

# **STRATEGIC FLOOD RISK ASSESSMENT**

## **CASTLEREA LOCAL AREA PLAN 2012–2018**



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## 1 INTRODUCTION

- 1.1 Flooding is a natural process that can happen at any time in a wide variety of locations. Flooding from the sea and from rivers is probably best known but prolonged, intense and localised rainfall can also cause sewer flooding, overland flow and groundwater flooding. Flooding has significant impacts on human activities; it can threaten people's lives, their property and the environment. Assets at risk can include housing, transport and public service infrastructure, and commercial, industrial and agricultural enterprises. The health, social, economic and environmental impacts of flooding can be significant and have a wide community impact.

In the preparation of this assessment reference has been made to the following documents in particular;

- The Planning System and Flood Risk Management, Guidelines for Planning Authorities, DEHLG, November 2009.
- Technical Appendices, The Planning System and Flood Risk Management, Guidelines for Planning Authorities, DEHLG, November 2009.

## 2 OVERVIEW OF THE GUIDELINES

- 2.1 The Planning System and Flood Risk Management Guidelines 2009 have been issued by the Minister of the Environment, Heritage and Local Government under Section 28 of the Planning and Development Act 2000. Planning authorities and An Bord Pleanála are required to have regard to the Guidelines in carrying out their functions under the Planning Acts. They are also required to make the Guidelines available for inspection by members of the public. These Guidelines supersede previous interim guidance on flooding in Appendix E to the Development Plan Guidelines in 2007.
- 2.2 The Planning System and Flood Risk Management Guidelines 2009 introduce comprehensive mechanisms, such as Strategic Flood Risk Assessment (SFRA), for the incorporation of flood risk identification, assessment and management into the planning process. Implementation of the Guidelines will be achieved through actions at the national, regional, local authority and site-specific levels.

### At city and county level:

- Planning authorities will introduce flood risk assessment as an integral and leading element of their development planning functions under the Planning Code and at the earliest practicable opportunity in line with the requirements of these Guidelines.
- The new flood risk assessment system will be aligned with the existing Strategic Environmental Assessment (SEA) process introducing processes for identifying flood risk and determining what flood risk assessment is required and carrying out such assessments similar to the overall system for screening and scoping under the SEA process.
- City and county development plans will establish the flood risk assessment requirements for their functional areas including other planning authorities such as Town Councils and any local area plans (LAP) which may be supplemented by more detailed site-specific flood risk assessment required to comply with these Guidelines.
- Planning authorities will assess planning applications for development in accordance with the provisions of these Guidelines following the guidance of their own or any OPW Strategic Flood Risk Assessment and the application of the sequential approach and, if necessary, the Justification Test required by these Guidelines.
- Planning authorities will ensure that development is not permitted in areas of flood risk, particularly floodplains, except where there are no suitable alternative sites available in

areas at lower risk that are consistent with the objectives of proper planning and sustainable development. Where such development has to take place, in the case of urban regeneration for example, the type of development has to be carefully considered and the risks should be mitigated and managed through location, layout and design of the development to reduce flood risk to an acceptable level.

- Planning authorities will ensure that only developments consistent with the overall policy and technical approaches of these Guidelines will be approved and permission will be refused where flood issues have not been, or cannot be, addressed successfully and where the presence of unacceptable residual flood risks to the development, its occupants or users and adjoining property remains. Under the Planning and Development Act 2000, planning permission refused for the reason that the proposed development is in an area which is at risk of flooding excludes compensation.

### 3 THE STAGES OF THE STRATEGIC FLOOD RISK ASSESSMENT (SFRA)

3.1 The following are the stages in the SFRA procedure;

- Stage 1 **Flood Risk Identification:** to identify whether there may be any flooding or surface water management issues related to a plan area or proposed development site that may warrant further investigation
- Stage 2 **Initial Flood Risk Assessment:** to confirm sources of flooding that may affect a plan area or proposed development site, to appraise the adequacy of existing information and to determine what surveys and modelling approach is appropriate to match the spatial resolution required and complexity of the flood risk issues. The extent of the risk of flooding should be assessed which may involve preparing indicative flood zone maps. Where existing river or coastal models exist, these should be used broadly to assess the extent of the risk of flooding and potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures.
- Stage 3 **Detailed Risk Assessment:** to assess flood risk issues in sufficient detail and to provide a quantitative appraisal of potential flood risk to a proposed or existing development, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures. This will typically involve use of an existing or construction of a hydraulic model of the river or coastal cell across a wide enough area to appreciate the catchment wide impacts and hydrological processes involved.

	Flood risk identification	Initial flood risk assessment	Detailed flood risk assessment
Regional Flood Risk Appraisal	✓	U	U
Strategic Flood Risk assessment – County-wide	✓	P	U
Strategic Flood Risk Assessment – City or town within a county plan	✓	✓	P
Site-specific flood risk assessment	✓	✓	✓

P = Probably needed to meet the requirements of the Justification Test  
 U = Unlikely to be needed  
 ✓ = Required to be undertaken

**Table A3: Flood risk assessment stages required per scale of study undertaken**

This report covers Stage 1 and 2 i.e. flood risk identification and initial flood risk assessment of the Castlerea Local Area Plan.

#### **4 ROSCOMMON COUNTY DEVELOPMENT PLAN 2008 – 2014: POLICIES AND OBJECTIVES CONCERNING FLOODING**

- 4.1 The following information contained within the Roscommon County Development Plan 2008–2014 provides the strategic direction for RCC with respect to Flooding within its functional area.

##### **Development in or near Flood Areas**

Flood risk is a more important issue than when the current Development Plan was being prepared. The Planning and Development Act 2000 lists among suitable reasons for refusing a planning application ‘the proposed development is in an area which is at risk of flooding’.

Flooding is a natural phenomenon of the hydrological cycle. While there are different types and causes of flooding, the most common in County Roscommon are the flooding of rivers especially the Shannon River Catchment. The Office of Public Works completed a flood study for the county and findings indicated that flooding mainly occurs along the eastern bounds with the River Shannon.

The CDP will take cognisance of the OPW Flooding Report and any future reports in relation to flood risk for the County. It is the intention for the duration of this Plan that flood studies will be conducted for all towns within the county as necessary. Developments granted permission in areas close to flood plains will contain measures to ensure that the risks of flooding are minimised or eliminated. The monitoring strategy and appropriate indicators provided for in the Environmental Report for the SEA process will be utilised by Roscommon County Council to provide early flooding warning information for these areas.

The following are the policies and objectives for designated sites which are contained within the RCDP 2008 – 2014.

##### **Policies in relation to Flood Risk & Protection**

###### **Policy 21**

Ensure compliance with the EU Floods Directive 2007/60/EC and the RCDP 2008-2014.

###### **Policy 22**

Have regard to the OPW’s Guidelines on Flood Risk, 2005 and any future reports in relation to flood risk for the Castlerea Area.

##### **Objectives in relation to Flood Risk & Protection**

###### **Objective 24**

Where technically feasible and economically viable improve and extend the surface water disposal infrastructure to serve all zoned areas, in order to facilitate development.

###### **Objective 25**

Require all significant development impacting on flood risk areas to provide a Flood Impact Assessment, to identify potential loss of flood plain storage and how it would be offset in order to minimise impact on the river flood regime.

###### **Objective 26**

It is the policy of Roscommon County Council to require all new large scale developments in all designated settlements to provide ‘Sustainable Urban Drainage Systems (SUDS)’ as part of their development proposals

###### **Objective 27**

Within the Castlerea LAP area, RCC shall;

- 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 amongst 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
- Have regard to the OPW survey of the Shannon River Basin

## 5 BRIEF DESCRIPTION OF THE PLAN

Castlerea is situated north-west of Roscommon Town along the N60 and is approximately 30km from both Roscommon Town and Boyle, 75km from Galway City and 150km from Dublin. The town is situated at the junction of the N60 National Secondary Route and R361 Regional Road.

The river suck intersects the north western end of the town centre flowing adjacent to the site of ‘The Old Mill’ (now part of a residential/commercial development) under the N60 and along the back lands of Main Street and Patrick street. The river Francis, flowing from the north through the demesne meets the river Suck in the back lands of Castlerea close to the centre of the Plan area.

Topographically the Castlerea Plan area is relatively low-lying and slightly undulating with most of the town between the 60m and 80m above sea level Ordnance Datum Malin. There is a distinct yet low ridge to the north east of the town around which the river Francis meanders, north of its confluence with the Suck in the back lands of the town centre. The western end of the town has formed in the suck valley at a point where gradients are generally slight and the river meanders considerably in the low lands to the south of the town. The town is formed around the confluence of the Suck and Francis rivers. The suck which then flows in a generally southerly direction from the town is a major tributary of the Shannon.

The purpose of the Castlerea Local Area Plan 2012-2018 is to provide a framework for the proper planning and sustainable development of the town through the provision of policies and objectives to ensure this. The plan will be in operation for a six year period from 2012 to 2018, unless amended. It aims to co-ordinate the reasonable needs and aspirations of the people of Castlerea, maximise the best-use of its resources, promote its economic and social development, while preserving the best of its natural and built environment and unique character. The plan consists of a written statement and maps which give a graphic representation of the proposals of the plan, and includes land use zoning. In addition, the plan consists of a set of broad aims and provides guidance in the form of policies and objectives for the development of social, physical and environmental infrastructure in a sustainable manner.

The Castlerea Local Area Plan will replace the Castlerea Area Plan which forms part of the Roscommon County Development Plan 2008 – 2014. Large scale additional zoning is not proposed for the lifetime of the 2012-2018 Plan.

In recent years increased development pressure has led to much new development occurring within and around the town, therefore the development boundary proposed as part of the 2008 – 2014 land use plan will be reconsidered as part of this revision process. The process for establishing a new plan boundary will consider the following:

- Aims of the LAP
- Existing development in the town
- National and Regional level policy
- Predicted future population target
- Likely future development needs
- Proper planning and sustainable development

The Housing Strategy for County Roscommon 2008-2014 provides an indicative distribution for the provision of new household formations for the plan period. The figure for Castlerea is 110 new households. This indicative distribution requires flexibility though to address changes in current, emerging and future local circumstances. Sufficient residentially zoned land will be provided to accommodate the population growth over the plan period. As outlined, flexibility is required to address changes in current, emerging and future local circumstance,<sup>1</sup> and to allow enough residentially zoned land to cater for demand, taking into consideration that portions may not be released for development. The plan will also seek to zone sufficient land for community facilities and services to sustain the community during the lifetime of the plan. In addition to considering and meeting the needs of the community, the plan will aim to enhance and protect the built and natural environment taking into consideration the principles of sustainable development.

## **6 STAGE 1 FLOOD RISK IDENTIFICATION**

This stage included a review of existing information in order to identify any flooding and surface water management issues in the plan area which may require further investigation. A review of OPW data and local information was carried out as well as other sources of information as indicated in the Planning System and Flood Risk Management Guidelines 2009 (see Appendix 1).

According to the OPW National Flood Hazard Mapping (see Map 1 below), there is only one recorded recurring flood event within the plan boundary and no other recorded flood event within a 2.5km radius. The recorded flood event in Castlerea is at the confluence of rivers Suck and Francis junction of recurring during periods of high intensity rain. Flooding occurs at this confluence during the winter after periods of heavy rain. The area engineer indicates that approximately 30 acres are affected close to Castlerea. The OPW flood Hazard Mapping Report for this event indicates that no property or roads are flooded. The report also indicates that this area is coming under development pressure.

Although local information indicates that there are no further significant areas of flooding within or adjacent to Castlerea town, there are alluvial deposits within the Suck and Francis river valleys within the plan boundary (see Map 1 below). Alluvial deposits indicate areas that have flooded in the past.

These significant alluvial deposits along the course of the Rivers Suck and Francis, running generally north to south and east to west through the town respectively are within the plan boundary to the south of the town, (see Map 1 below). The course of the Francis where these deposits occur is primarily within the demesne (a public park to the north of the town) where the primary land use is open space, recreation and amenity of agricultural. The Course of the Suck where the deposits occur delimits the southern boundary of the town core with a significant proportion of the main street backing onto the river itself.

The old 6 inch OS map also indicates that the lands immediately to the south of the confluence of the Suck and Francis rivers as 'liable to flooding' and it is considered that they form the natural floodplain of the river suck.

Lands to the north east of the town at Rampark are also indicated on the 6" OS Map as 'Liable to Flooding' though these lands have not been recorded as prone to flooding on the OPW flood report for the Castlerea area. These lands are prone to ponding and occasional flooding after periods of heavy rain. These lands are outside the development boundary of the town and are in agricultural use.

As there are areas of concern within the plan boundary which could potentially be affected by development taking place under this LAP, the process will move onto Stage 2 Initial Flood Risk Assessment.

<sup>1</sup> Housing Strategy for County Roscommon, 2008, p.29

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## 7 STAGE 2 INITIAL FLOOD RISK ASSESSMENT

The purpose of the initial FRA is to ensure that all relevant flood risk issues are assessed in relation to the decisions to be made. It also ensures that potential conflicts between flood risk and development are addressed to the appropriate level of detail.

As indicated there is one recorded flood event on the OPW database within the LAP area at the confluence of the Suck and Francis Rivers. There are no recorded flood extents associated with this event. With regard to the recurring flooding at the confluence of the rivers Suck and Francis in the Southern Backlands of the town, from local information and from the OPW flood report it appears that this flood event poses no significant flood risk to roads and property in the area. This was borne out in the recent flood crisis, November 2009, as there were no significant issues with regard significant flooding in this area at that time. The results of a photographic survey of the Southern Backlands of the Town adjacent to the Suck riverbanks have been included for reference in appendix 2.

It is therefore considered that, as the event is minor in nature, and that the LAP does not represent a significant flood risk in the area provided that lands are reserved within the natural flood plane of the Suck, close to its confluence with the Francis to accommodate flooding. All of the lands in the immediate vicinity of this flood event point are designated for 'Greenbelt' land use in the Castlerea LAP 2012-2018, which constitutes a much more precautionary approach to land use zoning policy for lands south of the Suck River than that of the 2008 County Development Plan.

A flood risk report was undertaken in 2008 for a commercial development (Planning Register Ref. No.PD/08/1131) on a site within the southern backlands of the town on the northern bank of the Suck close to its confluence with the Francis River. The report indicated that with limited filling the flood risk was not significant (1.2m above 100 year return period level with a 20% climate change factor). The externalities for lands upstream and downstream were reported at 1mm and negligible. Notwithstanding, significant development on adjacent lands within the flood-plane with associated filling to offset flood risk may have further cumulative implications for upstream or downstream lands both within and outside the Plan area.

The Flood Risk Management Guidelines recommend a Sequential Approach for taking account of flood risk. The sequential approach works by guiding development away from areas that have been identified through a flood risk assessment as being at risk from flooding. In accordance with this approach, lands within the vicinity of the flood point identified at the confluence of the rivers Suck and Francis will be for Greenbelt land use to accommodate recurring flood events. In this regard, the avoidance principle of the sequential approach has been met.

As mitigation measures have been identified to ensure, firstly that any development taking place will not exacerbate the existing problems and secondly, which will prevent the recurrence of flooding, it is not considered necessary to proceed to Stage 3, Detailed Flood Risk Assessment.

## 8 CONCLUSION

As a result of the initial Flood Risk Identification and Initial Flood Risk Assessment (Stages 1 & 2) it has been concluded that as mitigation measures have been identified to ensure firstly that any development taking place will not exacerbate the existing problems and secondly which will prevent the recurrence of flooding, it is not considered necessary to subject the Castlerea Local Area Plan 2012–2018 to Stage 3, Detailed Flood Risk Assessment.

## 9 APPENDIX 1

Table A4: Information sources appropriate for the identification of flood risk<sup>2</sup>

Information Source	Scale of Assessment	Used in Assessment	Comment
	SFRA CITY		
OPW Preliminary Flood Risk Assessment indicative fluvial flood maps;	√	No	Not currently available.
National Coastal Protection Strategy Study flood and coastal erosion risk maps;	√	N/A	Not applicable.
Predictive and historic flood maps, and Benefiting Lands Maps, such as those at <a href="http://www.floodmaps.ie">http://www.floodmaps.ie</a> ;	√	Yes	Only historic flood mapping is currently available. The historic flood mapping indicated one recurring flood event as indicated on Map 1.
Predictive flood maps produced under the CFRAM Studies;	√	No	Not currently available.
River Basin Management Plans and reports;	√	Yes	The Shannon River Basin Management Plan 2009-2015 was reviewed.
Indicative assessment of existing flood risk under Preliminary Flood Risk Assessment;	√	No	Preliminary Flood Risk Assessment not yet available.
Previous Strategic Flood Risk Assessments;	√	No	Flood risk Assessment undertaken by Bright Square Properties in December 2008 in relation to development on lands close to the confluence of the Suck and Francis Rivers
Expert advice from OPW who may be able to provide reports containing the results of detailed modelling and flood-mapping studies, including critical drainage areas, and information on historic flood events, including flooding from all sources;	√	Yes	Historic flood maps were reviewed.
Consultation with Local Authorities who may be able to provide knowledge on historic flood events and local studies etc.	√	Yes	Water Services Section of RCC and Castlerea Area Engineer and Area Planner consulted.

<sup>2</sup> Page 9-10, Technical Appendices, The Planning System and Flood Risk Management, Guidelines for Planning Authorities, DEHLG, November 2009

Topographical maps, in particular digital elevation models produced by aerial survey or ground survey techniques;	√	Yes	Most up-to-date OSI aerial photography available for the area was reviewed i.e. 2004-2006. No additional flooding events were noted.
Information on flood defence condition and performance;	√	N/A	Not applicable, no flood defence measures in the area.
Alluvial deposit maps of the Geological Survey of Ireland (which would allow the potential for the implementation of source control and infiltration techniques, groundwater and overland flood risk to be assessed). These maps, while not providing full coverage, can indicate areas that have flooded in the past (the source of the alluvium) and may be particularly useful at the early stages of the FRA process where no other information is available;	P	Yes	EPA soil and subsoil mapping was reviewed and some alluvial deposits were identified in and adjacent to Castlerea as indicated on Map 1.
'Liable to flood' markings on the old '6 Inch' maps;	P	Yes	One area 'liable to flooding' were noted to the south of the town within the Plan boundary (see Map 1).
Local libraries and newspaper reports;	√	Yes	No new flood events noted. The Castlerea area was not seriously affected during the November 2009 floods.
Interviews with local people, local history / natural history societies etc;	S	Yes	Interviewed local people during site visits as well as Area Engineer.
Walkover survey to assess potential sources of flooding, likely routes for flood waters and the site's key features, including flood defences, and their condition; and	S	Yes	Site visit carried out which included walkover survey of plan area, in particular along watercourses in the area and areas of recurring flooding.
National, regional and local spatial plans, such as the National Spatial Strategy (NSS), regional planning guidelines (RPGs), development plans and local area plans provide key information on existing and potential future receptors.	√	Yes	Plans reviewed include the NSS, RPGs for the West 2004-2016, RPGs for the West 2010-2022, Roscommon County Development Plan 2008-2014 and Castlerea Area Plan 2008-2014.

**P** = Possible source of information but not primary or essential, especially if better information exists from more detailed studies.

**S** = Selective source depending on scale of issues and could be delayed until initial flood risk assessment stage.

**√** = Primary source. This will be readily available information once CFRAMS have been completed, but in order to examine all development allocations within a plan further research from secondary sources will be required.

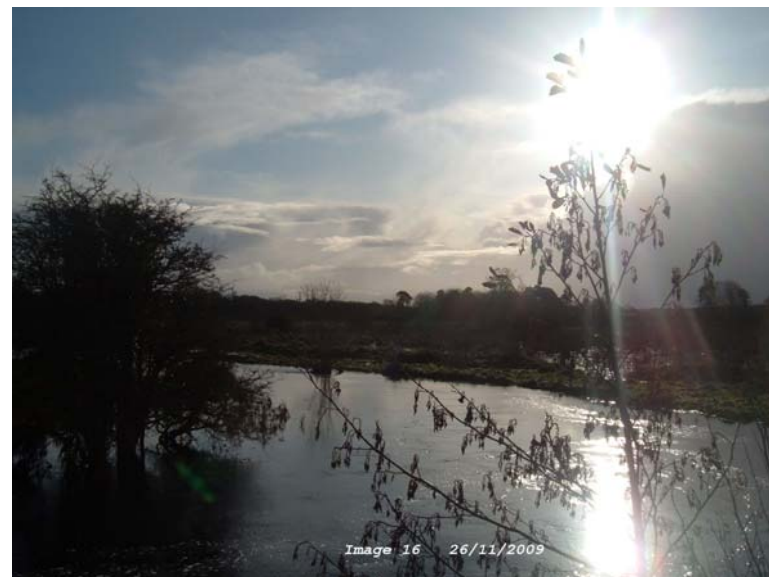
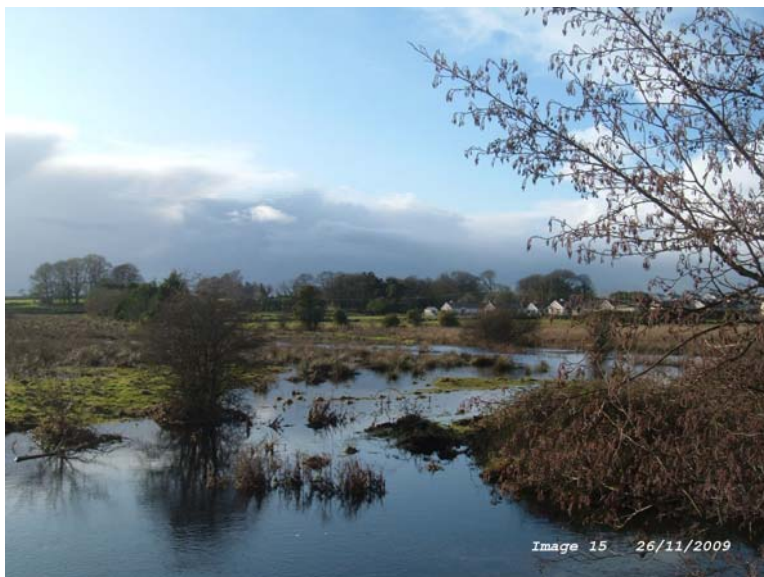
**N/A** = Not appropriate or not applicable.

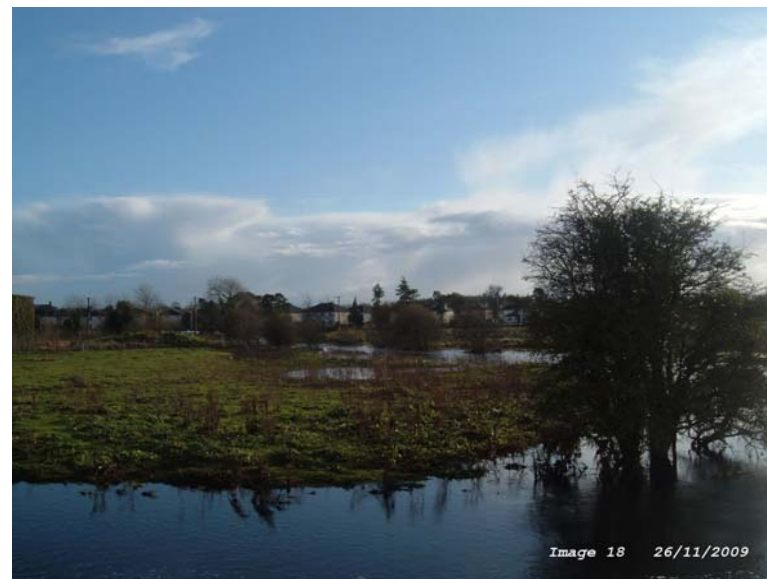
10 APPENDIX 2

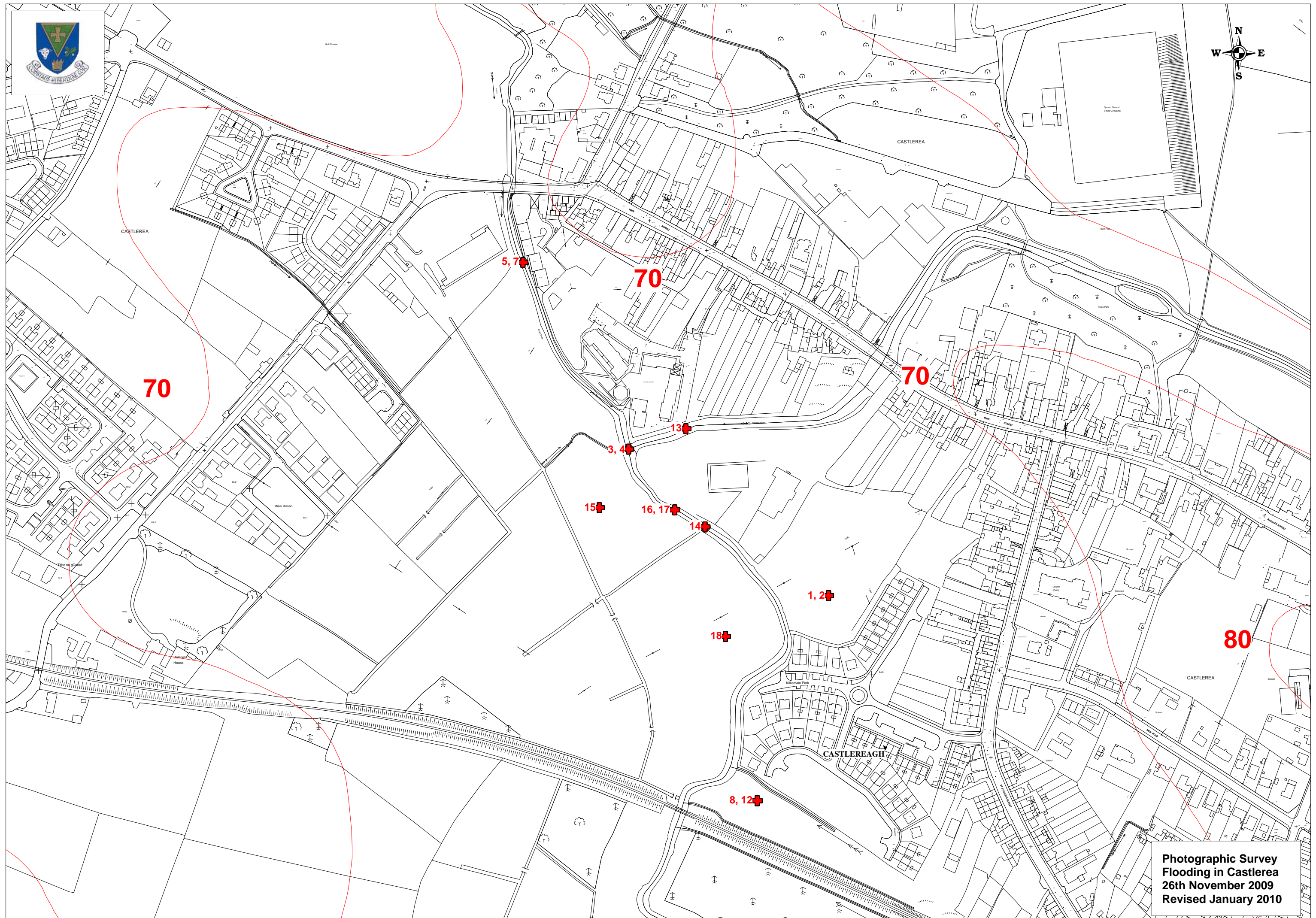
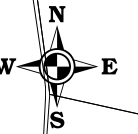












**Photographic Survey  
Flooding in Castlereia  
26th November 2009  
Revised January 2010**