river basin management plans are also to be co-ordinated.

[3] Including Flood Risk Assessment and Management Studies (FRAMs) and Catchment Flood Risk Assessment and Management Studies (CFRAMs)

1.4.2 DEHLG Flood Risk Management Guidelines

1.4.2.1 Introduction

In September 2008 the DEHLG published draft Guidelines on flood risk management for public consultation. These were called *The Planning System and Flood Risk Management – Consultation Draft Guidelines for Planning Authorities*. These were aimed at ensuring a more consistent, rigorous and systematic approach which will fully incorporate flood risk assessment and management into the planning system. Local authorities were required to have regard to the draft Guidelines' recommended flood risk identification, assessment and management processes when preparing or varying development plans and local area plans and in consideration of applications for planning permission.

After the draft stage, the actual Guidelines[4] were published on 30 November 2009. Sligo's County Development Plan review commenced in April 2009.

1.4.2.2 Principles of Flood Risk Management

The key principles of flood risk management set out in the flood guidelines are to:

- avoid development that will be at risk of flooding or that will increase the flooding risk elsewhere, where possible;
- substitute less vulnerable uses, where avoidance is not possible; and,
- mitigate and manage the risk, where avoidance and substitution are not possible.

The flood Guidelines follow the principle that development should not be permitted in flood risk areas, particularly floodplains, except where there are no alternative and appropriate sites available in lower risk areas that are consistent with the objectives of proper planning and sustainable development.

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. Most types of development would be considered inappropriate in areas which have the highest flood risk. Only water-compatible development such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports and recreation and essential transport infrastructure that cannot be located elsewhere would be considered appropriate in these areas.

1.5 Role of the OPW in Regional Flood Risk Assessment and Management

The Office of Public Works is the lead agency for flood risk management in Ireland. The coordination and implementation of Government policy on the management of flood risk in Ireland is part of its responsibility. It is the primary agency responsible for ensuring Ireland's compliance with the EU Floods Directive and particularly for the preparation of a preliminary assessment by 2011, flood risk mapping by 2013 and flood risk management plans by 2015 (ref Section 1.4.1). It is the principal agency involved in the preparation of Flood Risk Assessment and Management Studies (FRAMS).

1.6 Regional Flood Risk Assessment in Regional Planning Guidelines for the Border Region 2010-2022

The Regional Planning Guidelines for the Border Region set out a regional planning framework for the County Development Plans of all the planning authorities in the Region, including Sligo's County

[4] *The Planning System and Flood Risk Management - Guidelines for Planning Authorities*, Department of the Environment Heritage and local Government, November 2009

Development Plan. The flood Guidelines require each region's planning guidelines to be accompanied by Regional Flood Risk Appraisal (RFRA).

The Border Region's RFRA contains a regional scale flood risk evaluation. The need for specific flood risk assessments of settlements through the region is prioritised taking account of the findings of this evaluation, the hierarchy of settlements in the RPGs and whether flood management studies[5] have recently been carried out for areas that are at risk or not. The Docklands area in Sligo harbour is the only specific part of County Sligo that is identified in the RFRA as being at risk of flooding. A range of preparatory actions are proposed in order to position the Regional Authority and its constituent Local Authorities to ensure that they are involved in flood risk assessment and management as appropriate and as prescribed under the flood Guidelines. The RFRA sets out how flood risk relates to the RPG process, the policy framework and pertinent guidelines. It presents and analyses available flood related data at a regional level to identify regional flood risk management policies, priorities and actions including monitoring and review. It encourages the need for co-operation between councils and other agencies as flood issues and watercourses often cross council and national boundaries.

[5] Including Flood Risk Assessment and Management Studies (FRAMS)

Section 2 Strategic Flood Risk Appraisal

2.1 Introduction

This section provides a description of the spatial distribution of flood risk at appropriate scales for the Plan, based on available information. The assessment is generally prepared at the County scale. The 30 mini plans contained within the Plan are each dealt with at a detailed local scale.

2.2 Available Data on Flood Risk

The below listed flood risk related data is available for the Region:

i) Office of Public Works (OPW) Flood Events mapping[6];
ii) OPW Benefitting Lands mapping; and,
iii) Mineral Alluvial Soil mapping[7].

It should be noted that some of this data is historically derived, not prescriptive in relation to flood return periods and not yet predictive or inclusive for climate change analysis.

Flood risk assessment mapping showing Areas of Potential Significant Flood Risk (APSRs)[8] is under preparation by the OPW in collaboration with local authorities and other key agencies. At time of carrying out this SFRA this mapping was at draft stage only and was not available for use. When it is finished, this mapping will be an important and primary input into future flood risk assessment studies (ref. Section 3).

2.3 General Description - Areas Affected by Flood Risk

County Sligo and its settlements as designated in the Plan (*Sligo Gateway City*, *Key Support Towns*, *Principal Satellites*, *Secondary Satellites*, *Settlements with Special Functions* and *Villages Sustaining Rural Communities*) have been analysed using a GIS system for the presence of three flood risk factors:

- Flood Events (dataset i above);
- Benefitting Lands (dataset ii above); and,
- Mineral Alluvial Soils (dataset iii above).

Figure 2.1 maps the occurrence of these factors across the County. By far the largest occurrence of *Benefitting Lands* is in the drumlin belt areas in the centre and south of the County.

Mineral Alluvial Soils can be seen to be most predominant in the northern part of the drumlin belt area, radiating south from Colooney. They also occur along most of the County's rivers.

Flood Events have been recorded across most of the lower lying parts of the County.

[6] OPW dataset which defines the extent of a flood over an area based on existing mapped flood extent information. Most of the information in the OPW Flood Events dataset for County Sligo was sourced from Sligo County Council.
[7] An Teagasc dataset
[8] It is based on a combination of historical and predictive data. The predictive data included soils and water levels in rivers. A GIS model was generated and run to find areas at risk. The receptors used were properties from An Post's Geodirectory. It is expected that this method will be developed further to weight types of buildings e.g. hospitals, garda stations, houses with basements etc. The country was split up into 1km^2 grids. If the model identified a certain number of properties as being at risk of flooding, the area was classified as being at Low, Medium or High risk depending on the number of properties at risk

The occurrence of these flood risk factors at each designated settlement is identified in Table 2.1 and Table 2.2. All settlements which are covered by Mini Plans within the draft Plan are included in Table 2.2 and the other designated settlements are included in Table 2.1. Table 2.1 uses a scoring system to rank the settlements according to flood risk, position in the draft Plan's settlement hierarchy and the availability and status of recent flood studies, as described in Section 2.4, in order to prioritise their potential need for detailed flood risk assessment and management studies. Table 2.2 applies a similar system to the Mini-Plan areas but with the additional use of detailed analysis of old 6" Ordnance Survey mapping as explained below.

6" Ordnance Survey (OS) maps for all the Mini-Plan areas have been studied to see if there are any areas marked as being *Liable to Floods* in or in the vicinity of the Mini-Plan areas. While these maps are a good source of historical flooding patterns there are several limitations to their use, such as the following.

- The OS maps simply show the text *Liable to Floods* without delineating the extent of these areas. For the purposes of this SFRA a GIS system has been used to indicate the potential extent of these areas. It has done this by shading all of the area up to the next contour line[9] above the immediate area that is marked as *Liable to Floods*. This is a crude system and cannot be taken to be definitive but in the absence of the APSR mapping referred to in Section 2.3 it does provide an objective and systematic indication of potential flood risk at a local scale.

- As these maps were based on survey work carried out from 1833-1844 with many updated in the 1930s and 40s, they do not show or take any account of recent changes in surface drainage, such as development in floodplains, road realignments or drainage works for forestry or agriculture. So there is significant potential that flood risk in some areas may have increased or been reduced since they were prepared.

While the resulting areas that are depicted as being liable to floods are not reliable they do provide an indication that further assessment of flood potential may be required. Table 2.2 shows which Mini - Plan areas were found, on this basis, to have areas that are potentially *Liable to Floods*. Maps showing these Mini-Plan areas are included as Figure 1 to Figure 11 in the Appendix at the end of this report.

[9] Because more accurate contours are available on up-to-date GIS map files than on the old Ordnance Survey mapping, this contour data has been used. The interval between these contour lines is 10m so in some cases this methodology will show a greatly exaggerated area of potential flood risk while in other cases it may be a close approximation of the actual extent of the area that is *liable to floods*.

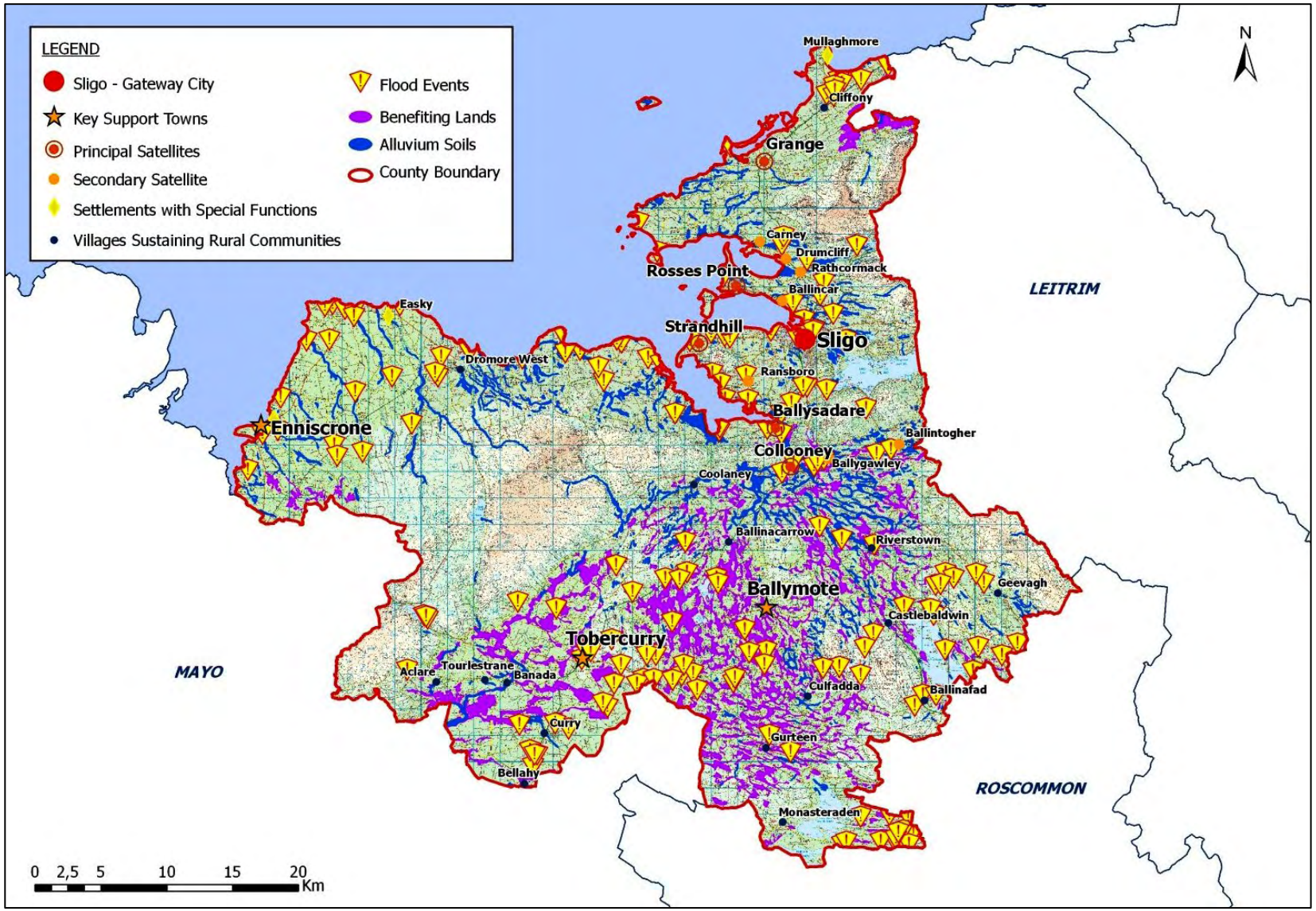

Figure 2.1 Occurrence of Specified Flood Risk Factors in County Sligo

2.4 Supplementary Description

In order to identify where addressing flood risk is particularly important and which settlements should be prioritised for detailed Flood Risk Assessment and Management Studies (FRAMS) and other assessment or management, the following scoring system was used, as set out in Table 2.1 and Table 2.2. Settlements were given a score dependent on the following factors.

- The settlement's ranking in the Plan's settlement hierarchy: *Sligo Gateway City* (score=6); *Key Support Towns* (5); *Principal Satellites* (4); *Secondary Satellites* (3); *Settlements with Special Functions* (2); and, *Villages Sustaining Rural Communities* (1).

- The presence of any of the three flood risk factors set out in Section 2.3 - the presence of all three factors gives a score of 6, two factors gives a score of 4 and one factor gives a score of 2.

- In the case of the Mini-Plan areas, where lands that are potentially *Liable to Floods* occur within the Plan area then an additional score of 2 is given.

The scores are added together to give an overall score for each settlement in order to prioritise the need for future consideration of potential flood risk.

The availability of flood studies for each settlement was also considered. Where detailed recent flood studies have been carried out, covering all parts of a settlement that are at risk, then further studies are not a priority. Where these have resulted in Plans to avoid or mitigate risk of impact then a score is also noted (expressed as a minus to recognise the reduced risk):

- FRAM plus adopted Plan gives a score of -6
- FRAM plus partial Plan gives a score of -4
- Partial FRAM or Partial Plan gives a score of -2

It should be noted that as the flood Guidelines only became mandatory in November 2009, most FRAM studies were completed before that and may not therefore comply fully with the requirements of the Guidelines. Hence the negative scores awarded to take account of previous studies will not cancel out the positive scores awarded due to the other criteria discussed above.

Where applicable, the need for an integrated approach through coordinated action between local authorities is also identified.

It is emphasised that this is a county scale strategic GIS analysis based on three to four prescribed flood risk identification criteria only[10] and that more detailed flood risk analyses for subsidiary land-use plans as well as for the next version of the County Development Plan will be able to draw on more detailed and accurate studies, as described in section 2.5 below, that will become available during the lifetime of the Plan.

2.5 Forthcoming Information

European Directive 2007/60/EC on the assessment and management of flood risks requires Member States to carry out preliminary assessments by 2011 in order to identify the river basins and associated coastal areas at risk of flooding. For such zones, flood risk maps are required to be drawn up by 2013. Flood risk management plans focused on prevention, protection and preparedness must be established by 2015.

[10] ref Section 2.3

As mentioned in Section 2.2 the OPW is currently involved in preparing Preliminary Flood Risk Assessments (PFRAs) with local authorities, the EPA and other key agencies. These will identify Areas with Potential Significant Flood Risk. Work to refine the method and outputs of these studies is ongoing[11]. This will be a core part of the preliminary assessment work required under the Floods Directive, as mentioned above.

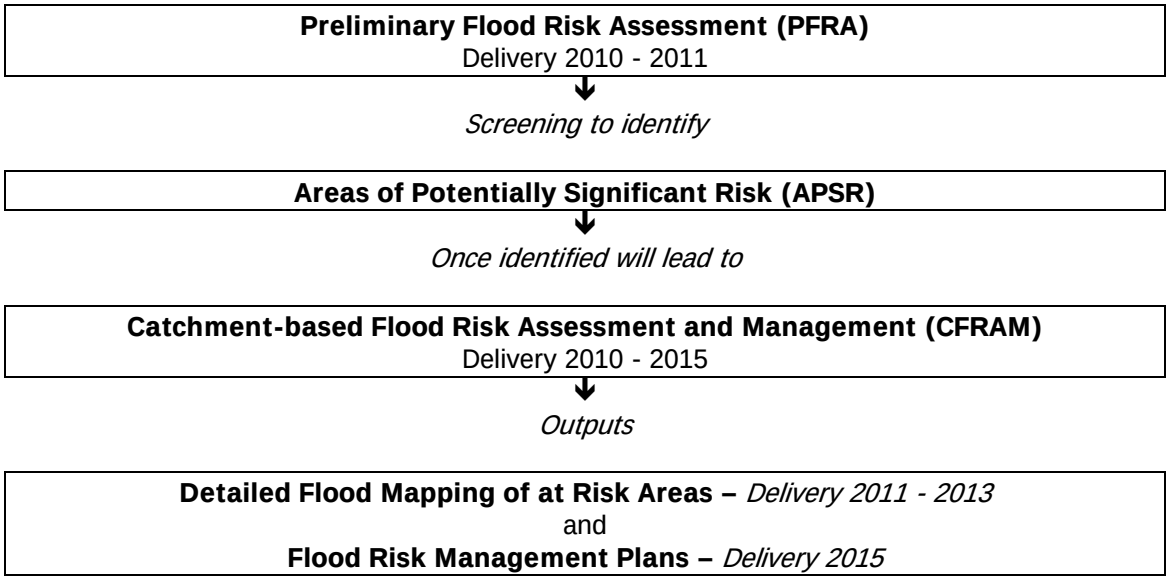

Figure 2.2 Hierarchy of Flood Risk Assessment Plans[12]

The mapping and plans that will emerge from the various stages shown in Figure 2.2 will be the basis for future consideration of flood risk, their production being led by the OPW which is the lead agency for flood risk management in Ireland. This SFRA is a preliminary assessment based on currently available data and it will be largely superseded by these emerging sets of maps and plans.

2.6 Issues for the County Development Plan

The principal issue that emerged for the plan is where the risk factors described in Section 2.3 occur at higher tier settlements, because these are allocated specific target populations which will require significant new development, some of which is likely to be built on greenfield sites. The preliminary prioritisation scoring arrived at in Table 2.1 indicates co-incidence of towns allocated significant population growth targets with prescribed potential flood risk indicators.

[11] Pers comm. With OPW, April 2010

[12] Source: *Regional Planning Guidelines for Border Region 2010-2022*, The Border Regional Authority, January 2010

Settlement Name	**Settlement Hierarchy Designation**[13]	**Settlement Hierarchy Score**	**Plan Details (type and period covered)**	**Indications of flood potential** FE⇨Flood Events BL⇨Benefitting Lands AS⇨Alluvial Soils	**Flood Risk Factors Score**	**Available Flood Risk Studies**	**Risk Impact Score**	**Prioritisation Score**	**Co-ordinated approach needed between:** [TC= Town Council CC = County Council]
Tobercurry	KST	4	Draft Tobercurry LAP being prepared	FE BL	4	none	0	4+4-0 = 8	-
Enniscrone	KST	4	Enniscrone LAP 2004-2010	FE AS	4	none	0	4+4-0 = 8	-
Sligo	GC	5	Sligo and Environs Development Plan 2010-2016 Hazelwood/Ballinode LAP 2004-2010 (review envisaged) Sligo North Fringe LAP 2010-2016	FE AS	4	The Sligo Main Drainage Flood Alleviation Study	-2[14]	5+4-2 = 7	Sligo County and Borough Councils
Ballymote	KST	4	Ballymote Local Area Plan 2005-2011 (amendment pending)	BL	2	none	0	4+2-0 = 6	-
Strandhill	PS	3	Strandhill Local Area Plan 2003-2012	FE	2	none	0	3+2-0 = 5	-
Bellahy	VSRC	1	Draft Charlestown/Bellaghy LAP 2010-2016	BL	2	none	0	1+2-0 = 3	Sligo and Mayo County Councils

Table 2.1 Occurrence of Flood Risk Factors in Settlements and Preliminary Prioritisation of Need for Consideration of Potential Flood Risk (Part A – Settlements not covered by Mini Plans)

[13] GC = Gateway City = 5
KST = Key Support Towns = 4
PS = Principal Satellites = 3
SS = Secondary Satellites =2
VSRC = Villages Sustaining Rural Communities = 1
[14] Details of this study awaited to check it's content and coverage

Miniplan Area	**Settlement Hierarchy Designation**[15]	**Settlement Hierarchy Score**	**Areas liable to flood within Plan boundary**	**Areas liable to flood nearby**	**Other indications of flood potential** FE⇨Flood Events BL⇨Benefitting Lands AS⇨Alluvial Soils	**Flood Risk Factors Score**	**Available Flood Risk Studies**	**Risk Impact Score**	**Prioritisa-tion Score**	**Coordinated approach needed between:** TC ⇨ Town Co. CC ⇨ County Co.
Collooney	PS	3	None	None	FE BL AS	6	none	0	3+6-0 = 9	-
Ballysadare	PS	3	Spring tide on coast in NE of area		FE AS	6	none	0	3+6-0 = 9	-
Riverstown	VSRC	1	NE of Plan area		FE BL AS	8	none	0	1+8-0 = 9	-
Ballygawley	SS	2	None	None	FE BL AS	6	none	0	2+6-0 = 8	-
Ballincar	SS	2	None	None	FE AS	4	none	0	2+4-0 = 6	-
Drumcliff	SS	2	Shore at S of area		AS	4	none	0	2+4-0 = 6	-
Rathcormack	SS	2	W of area		AS	4	none	0	2+4-0 = 6	-
Aclare	VSRC	1	None	None	BL AS	4	none	0	1+4-0 = 5	-
Culfadda	VSRC	1	None	None	BL AS	4	none	0	1+4-0 = 5	-
Grange	PS	3	None	None	AS	2	none	0	3+2-0 = 5	-
Ballinacarrow	VSRC	1	SE of area		BL	4	none	0	1+4-0 = 5	-
Ballinafad	VSRC	1	Through Village		FE	4	none	0	1+4-0 = 5	-
Gorteen	VSRC	1	N & E of plan area		BL	4	none	0	1+4-0 = 5	-
Ballintogher	SS	2	None	None	AS	2	none	0	2+2-0 = 4	-
Carney	SS	2	None	None	AS	2	none	0	2+2-0 = 4	-
Coolaney/Rockfield	SS	2	None	None	AS	2	none	0	2+2-0 = 4	-
Rosses Point	PS	3	None	None	None	0	none	0	3+0-0 = 4	-
Banada	VSRC	1	None	None	AS	2	none	0	1+2-0 = 3	-
Bunnanaddan	VSRC	1	None	None	BL	2	none	0	1+2-0 = 3	-
Castlebaldwin	VSRC	1	None	300m SE of area	BL	2	none	0	1+2-0 = 3	-
Cloonacool	VSRC	1	None	None	BL	2	none	0	1+2-0 = 3	-
Curry	VSRC	1	None	None	AS	2	none	0	1+2-0 = 3	-
Dromore West	VSRC	1	None	None	AS	2	none	0	1+2-0 = 3	-
Easky	VSRC	1	None	None	FE	2	none	0	1+2-0 = 3	-
Mullaghmore	VSRC	1	S E of plan area		None	2	none	0	1+2-0 = 3	-
Ransboro	SS	2	None	None	None	0	none	0	2+0-0 = 3	-
Tourlestraun	VSRC	1	None	None	AS	2	none	0	1+2-0 = 3	-
Cliffony	VSRC	1	NW boundary of plan area		None	0	none	0	1+0-0 = 1	-
Geevagh	VSRC	1	None	Just outside W boundary	None	0	none	0	1+0-0 = 1	-
Monasteraden	VSRC	1	None	None	None	0	none	0	1+0-0 = 1	-

Table 2.2 Occurrence of Flood Risk Factors in Settlements and Preliminary Prioritisation of Need for Consideration of Potential Flood Risk (Part B – Settlements covered by Mini-Plans)

[15] GC = Gateway City = 5 KST = Key Support Towns = 4 PS = Principal Satellites = 3
SS = Secondary Satellites = 2 VSRC = Villages Sustaining Rural Communities = 1

It is emphasised that the tables on the previous pages and the resulting prioritisation is based on the data listed in Section 2.2 combined with the Plan's Settlement Hierarchy. It has not been augmented by any other studies or flood event reports, nor has it been ground truthed. It provides a consistent regional scale prioritisation to indicate which settlements may be in need of more detailed flood risk assessment in order to provide for the growth provided for under the draft Plan while complying with the Flood Guidelines. As mentioned in Section 2.5 the basis of this preliminary prioritisation will be largely superseded by other datasets and plans which will become available during the lifetime of the Plan.

It is noted that some specific flood event locations such as those listed below are considered to be high priority. When this preliminary prioritisation is being updated by - or in light of - further studies, then these and other specific local flooding concerns can be taken more fully into consideration in the context of more reliable and comprehensive background information.

Section 3 Regional Flood Risk Management Policies, Actions and Priorities

3.1 Flood Risk Management Policies

The application of the principle of flood risk management includes the identification of detailed priorities for areas where more detailed evidence of flood risk needs to be gathered. It also involves cooperation in regional and inter-county catchment-based Flood Planning Groups to ensure a coordinated approach is followed to addressing flood risk.

The Preparation of FRAM studies over the lifetime of the County Development Plan will provide an evidence-led approach for detailed flood risk policies within the County. During the lifetime of the County Development Plan it is proposed that structures and evidence should be put in place to facilitate the adoption of future co-ordinated polices. Thus, the priorities arising from this SFRA are:

1. The identification of detailed priorities for areas where more detailed evidence needs to be gathered (Table 2.1, Table 2.2 and Table 3.1 indicate these priorities); and
2. The co-ordination of authorities to address flood risk (as indicated in the tables referred to above).

The County Development Plan contains policies and/or objectives intended to manage flood risk. In order to comply with the flood Guidelines it will be necessary to apply the principles of flood risk management contained therein and require Flood Risk Assessments to be undertaken as relevant. The County Council should consult with the Guidelines in order to implement their provisions.

The key principles of the risk-based sequential approach to managing flood hazard and potential risk in the planning system as outlined in the flood guidelines are as follows.

1. Avoid development in areas at risk of flooding.
2. If this is not possible, consider substituting a land use that is less vulnerable to flooding.
3. Only when both avoidance and substitution cannot take place should consideration be given to mitigation and management of risks.
4. The identification of policies and practices to be adopted within the County during the lifetime of this County Development Plan, including:
    - Where relevant, requiring developments to comply with *The Planning System and Flood Risk Management - Guidelines for Planning Authorities*.
    - Where relevant, requiring developments to use 'Sustainable Urban Drainage Systems' in accordance with best current practice.
    - Encouraging the creation of opportunities for enhancement of bio-diversity and amenities in necessary flood risk responses.
    - Identifying the extent of functional flood plains within the priority areas of the County – ref. Table 2.1 and Table 2.2.
    - The development of co-ordinated flood management systems between local authorities, where relevant, to ensure the delivery of the above.

An analysis has been carried out of schedules for the delivery of SFRAs/FRAs for subsidiary plans within the County. This is presented in Table 3.1.

3.2 Strategic Policies Addressing Flood Risk at the County Level

- To implement the recommendations and provisions of the *Planning Guidelines on the Planning System and Flood Risk Management*.

- Adopt a sequential approach to flood risk management in the making of subsidiary plans and local area plans to guide development away from areas that have already been identified as being at risk and areas that emerge as being at risk when flood risk maps have been prepared for the County.
- To fulfil their responsibilities arising under the Flood Directive and to co-operate with the Office of Public Works in the development of Catchment-based Flood Risk Management Plans as necessary. Recommendations and outputs arising from Flood Risk Management Plans will be incorporated as relevant.
- Development in areas at risk of flooding, particularly floodplains, shall be avoided by not providing for or permitting development in flood risk areas unless: it is fully justified that there are wider sustainability grounds for appropriate development; unless the flood risk can be reduced or managed to an acceptable level without increasing flood risk elsewhere; and, where possible, it reduces flood risk overall.

It should be noted that water-compatible developments such as docks and marinas, amenity open space, outdoor sports and recreation may be compatible in areas at high risk, while more vulnerable development should be directed towards areas of minimal or no flood risk.

3.3 High-Level Implementation Objective

- Co-operate, in conjunction with the OPW, in the establishment of catchment based Flood Planning Groups involving all key actors including planning authorities and groups representing agriculture, forestry, water management, land management (e.g. Bord na Mona and the National Parks and Wildlife Service).

The priorities identified in Table 2.1 (above) will need to be reviewed, firstly in light of Preliminary assessments, then flood risk maps and then flood risk management plans, all of which are due to be prepared to comply with the Flood Directive.

Development Plan / Local Area Plan	**Current Plan Period**	**SFRA / FRA[16] required by**	**Notes**
Sligo and Environs Development Plan Hazelwood/Ballinode LAP Sligo North Fringe LAP	2010-2016 2004-2010 (review envisaged) 2010-2016	2014 2014 2014	Tie in with Garavogue CFRAM
Draft Tobercurry LAP	being prepared	t.b.c.	Tie in with Moy CRFAM
Enniscrone LAP	2004-2011 (amendment pending)	2010	
Ballymote Local Area Plan	2005-2011	2010	Tie in with Ballysadare CFRAM
Strandhill Local Area Plan	2003-2012	2010	
Draft Charlestown/Bellaghy LAP	20010-2016	2014	Tie in with Moy CRFAM

Table 3.1 Indicative Prioritisation Timetable for Subsequent SFRAs

This prioritisation timetable schedules the delivery of SFRAs/FRAs within the County Development Plan area.

[16] The flood Guidelines state "planning authorities should use their discretion in addressing flood risk in a manner more appropriate to small-scale LAPs". So the type of flood risk assessment in such cases is discretionary.

Section 4 Monitoring and Review

The progress of catchment based Flood Planning Groups in carrying out and implementing SFRAs and FRAs will be reviewed prior to the preparation of the next Count Development Plan and subsidiary plans (ref Table 3.1).

The Flood Planning Groups will monitor progress and review progress in addressing flood risk in the County with reference to *The Planning System and Flood Risk Management*, the Flood Directive and this SFRA. They will decide on appropriate indicators, which may include:

- number of developments located in functional flood plains; and,
- number of planning consents granted during the lifetime of the Plan for new developments in functional flood plains that may exacerbate flooding.

Appendix I

Maps showing indicative maximum extents of potential flood envelopes in mini-plan areas based on Ordnance Survey 6” mapping

Only mini plan areas that include areas marked as being Liable to Floods on the Ordnance Survey maps are included.

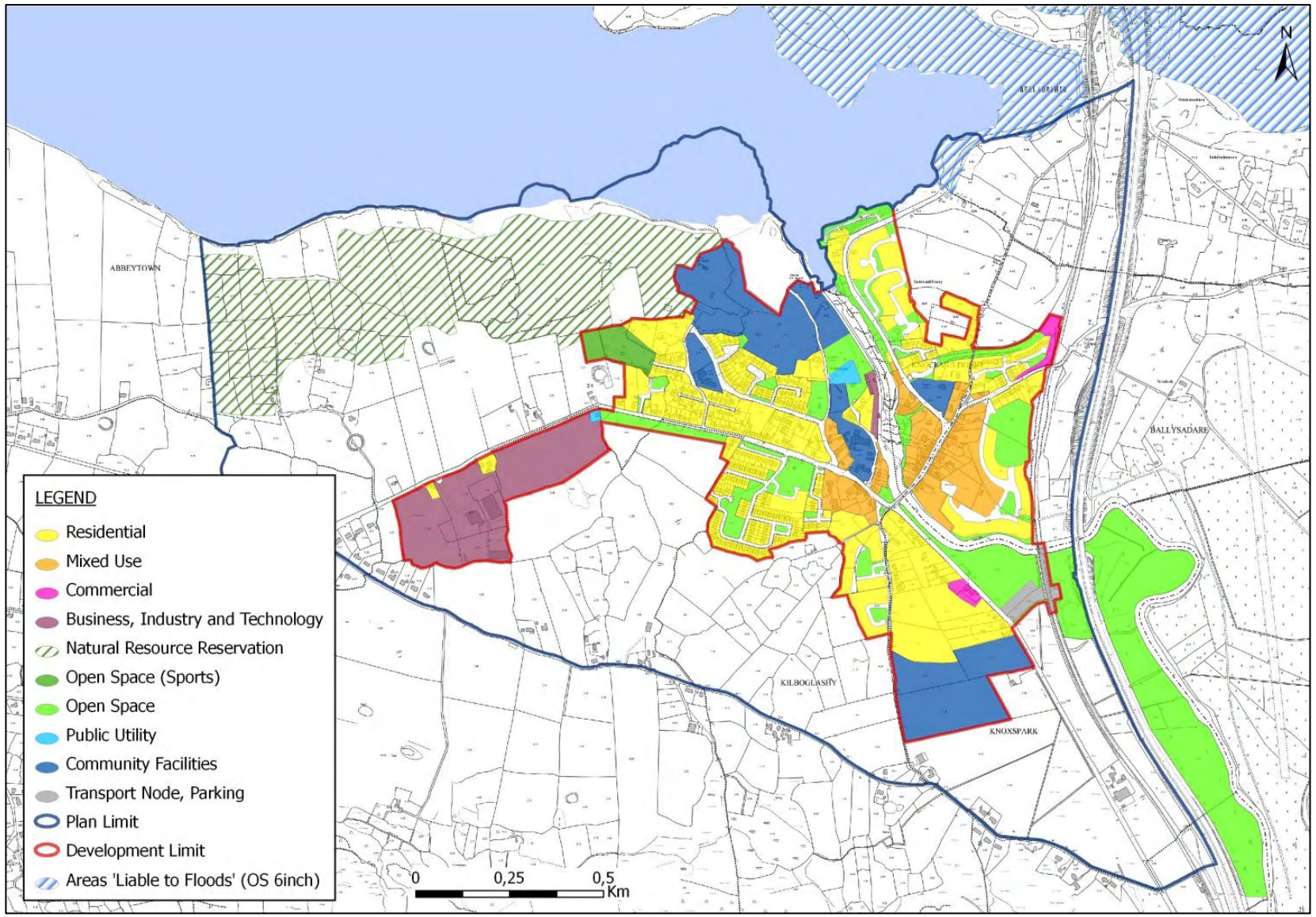

Figure 1 Ballysadare: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

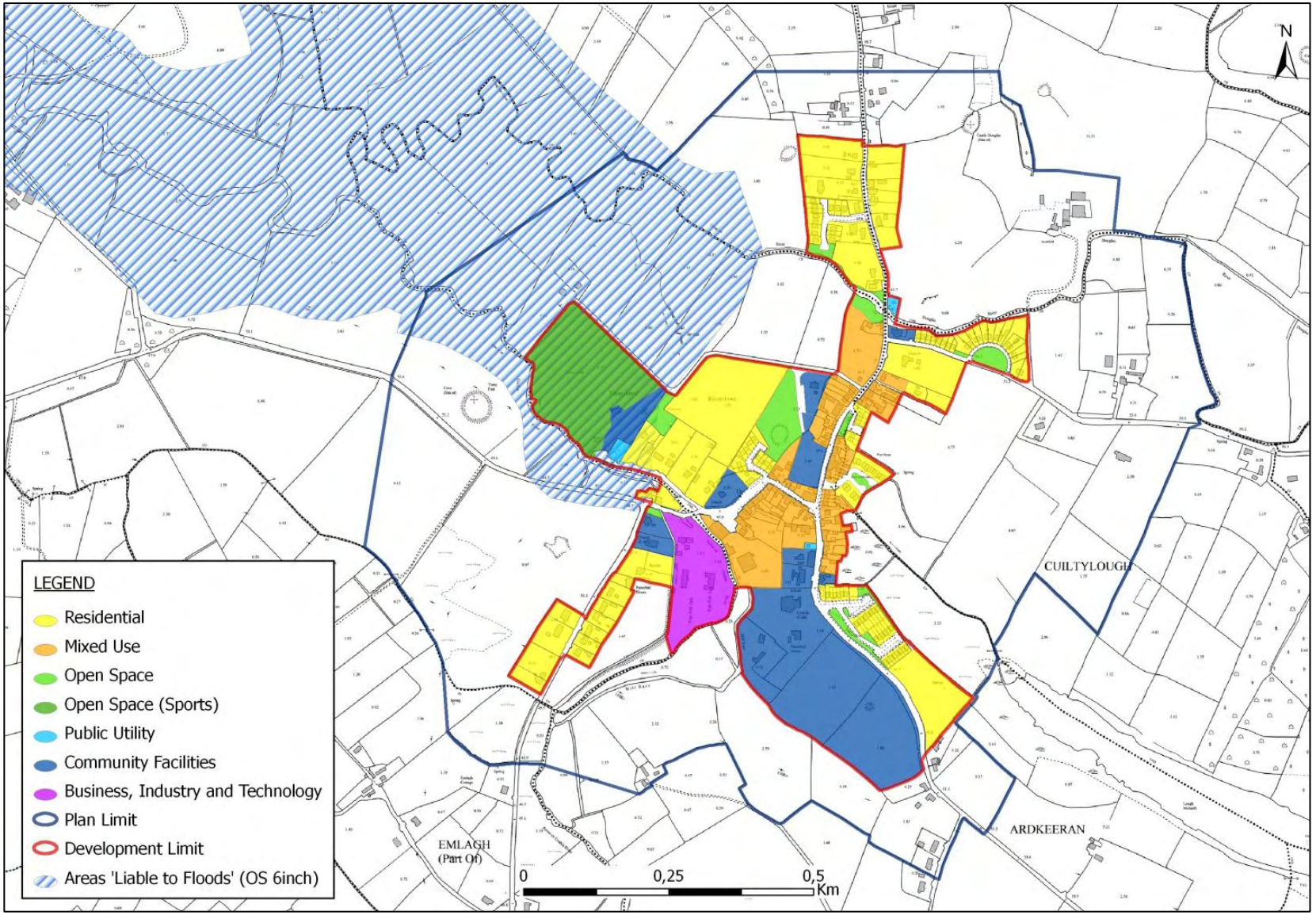

Figure 2 Riverstown: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

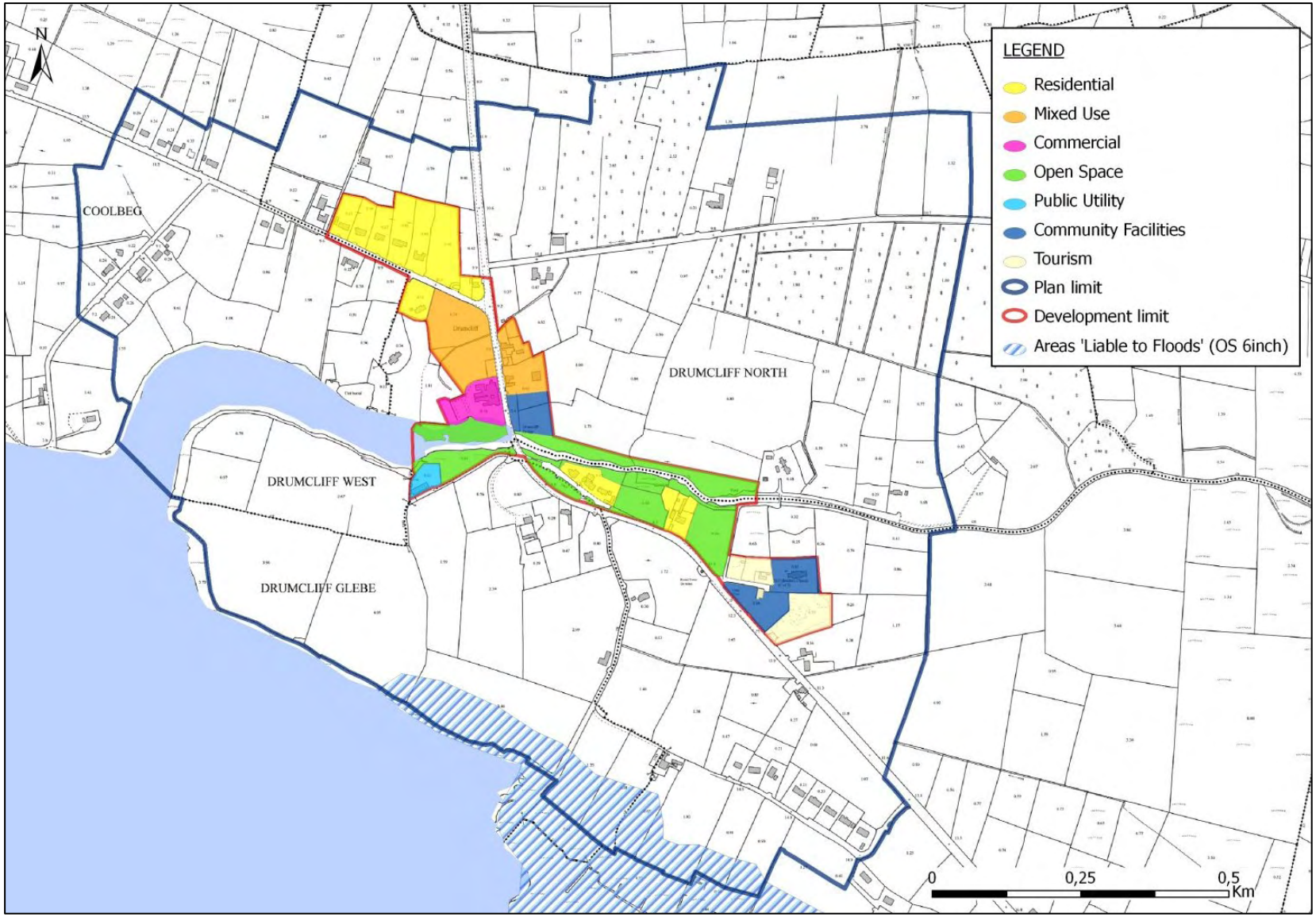

Figure 3 Drumcliff: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

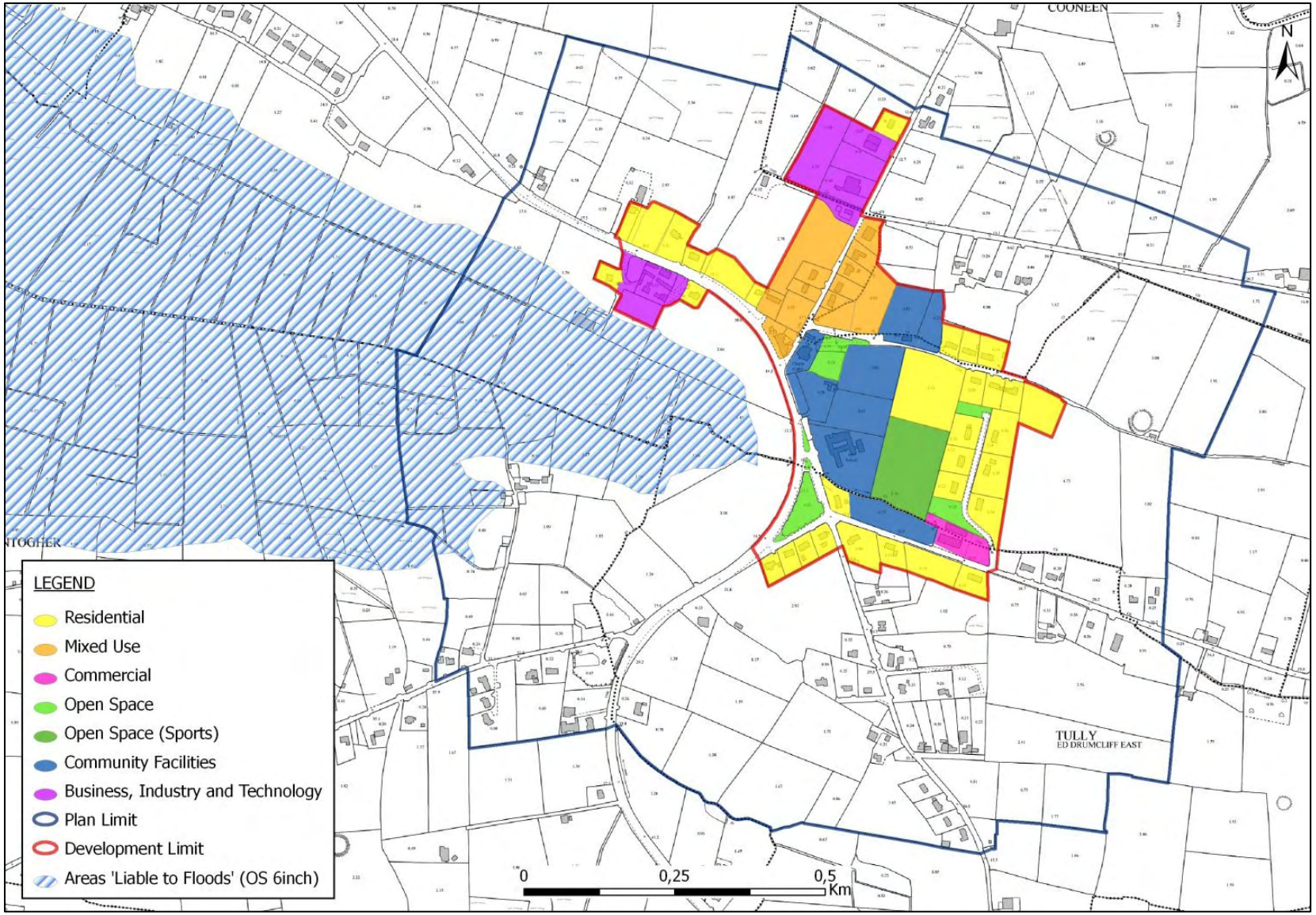

Figure 4 Rathcormack: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

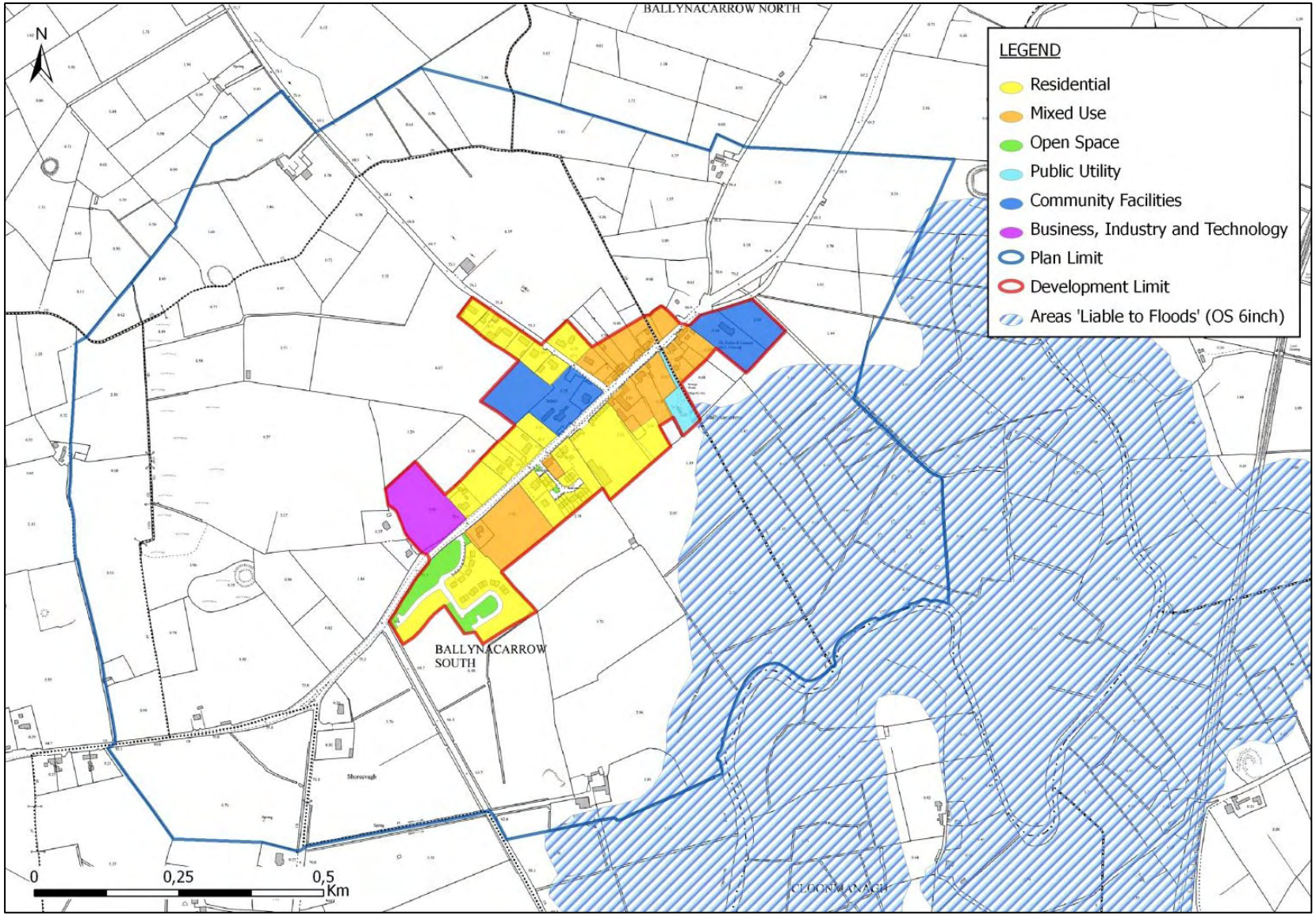

Figure 5 Ballinacarrow: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

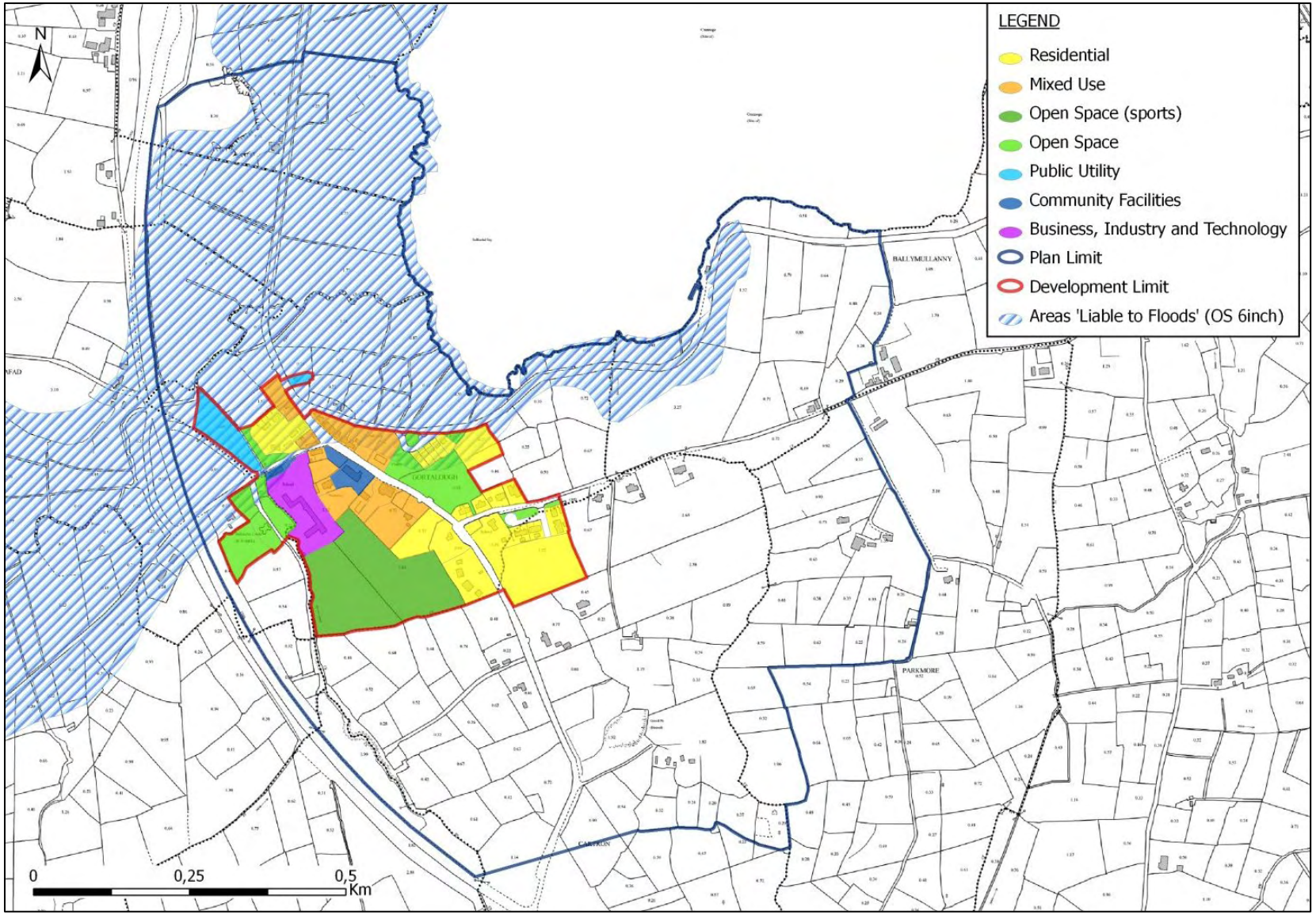

Figure 6 Ballinafad: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

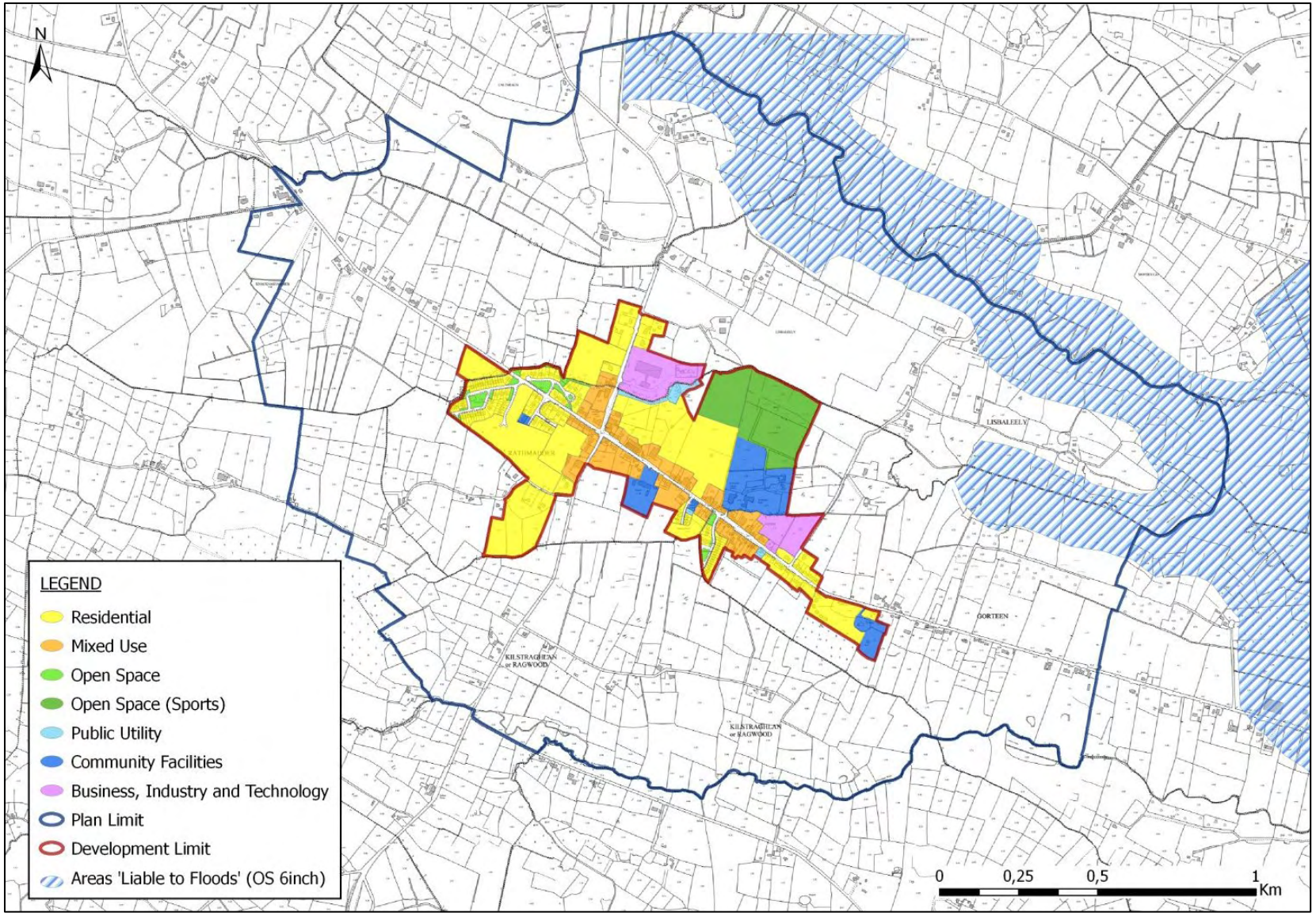

Figure 7 Gorteen: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

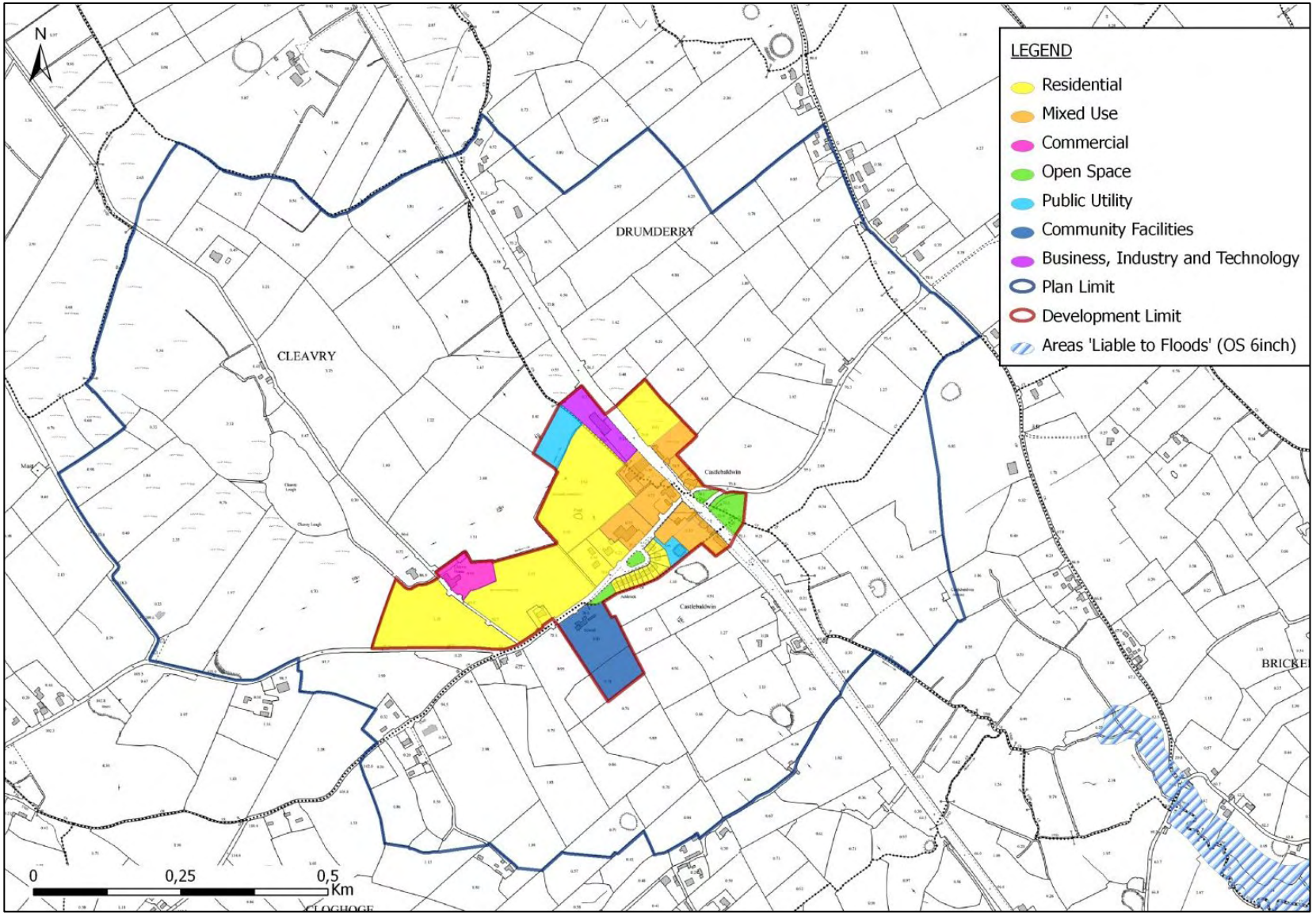

Figure 8 Castlebaldwin: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

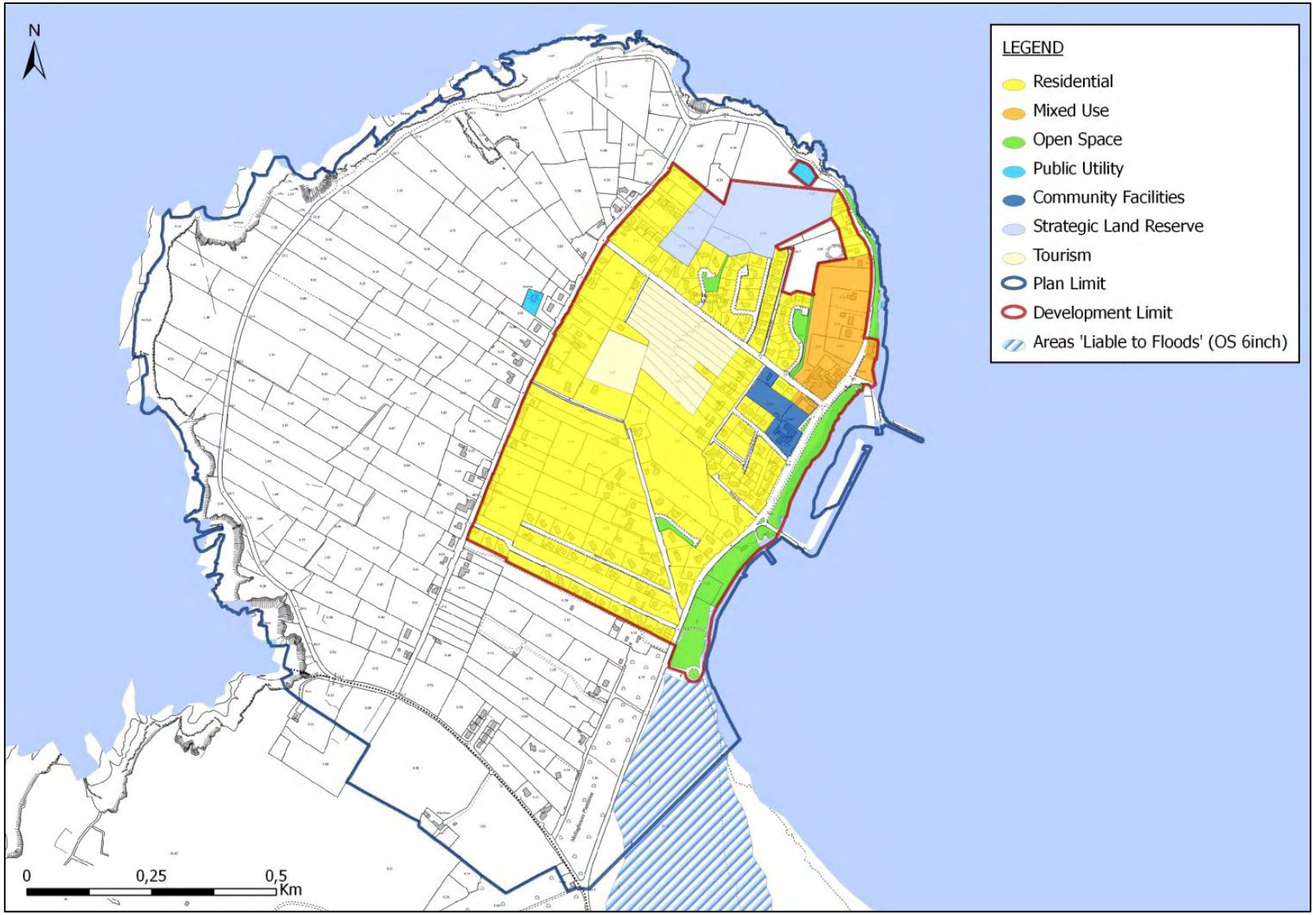

Figure 9 Mullaghmore: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

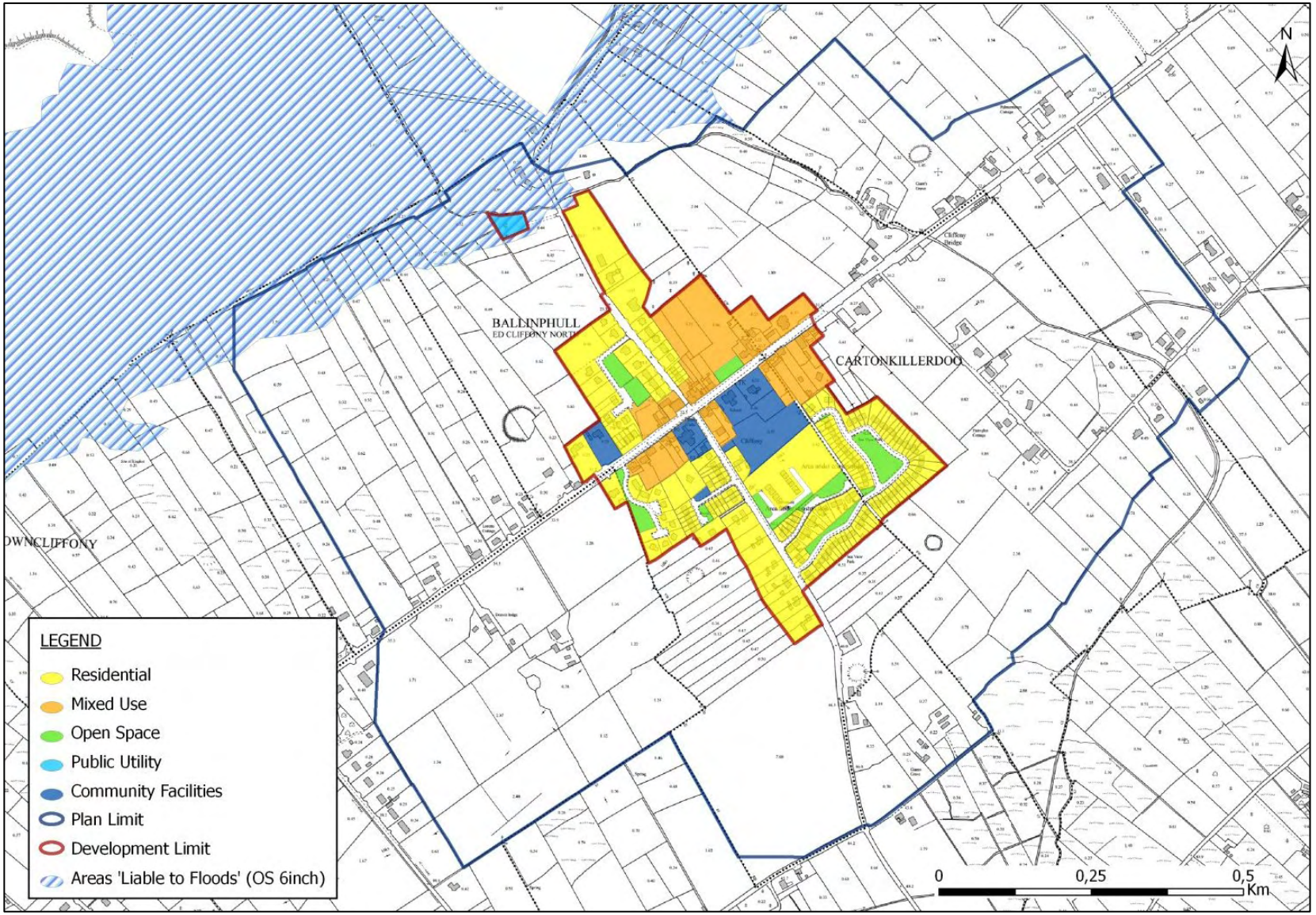

Figure 10 Cliffoney: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping

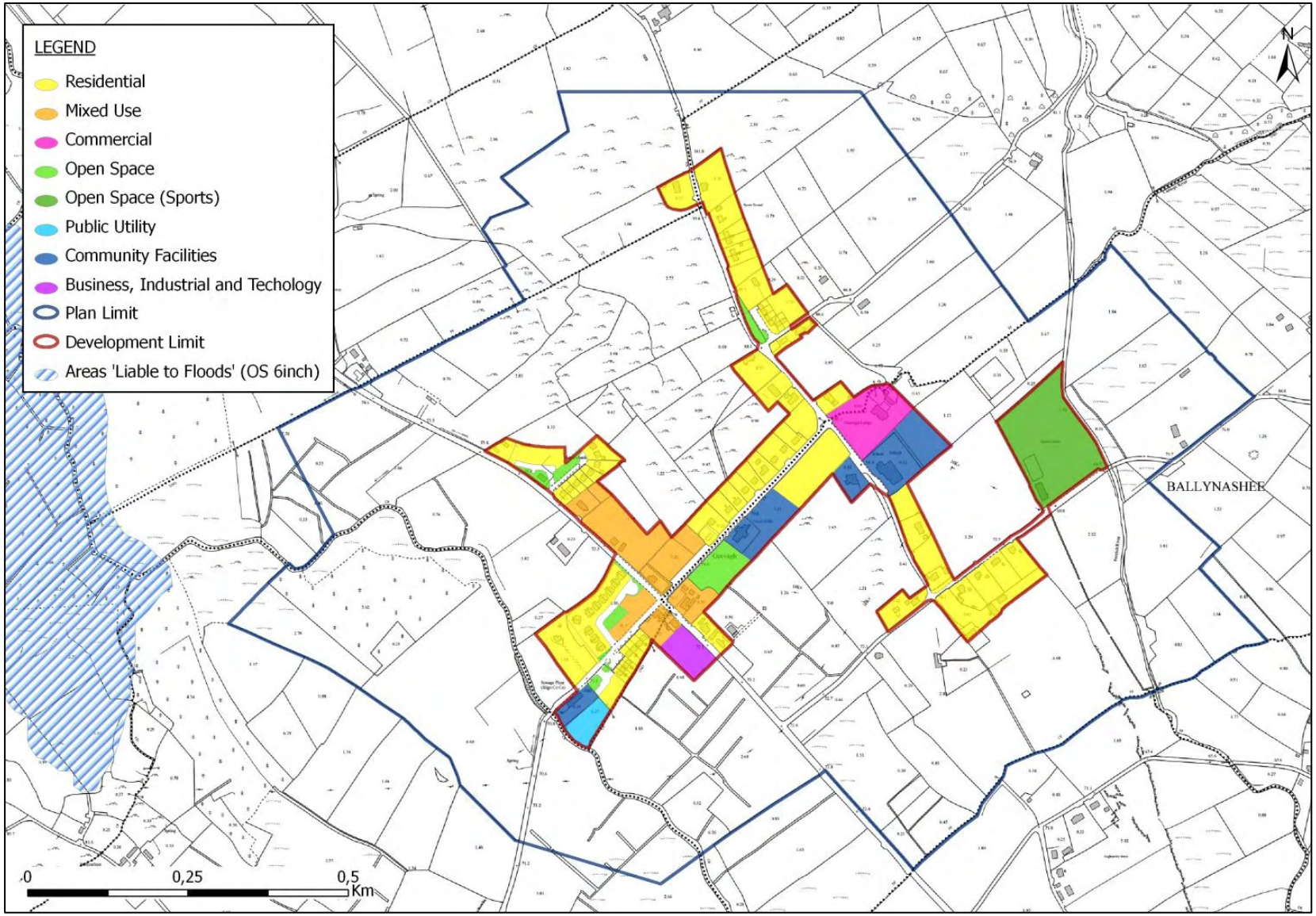

Figure 11 Geevagh: Indicative Maximum Extent of Potential Flood Envelope based on Ordnance Survey Six-Inch Mapping