

***Comhairle Bhaile Chill Dara***  
**Kildare County Council**



**DRAFT STRATEGIC FLOOD RISK ASSESSMENT**

---

**SALLINS DRAFT LOCAL AREA PLAN 2015 - 2021**

---

**Kildare County Council  
Planning Department  
Aras Chill Dara  
Devoy Park  
Naas  
County Kildare**

**11049-LAP Sallins  
Issue No.01**

**Kilgallen & Partners  
Consulting Engineers  
Well Road,  
Kylekiproe  
Portlaoise  
Co. Laois**

**REVISION HISTORY**

<b>Project:</b>	<b>SALLINS DRAFT LOCAL AREA PLAN</b>
<b>Title:</b>	<b>DRAFT STRATEGIC FLOOD RISK ASSESSMENT</b>

<b>Date</b>	<b>Description</b>	<b>Origin</b>	<b>Checked</b>	<b>Approved</b>	<b>Issue</b>
19.06.15	Initial Issue	PB	MK	PB	01

**INDEX**

	<b>Page</b>
<b>1.0 INTRODUCTION</b>	<b>1</b>
1.1 Requirement for Flood Risk Assessment	
1.2 The Planning Guidelines and Flood Risk Management	
1.3 Structure of a Flood Risk Assessment (FRA)	
1.4 The Flood Risk Assessment Process for The Planning Authority	
1.5 Key Outputs from the SFRA	
<b>2.0 FLOOD RISK</b>	<b>6</b>
2.1 Components of Flood Risk	
2.2 Source – Pathway – Receptor Model	
<b>3.0 EUROPEAN, NATIONAL AND REGIONAL POLICY</b>	<b>7</b>
3.1 European Policy	
3.2 National Policy	
3.3 Regional Policy	
<b>4.0 STRATEGIC FLOOD RISK ASSESSMENTS – SALLINS LOCAL AREA PLAN</b>	<b>12</b>
4.1 Introduction	
4.2 Available Flood Risk Data	
4.3 Flood Risk Indicators	
4.4 Recommendations for modification to or additional assessment of land-use proposals	
4.5 Forthcoming Information to Inform Future Flood Risk Consideration	
<b>5.0 MONITORING AND REVIEW</b>	<b>17</b>

## **APPENDICES**

- Appendix I**      **Land-Use Map for Draft Sallins LAP 2015 - 2021**
- Appendix II**      **Maps showing recommendations of SFRA after completion of Detailed FRA**
- Appendix II**      **Maps showing findings of Initial Assessment including those areas for which Site-Specific Flood Risk Assessment was recommended**

## **LIST OF FIGURES**

- Figure 1:**      Source-Pathway-Receptor Model      **Page 6**  
(adapted from [www.floodsite.net](http://www.floodsite.net))

## **LIST OF TABLES**

- Table 1:**      Flood Risk Indicators for Sallins      **Page 14**

## **1.0 INTRODUCTION**

### **1.1 Requirement for Flood Risk Assessment**

Kildare County Council is in the process of preparing the Sallins Draft Local Area Plan in accordance with the Core Strategy and the requirements and provisions of the Planning and Development Act 2000 (as amended).

In accordance with Section 28 of the Planning and Development Act 2000 as amended, the planning authority shall have regard to any guidelines issued by the Minister of the Environment, Heritage and Local Government to planning authorities in the performance of their functions including the preparation of Development Plans.

In response to the recommendations of the National Flood Policy Review Group the Minister published statutory planning guidelines entitled "*The Planning System and Flood Risk Management – Guidelines for Planning Authorities*" on 30 November 2009 [the Guidelines] which incorporate flood risk assessment and management into the planning system. The Guidelines focus on providing for comprehensive consideration of flood risk in preparing Regional Plans, Development Plans and Local Area Plans, and in determining applications for planning permission.

The Guidelines were issued under Section 28 of the Planning and Development Act 2000 as amended, and require Planning Authorities to introduce flood risk assessment as an integral and leading element of their development planning functions. This is achieved by ensuring that the various steps in the process of making or varying a development plan, together with the associated Strategic Environmental Assessment (SEA), are supported by an appropriate Strategic Flood Risk Assessment (SFRA).

Kilgallen and Partners Consulting Engineers have been appointed by Kildare County Council to undertake a Strategic Flood Risk Assessment (SFRA) for the Sallins Local Area Plan in accordance with the Core Strategy and in accordance with the Guidelines referenced above.

It is recommended that the SFRA is adopted as a 'Living Document' and reviewed regularly and updated with any new relevant information that may become available during the lifetime of the Sallins Local Area Plan.

It is the responsibility of each applicant for planning permission to determine the flood risk pertaining to the lands on which development is proposed and to include appropriate mitigation works as part of the proposed development for which permission is sought.

## 1.2 The Planning Guidelines and Flood Risk Management

The assessment of flood risk requires an understanding of the source of the floodwaters, the process and direction of flow and the people and assets affected by flooding. The Guidelines introduce the mechanism of Flood Risk Assessment (FRA) into the planning process by the incorporation of flood risk identification, assessment and management.

The core objectives of the Guidelines 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 water run-off;
- Ensure effective management of residual risks for development permitted in floodplains;
- Avoid unnecessary restriction of national, regional or local economic growth;
- Improve the understanding of flood risk among relevant stakeholders;
- Ensure that the requirements of the EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

These core objectives are achieved through the process of Flood Risk Assessments. The level of detail required for a Flood Risk Assessment depends on the purpose of the FRA. In the subject case of the Sallins Local Area Plan, a Strategic Flood Risk Assessment (SFRA) is required to inform the plan making process.

To achieve the objectives of the Guidelines, the following principles are applied:

- Avoid the risk, where possible
- Substitute less vulnerable uses where avoidance is not possible, and
- Mitigate and manage the risk, where avoidance and substitution is not possible.

### 1.3 Structure of a Flood Risk Assessment (FRA)

The Guidelines recommend that a staged approach is adopted when undertaking a Flood Risk Assessment (FRA). The recommended stages are briefly described below:

- **Stage 1** ~ Flood Risk Identification  
To identify whether there may be any flooding or surface water management issues that will require further investigation. This stage mainly comprises a comprehensive desk study of available information to establish whether a flood risk issue exists or whether one may exist in the future.
- **Stage 2** ~ Initial Flood Risk Assessment  
If a flood risk issue is deemed to exist arising from the Stage 1 Flood Risk Identification process, the assessment proceeds to Stage 2 which confirms the sources of flooding, appraises the adequacy of existing information and determines the extent of additional surveys and the degree of modelling that will be required. Stage 2 must be sufficiently detailed to allow the application of the sequential approach (as described in Section 1.4.2 herein) within the flood risk zone.
- **Stage 3** ~ Detailed Flood Risk Assessment  
Where Stages 1 and 2 indicate that a proposed area of possible zoning or development may be subject to a significant flood risk, a Stage 3 Detailed Flood Risk Assessment must be undertaken.

### 1.4 The Flood Risk Assessment Process for the Planning Authority

#### 1.4.1 Scales of Flood Risk Assessments

Flood Risk Assessments are undertaken at different scales by different organisations for many different purposes. The scales are as follows:

- Regional Flood Risk Appraisal (RFRA): A Regional Flood Risk Appraisal provides a broad overview of the source and significance of all types of flood risk across a region and highlights areas where more detailed study will be required. These appraisals are undertaken by regional authorities.
- Strategic Flood Risk Assessment (SFRA): A Strategic Flood Risk Assessment provides a broad (area-wide or county-wide) assessment of all types of flood risk to inform strategic land use planning decisions. The SFRA allows the Planning Authority to undertake the sequential approach (described below) and identify how flood risk can be reduced as part of the development plan process.
- Site Flood Risk Assessment (Site FRA): A Site FRA is undertaken to assess all types of flood risk for a new development. This requires identification of the sources of flood risk, the effects of climate change on the flood risk, the impact of the proposed development, the effectiveness of flood mitigation and management measures and the residual risks that then remain.

### **1.4.2 The Sequential Approach**

The sequential approach in terms of flood risk management is based on the following principles: **AVOID - SUBSTITUTE - JUSTIFY - MITIGATE – PROCEED.**

The primary objective of the sequential approach is that development is primarily directed towards land that is at low risk of flooding (AVOID).

The next stage is to ensure that the type of development proposed is not especially vulnerable to the adverse impacts of flooding (SUBSTITUTION).

The Justification Test is designed to rigorously assess the appropriateness, or otherwise, of particular developments that, for various reasons, are being considered in areas of moderate or high flood risk (JUSTIFICATION). The test is comprised of two processes, namely The Plan-Making Justification Test and The Development Management Justification Test. Only the former (Plan-Making Justification Test) is relevant to a Strategic Flood Risk Assessment for a Development Plan, and this is described as follows.

#### The Plan-Making Justification Test

Where, as part of the preparation and adoption of a development / local area plan, a planning authority is considering the future development of areas in an urban settlement that are at moderate or high risk of flooding, for uses or development vulnerable to flooding that would generally be inappropriate as set out in the Guidelines, all of the criteria listed below, as stated in the Guidelines, must be satisfied. This is referred to as the "*Justification Test For Development Plans*":

- (I) *The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, as amended.*
- (II) *The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:*
  - (i) *Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;*
  - (ii) *Comprises significant previously developed and/or under-utilised lands;*
  - (iii) *Is within or adjoining the core of an established or designated urban settlement;*
  - (iv) *Will be essential in achieving compact or 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.*
- (III) *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."*

MITIGATION is the process where the flood risk is reduced to acceptable levels by means of land use strategies or by means of detailed proposals for the management of flood risk and surface water, all as addressed in the Flood Risk Assessment.

The decision to PROCEED should only be taken after the Justification Test has been passed.

### **1.5 Key Outputs from the SFRA**

The key outputs are:

- To provide for an improved understanding of flood risk issues within the Development Plan and development management process, and to communicate this to a wide range of stakeholders;
- To produce an assessment of existing flood defence infrastructure and the consequences of failure of that infrastructure and to identify areas of natural floodplain to be safeguarded;
- To produce a suitably detailed flood risk assessment that supports the application of the sequential approach in key areas where there may be tension between development pressures and avoidance of flood risk;
- To inform, where necessary, the application of the Justification Test;
- To conclude whether measures to deal with flood risks to the area proposed for development can satisfactorily reduce the risks to an acceptable level while not increasing flood risk elsewhere;
- To produce guidance on mitigation measures, how surface water should be managed and appropriate criteria.

## 2.0 FLOOD RISK

### 2.1 Components of Flood Risk

Flood Risk is defined as a combination of the likelihood of flooding occurring and the potential consequences arising from that flooding.

The likelihood of flooding is defined in the Guidelines as follows:

*"Likelihood of flooding is normally defined as the percentage probability of a flood of a given magnitude or severity occurring or being exceeded in any given year."*

The consequences of flooding depend on the following:

*"Consequences of flooding depend on the hazards associated with the flooding (e.g. depth of water, speed of flow, rate of onset, duration, wave action effects, water quality), and the vulnerability of people, property and the environment potentially affected by a flood (e.g. the age profile of the population, the type of development, presence and reliability of mitigation measures etc)."*

### 2.2 Source-Pathway-Receptor Model

The Source – Pathway – Receptor Model (SPR Model) is a widely applied model which is used to assess and inform the management of environmental risk.

- **Source** - The origin of a hazard (for example, heavy rainfall, strong winds, surge etc).
- **Pathway** - Route that a hazard takes to reach Receptors. A pathway must exist for a Hazard to be realised.
- **Receptor** - Receptor refers to the entity that may be harmed (a person, property, habitat etc.).

For example, in the event of heavy rainfall (*the source*) flood water may propagate across the flood plain (*the pathway*) and inundate housing (*the receptor*). The vulnerability of a receptor can be modified by increasing its resilience to flooding.

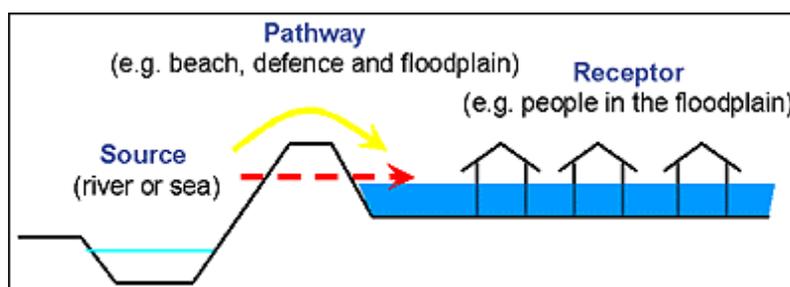


Figure 1: Source-Pathway-Receptor Model (adapted from [www.floodsite.net](http://www.floodsite.net))

### **3.0 EUROPEAN, NATIONAL AND REGIONAL POLICY**

#### **3.1 European Policy**

##### ***3.1.1 EU Floods Directive***

[http://ec.europa.eu/environment/water/flood\\_risk/index.htm](http://ec.europa.eu/environment/water/flood_risk/index.htm)

Directive 2007/60/EC on the assessment and management of flood risks became operative on 26<sup>th</sup> November 2007. This Directive requires Member States to assess the risks of flooding along all watercourses and coast lines. It also requires Member States to map the extent of potential flooding in each case, determine the assets and humans at risk in the areas and to take adequate and coordinated measures to reduce this flood risk. The aim of the Directive is to reduce and manage the risks posed by flooding to human health, the environment, cultural heritage and economic activity.

Member States are required by 2011 to carry out a preliminary assessment identifying the river basins and the coastal areas at risk of flooding. For such zones, flood risk maps are required to be drawn up by 2013 and Member States are required to establish flood risk management plans focused on prevention, protection and preparedness by 2015. The Directive applies to inland waters and to all coastal waters across the whole territory of the EU.

##### ***3.1.2 EU Water Framework Directive***

[www.wfdireland.ie](http://www.wfdireland.ie)

The Water Framework Directive, which came into force on December 22<sup>nd</sup> 2000, established a new and integrated approach to the protection, improvement and sustainable use of Europe's rivers, lakes, estuaries, coastal waters and groundwater. It impacts on the management of water quality and water resources and affects conservation, fisheries, flood defence, planning and environmental monitoring.

The primary focus of the Directive is to achieve 'good' ecological status for all waters by 2015.

## **3.2 National Policy**

### ***3.2.1 Planning Guidelines "The Planning System and Flood Risk Management"***

The *Planning System and Flood Risk Management* Guidelines were prepared in response to the recommendations of the National Flood Policy Review Group and focused on providing for comprehensive consideration of flood risk in preparing Regional Plans, Development Plans and Local Area Plans, and in determining applications for planning permission.

The Guidelines generally require 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.

### ***3.2.2 Transposition and Implementation of the EU Floods Directive***

On 19<sup>th</sup> March 2010, the Statutory Instrument transposing the EU 'Floods' Directive was signed into Irish law. The Statutory Instrument appointed the Commissioners of Public Works in Ireland as the Competent Authority under the Directive. The Statutory Instrument also identified roles for other organisations, such as the Local Authorities, Waterways Ireland and ESB, to undertake certain duties with respect to flood risk within their existing areas of responsibility.

### ***3.2.3 Office of Public Works***

The Office of Public Works is the lead agency for flood risk management in Ireland and is responsible for the coordination and implementation of Government policy on this issue. 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, preparation of flood risk mapping by 2013 and preparation of flood risk management plans by 2015. It is the principal agency involved in the preparation of Catchment Flood Risk Assessment and Management Studies.

### **3.3 Regional Policy**

#### ***3.3.1 Introduction***

For the purposes of regional planning, the Mid-East Regional Authority and the Dublin Regional Authority have partnered to produce Regional Planning Guidelines for the Greater Dublin Area ([www.rpg.ie](http://www.rpg.ie)).

On the 15<sup>th</sup> of June 2010, Regional Planning Guidelines for the Greater Dublin Area 2010~2022 were made. The guidelines give regional effect to the National Spatial Strategy and guide the development plans in each Local Authority area. The guidelines have effect for six years.

The guidelines contain a Regional Flood Risk Appraisal (RFRA), which is a high-level broad-brush appraisal of flood risk across an entire regional authority area, based on existing readily available information.

Paragraphs 3.3.2 to 3.3.5 herein present a summary of the Regional Flood Risk Appraisal together with an outline of the main outputs of relevance to the Sallins Local Area Plan.

#### ***3.3.2 Regional Flood Risk Appraisal Process***

The RFRA process examines the issue of major flood risk from river, estuarine and coastal flooding and does not examine groundwater or artificial drainage flood events. The process of preparing the RFRA involved the mapping of historical flood events in the Greater Dublin Area (GDA) to provide a general indication at a regional scale of where flood vulnerable locations are located in the GDA.

The mapping of alluvial soils indicating flood plain locations in the GDA was also examined at a regional level.

The studies indicate that significant sections of the built up area of Dublin together with key towns in the GDA are vulnerable to flooding, particularly along the coast, near estuaries and lands proximate to the rivers flowing through the region.

#### ***3.3.3 Strategic Policies and Recommendations for Regional Flood Risk Management***

- **Strategic Policy FP1:** That flood risk be managed pro-actively at all stages in the planning process by avoiding development in flood risk areas where possible and by reducing the risks of flooding to and from existing and future development.
- **Strategic Recommendation FR1:** New development should be avoided in areas at risk of flooding. Alongside this, the Regional Flood Risk Appraisal recognises the need for continuing investment and development within the urban

centres of flood vulnerable designated growth towns and the City and for this to take place in tandem with the completion of Catchment Flood Risk Assessment and Management (CFRAM) Studies and investment in comprehensive flood protection and management.

- **Strategic Recommendation FR2:** Development and Local Area Plans should include a Strategic Flood Risk Assessment and all future zoning of land for development in areas at risk of flooding should follow the sequential approach set out in the Departmental Guidance on Flood Risk Management. All Flood Risk Assessments and CFRAM studies should take place in coordination and consultation with adjoining local authorities and regions and in coordination with the relevant River Basin Management Plans.
- **Strategic Recommendation FR3:** Local authorities should take the opportunities presented to optimise improvements in biodiversity and amenity when including policies and actions in development plans/local area plans (such as flood plain protection and SuDS) for existing and future developments.
- **Strategic Recommendation FR4:** Plans and projects associated with flood risk management that have the potential to negatively impact on Natura 2000 sites will be subject to a Habitats Directive Assessment (HDA) according to Article 6 of the habitats directive and in accordance with best practice and guidance.

### ***3.3.4 Role of Local Authorities (from RFRA)***

Local Authorities must take account of the issues raised in this Regional Flood Risk Appraisal and undertake Strategic Flood Risk Assessment for future Development and Local Area Plans in line with the Department's Guidance on the Planning System and Flood Risk Management Guidelines. Local Authorities should ensure that they adhere to the principles of avoiding risk where possible in preparing such future Plans.

The Regional Planning Guidelines seek to emphasise the need to protect across the Greater Dublin Area the natural flood plains and riparian corridors of all rivers that have not already been built on, and seek that this is explicitly stated and spatially designated in all future Development and Local Area plans following the completion of CFRAM studies for the area in question. In the absence of the CFRAM studies, Planning Authorities should identify the areas at risk using other data such as data that is available from the OPW, available historical information (mapped or otherwise), and if necessary, through additional studies or investigations.

Land required for current and future flood management should be safeguarded from development.

Allocation of future areas for development as extensions to existing built up areas, villages or towns should follow a sequential approach; be within the lowest risk sites appropriate for the development; and should include adequate provision for adaptation to, or protection against, the projected impacts of climate change.

### ***3.3.5 Recommendations from Regional Flood Risk Appraisals***

In the preparation of future Development and Local Area Plans, Local Authorities are advised to:

- Identify and consider at the earliest stage in the planning process flood hazard and potential risk.
- Identify flood risk areas on the Development Plan and Local Area Plan maps.
- Review existing Development Plans and Local Area Plans to ensure that the issue of Flood Risk has been addressed in a manner consistent with the Flood Risk Management Guidelines.
- Where lands are already zoned for housing or other vulnerable development in flood risk areas, the Planning Authority should undertake a re-examination of the zoning in accordance with the sequential approach. Regional Planning Guidelines may need to identify Plans which will require a variation to take account of flood risk assessments.
- Include policies which ensure that flood risk areas targeted for development following the sequential approach should be planned, designed and constructed to reduce and manage flood risk and be adaptable to changes in climate.
- Include policies to ensure that flood risk and impact is considered as a key element in the assessment of future waste and mineral planning strategies and developments.
- Include policies that ensure that the location of key infrastructure will be subject to flood risk assessment.
- Include policies on the importance of the inclusion of Sustainable Drainage Systems (SuDS) in future developments, in accordance with the recommendations of the Greater Dublin Strategic Drainage Study Guidelines and Appendix B of the Planning System and Flood Risk Management Guidelines.

Flooding events, whether widespread or localised, can cause serious damage to key infrastructure (e.g. power stations, sub-stations, communication hubs, wastewater treatment plants etc.). The cost of such disruption is significant to business, causes hardship to residents and also can place people in "at risk" situations. For this reason, it is recommended that on completion of Catchment Flood Risk Assessment and Management Studies and upon identification of areas of high flood risk in each Planning Authority area, that key infrastructure suppliers are advised of the risk to such installations and encouraged to assess current infrastructure for risk and stress test future projects against flood risk, where this has not been previously undertaken.

## **4.0 STRATEGIC FLOOD RISK ASSESSMENT—SALLINS DRAFT LOCAL AREA PLAN**

### **4.1 Introduction**

The Strategic Flood Risk Assessment provides an appraisal and assessment of available flood risk data for the land-use proposals within the boundaries of the Sallins Draft Local Area Plan. This process identifies flood risk indicators in each area and, where it is demonstrated that lands may be at risk of flooding, recommends modifications to land-use proposals or the carrying out of more detailed flood risk assessment as appropriate.

### **4.2 Available Flood Risk Data**

Most of the data utilised is historically derived, not prescriptive in relation to flood return periods and not yet predictive or inclusive for climate change analysis.

#### **4.2.1 Office of Public Works**

The OPW is currently undertaking flood risk assessment mapping showing Areas of Potential Significant Flood Risk in collaboration with local authorities and other key agencies. Upon completion, it will become an important and primary source of input into future flood risk assessment studies. A public consultation period for the Preliminary Flood Risk Assessment (PFRA) which identifies Areas of Potential Significant Risk has just concluded. A list designating a number of Areas for Further Assessment (AFA's) arising from the PFRA has recently been published by the OPW. These areas will now be the focus of the CFRAM (Catchment Flood Risk Assessment and Management) studies. Further information on the PFRA process is available on [www.cfram.ie](http://www.cfram.ie).

In addition, as part of the National Flood Risk Management Policy, the OPW developed the [www.floodmaps.ie](http://www.floodmaps.ie) web based data set, which contains information concerning historical flood data and displays related mapped information and provides tools to search for and display information about selected flood events. (A summary report from this website for the Sallins Local Area Plan is reproduced in the Appendices).

Additional mapped information, such as the Ordnance Survey of Ireland background maps, rivers, hydrometric gauge stations, drainage districts and land benefiting from drainage schemes is included as additional contextual information.

#### **4.2.2 6" (1:10560) Ordnance Survey Maps**

6" Ordnance Survey maps include areas which are marked as being "Liable to Floods". Generally, these areas are only shown identified indicatively and suggest historical flooding, usually recurrent. In addition, the maps indicate areas of wet or hummocky ground, bog, marsh, springs, rises and wells as well as surface water features including rivers, streams, bridges, weirs and dams.

#### **4.2.3 Local Authority Personnel**

Detailed consultations were held with Local Authority personnel regarding historical flooding and any flood relief works which either have been carried out or are proposed for the areas encompassed by the boundaries of the Sallins Local Area Plan.

#### **4.2.4 Flood Studies, Reports and Flood Relief Schemes**

Flood reports have been completed for a number of areas within County Kildare and many areas with a history of flooding have undergone flood relief works in the recent past. A number of surface water / flood alleviation schemes are listed in the Capital Programme 2010 ~ 2012.

### **4.3 Flood Risk Indicators**

The extent of the existing boundaries of the Sallins Local Area Plan has been assessed for the presence of flood risk indicators by reference to the datasets described in Section 4.2. Table 1 provides a matrix showing these indicators at various locations throughout the Sallins Local Area Plan.

Location	Available data (by source)			
	www.floodmaps.ie / PFRA Maps	Local Authority	25" & 6" OS maps	Other
Lands south of the Railway Line east of the R407 Regional Road within the LAP boundary	Floodmaps website refers to extensive flooding of the recently developed lands in November 2009.	Photographic surveys were undertaken by the Local Authority indicating the extent of the 2009 flood event. Sallins Flood Alleviation Scheme works have been undertaken to minimise the risk of future flooding.	OS 6" and 25" Historic Mapping shows a canal feeder flowing from a catchment area at Monread North towards the Grand Canal. This stream is culverted beneath the Railway Line (shown in 25" mapping). In addition the lands are surrounded by a network of open drainage channels and numerous springs. Lands immediately east of the LAP are mapped as 'including water'.	
Lands south of the Railway Line east and west of the Canal within the LAP boundary	PFRA mapping indicates that a portion of these lands are at significant risk of flooding.		OS Historic Mapping shows that these lands are characterised by a number of open drainage ditches together with extensive infrastructural development including a spur of the Grand Canal into Naas and a spur from the Great Southern and Western Railway from Sallins Station into Naas.	
Lands along both banks of the River Liffey within the LAP boundary	PFRA mapping indicates that large portions of these lands are at significant risk of flooding.		OS 25" and 6" Historic Mapping shows that the lands are surrounded by numerous drainage features including a network of open land drains and a stream flowing towards the River Liffey.	
Lands south of the Grand Canal and east of Main Street within LAP boundary	These lands were subject to some flooding in November 2009. The lands are close to the location identified on the Floodmaps website as having experienced significant flooding in November 2009.	Culverts draining lands which flooded in 2009 pass through these lands before draining into the Grand Canal.	Lands are bounded by the Grand Canal, the Railway Line and open drains. A stream which is fed by a number of springs south of the railway line passes beneath the railway line, through these lands and through the town centre before draining to the River Liffey.	
Lands north of Grand Canal divergence and south of the River Liffey within the LAP boundary	PFRA mapping indicates that large portions of these lands are at significant risk of flooding.		OS 6" and 25" Historic Mapping shows that these lands are traversed and surrounded by numerous small streams and open drainage features flowing towards the River Liffey. A spring is also mapped within these lands. A strip of marshy ground is mapped running between the Grand Canal and the River Liffey.	
Lands along eastern boundary of LAP north of the Grand Canal	The lands are close to the location identified on the Floodmaps website as having experienced significant flooding in November 2009.		OS Historic Mapping indicates areas of extensive quarrying along the eastern boundary of these lands.	
Lands to the east of the River Liffey north of the Grand Canal within the LAP boundary			OS 6" and 25" Historic mapping shows large areas of these lands traversed by a network of streams and open drains. Some wells are also mapped.	

Table 1: Flood Risk Indicators for Sallins

#### **4.4 Recommendations for modification to or additional assessment of land-use proposals**

Appendix I contains the Land-use Map proposed for the Draft Sallins LAP 2015 2021. The SFRA for the Sallins Local Area Plan assessed the flood risk indicators listed in Table 1 in relation to these land-use proposals.

Sallins has a history of flooding on lands near the River Liffey. Recent significant flooding occurred in November 2009 when a recently constructed residential and commercial development was extensively flooded (Waterways, Sallins) during an extreme weather event.

Historical indicators suggested the potential for minor localised flooding at several locations due to poor drainage conditions and low lying areas. The 2009 flood event also identified inadequacies in the surface water drainage infrastructure.

In those areas where the Initial Assessment indicated a risk of minor localised flooding, the SFRA recommended that site-specific Flood Risk Assessment be carried out for any proposals for development of these lands. These site-specific assessments should be appropriate to the nature and scale of the development being proposed (the areas for which Site-specific FRA was initially recommended is shown on the Drawing included in Appendix III).

In a number of cases, the Initial Assessment indicated a more significant flood risk in lands which were being considered for types of development not generally compatible with flood risk areas (*i.e. development classed as vulnerable in accordance with the criteria set out in the Planning System and Flood Risk Management Guidelines*). The SFRA recommended that Detailed Flood Risk Assessment (Detailed FRA) be carried out for these lands (the extent of lands for which Detailed FRA was recommended is shown on the Drawing included in Appendix III).

Detailed FRA was carried out for these areas in accordance with the Guidelines. These assessments found that flood risk in these areas was not of such significance as to strategically undermine the land-uses proposed in the draft LAP. However the risk of localised flooding remains and so the SFRA recommended that site-specific Flood Risk Assessment be carried out for any proposals for development of these lands. The Drawings included in Appendix II show the recommendations of the SFRA further to completion of this Detailed Flood Risk Assessment.

It is recommended that Development proposals in Sallins have regard to the general policies, requirements and objectives which are set out in Chapter 7 (Water, Drainage and Environmental Services) of the County Development Plan.

#### **4.5 Forthcoming Information to Inform Future Flood Risk Consideration**

Ireland is required under the EU Floods Directive to carry out Preliminary Flood Risk Assessments of their river basins and associated coastal zones by 2011. The OPW has developed a Catchment Flood Risk Assessment and Management (CFRAM) Programme, which lies at the core of the assessment of flood risk and the long-term planning of the flood risk management measures throughout the country, including capital structural and non-structural measures. The CFRAM Programme will, as well as delivering on national policy, meet the requirements of the EU 'Floods' Directive that came into force in November 2007. This Directive required the production of flood maps for the Areas of Potentially Significant Risk by the end of 2013, and the development of Flood Risk Management Plans to manage risk within the Areas of Potentially Significant Risk by the end of 2015.

This SFRA is based on currently available data and in accordance with its status as a "living document" it will be subject to modification by emerging datasets of maps and plans as they become available.

#### **5.0 MONITORING AND REVIEW**

It is anticipated based on information available from the OPW that catchment-based Flood Planning Groups should be operational soon after adoption of the Sallins Local Area Plan.

The catchment-based Flood Planning Groups will monitor and review progress in addressing flood risk in the County with reference to the "The Planning System and Flood Risk Management Guidelines", the EU Floods Directive and this Strategic Flood Risk Assessment together with other data sources as they become available.

It is recommended that the relevant statutory bodies and the catchment based Flood Planning Groups are consulted, and that their progress in implementation of the requirements of the EU Flood Directive be reviewed prior to the preparation of any new Sallins Local Area Plan.

**APPENDIX I**  
**LAND-USE MAP FOR DRAFT SALLINS LAP 2015 – 2021**



Draft Sallins Local Area Plan  
 2015 - 2021

Legend :

-  Local Area Plan Boundary
-  A: Town Centre
-  B: Existing Residential / Infill
-  C: New Residential
-  E: Community & Educational
-  F: Open Space & Amenity
-  H: Industry & Warehousing
-  I: Agricultural
-  J: Transport & Utilities
-  K: Commercial / Residential
-  R: Retail
-  U: Utilities & Services
-  River / Canal
-  500m Intervals from Train Station
-  Powerlines
-  Setback from the M7 Motorway
-  Train Station
-  Motorway
-  Pedestrian/Cyclist Bridge
-  Town Park Objective
-  Proposed Sallins Bypass ( Refer to Map 2 )

Land Use Zoning Objective Map

Scale: N.T.S.

Map Ref: 1

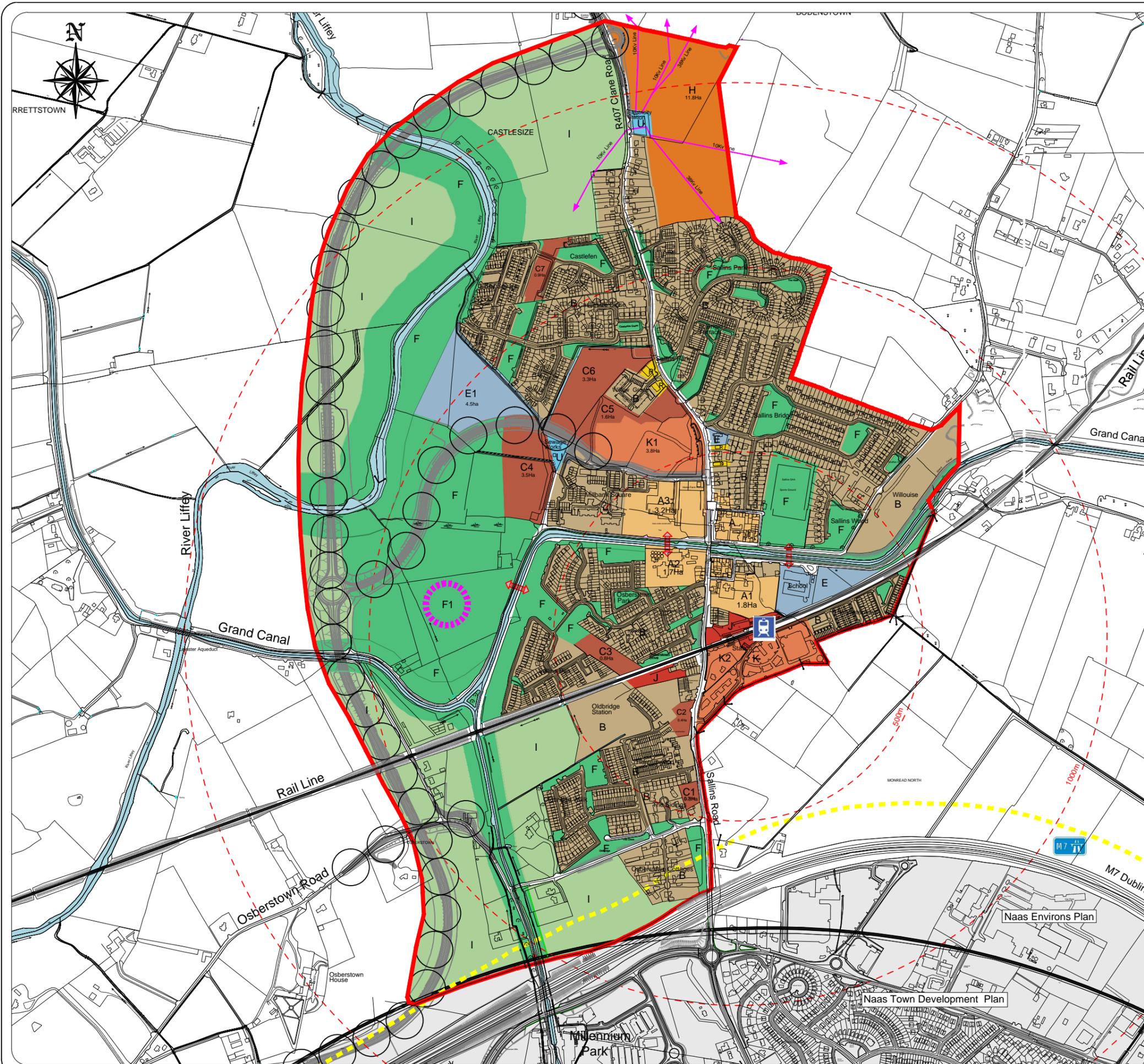
Date: July 2014  
 ( Revision -11-06-2015 )

Drawing No: 200/14/669

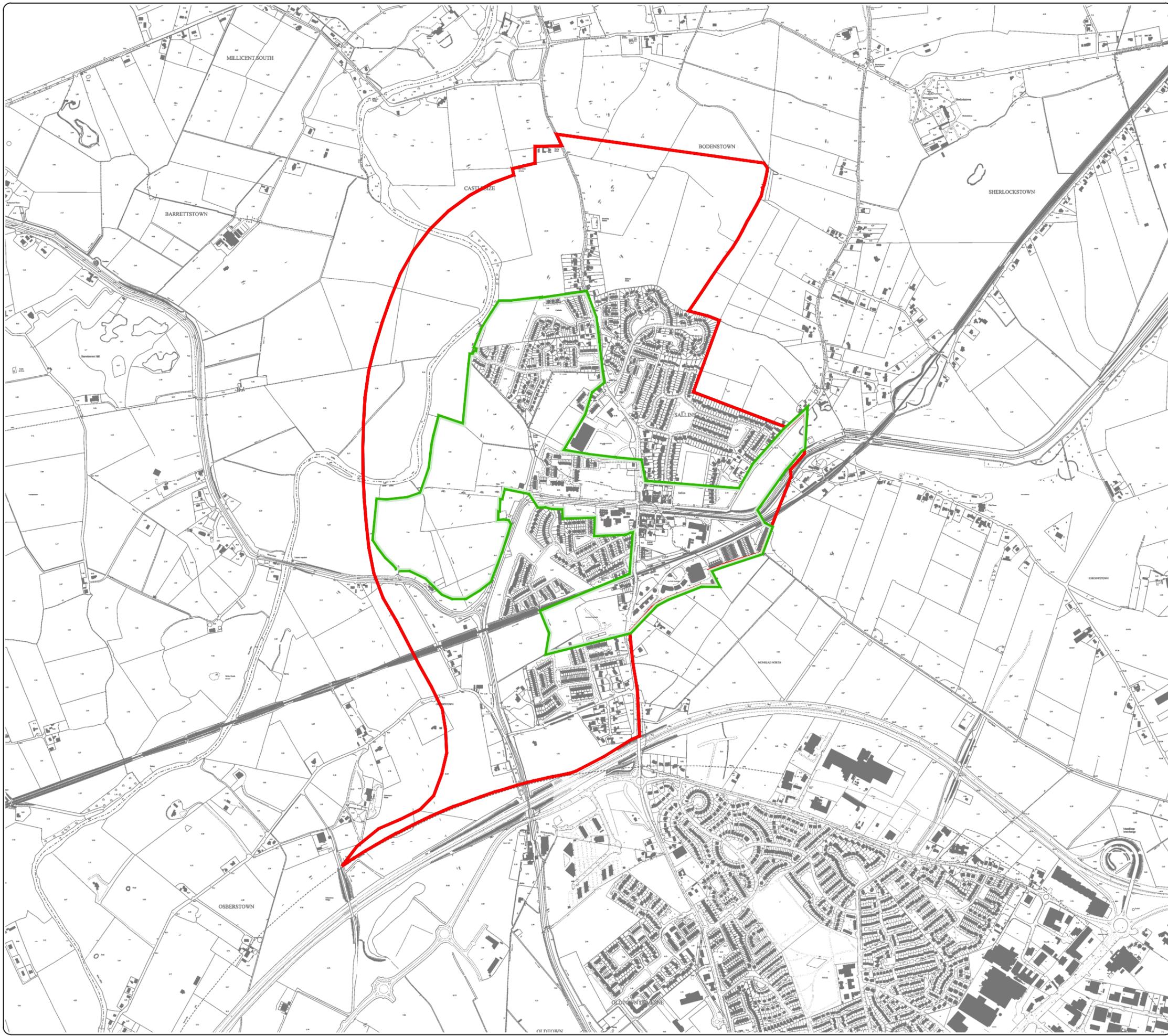
© Ordnance Survey Ireland.  
 All rights reserved.  
 Licence No.: 2004/07CCMA  
 (Kildare County Council)

Drawn By: M.Hafayed

This drawing is to be read in conjunction with  
 the written statement, objectives and relevant maps



**APPENDIX II**  
**MAPS SHOWING RECOMMENDATIONS OF SFRA AND FLOOD RISK ZONES**  
**AFTER COMPLETION OF DETAILED FRA**



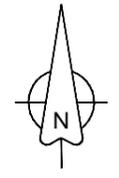
**LEGEND**

Development proposals for lands outlined thus are to be the subject of site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed. Such Development Proposals shall also:



- Indicate and quantify loss of floodplain storage arising from the development proposal;
- Provide compensatory storage located within or adjacent to the proposed development;
- Indicate measures to ensure that water-vulnerable elements of the Development would not be flooded during the 1000year flood;
- Ensure that existing flow paths for flood waters will not be compromised.

Development Plan boundary



REV	DATE	BY	DETAILS
DR3	19/06/15	PB	Minor revisions to area for which SSFRA recommended
DR2	08/04/13	PB	Revised to reflect detailed FRA findings

STATUS  
**PLANNING**

CLIENT  
**KILDARE COUNTY COUNCIL**

PROJECT  
**DRAFT STRATEGIC FLOOD RISK ASSESSMENT  
COUNTY DEVELOPMENT PLAN - SMALL TOWNS**

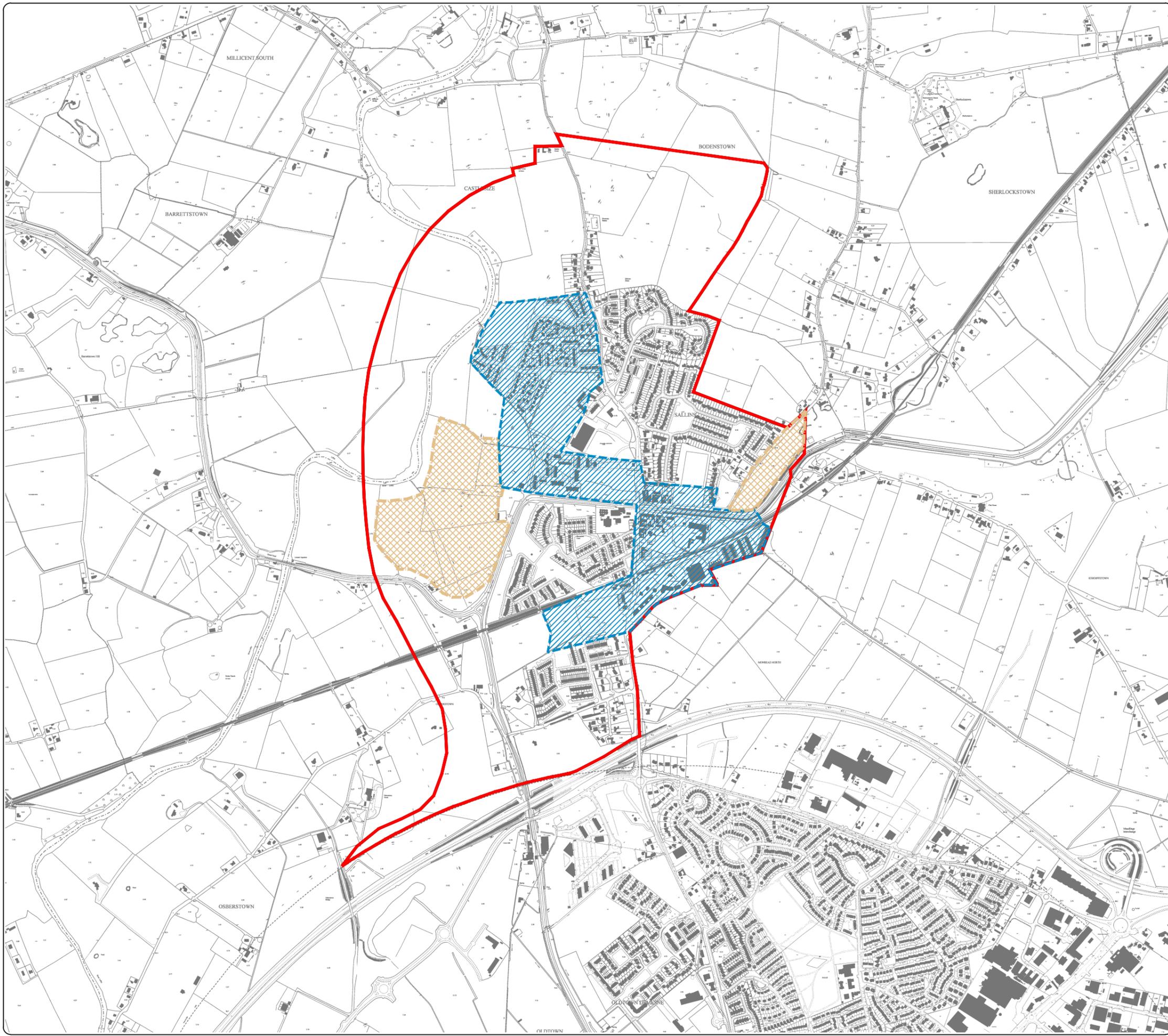
TITLE  
**SPECIFIC RECOMMENATIONS FOR SALLINS (AFTER  
COMPLETION OF DETAILED FRA)**

**KILGALLEN & PARTNERS**  
CONSULTING ENGINEERS  
KYLEKIPROE, WELL ROAD, PORTLAOISE, CO. LAOIS  
Tel: +353 57 86 62860, Fax: +353 57 86 62861  
E-mail: Info@Kilgallen.ie, Web: www.kilgallen.ie

DRN:	SCALE:	MAP No.	REV.:
PB	1:15,000@A3		
CHKD:	DATE:	11049-SALL-01	DR3
MK	16/08/2012		

### **APPENDIX III**

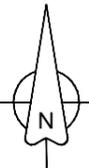
#### **MAPS SHOWING FINDINGS INITIAL ASSESSMENT INCLUDING THOSE AREAS FOR WHICH SITE-SPECIFIC FLOOD RISK ASSESSMENT WAS RECOMMENDED**



**LEGEND**  
 Development proposals for lands outlined thus are to be the subject of site-specific Flood Risk Assessment appropriate to the type and scale of the development being proposed. 

Lands for which detailed FRA is required 

Boundary of Plan 



N

REV	DATE	BY	DETAILS

STATUS  
**PLANNING**

CLIENT  
**KILDARE COUNTY COUNCIL**

PROJECT  
**DRAFT STRATEGIC FLOOD RISK ASSESSMENT  
 COUNTY DEVELOPMENT PLAN - SMALL TOWNS**

TITLE  
**SPECIFIC RECOMMENATIONS FOR SALLINS**



**KILGALLEN & PARTNERS**  
 CONSULTING ENGINEERS  
 KYLEKIPROE, WELL ROAD, PORTLAOISE, CO. LAOIS  
 Tel: +353 57 86 62860, Fax: +353 57 86 62861  
 E-mail: Info@Kilgallen.ie, Web: www.kilgallen.ie

DRN: PB	SCALE: 1:15,000@A3	MAP No.	REV.:
CHKD: MK	DATE: 16/08/2012	11049-SALL-01	DR1