



Cork County Development  
Plan Review

# Updated Strategic Flood Risk Assessment

18<sup>th</sup> January 2022



Comhairle Contae Chorcaí  
Cork County Council



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# Introduction and Policy Background

## 1.1 Introduction

- 1.1.1 Cork County Council is reviewing the Cork County Council Development Plan 2014-2020 (as varied) and preparing a new Cork County Development Plan 2022-2028.
- 1.1.2 The preparation of the Draft Plan is undergoing an appropriate level of Strategic Flood Risk Assessment (SFRA) in accordance with 'The Planning System and Flood Risk Management Guidelines (including Technical Appendices)' published by the Department of Environment Heritage and Local Government (DoEHLG) and the Office of Public Works (OPW) (2009) and the Department of the Environment, Community and Local Government Circular PL 2/2014.
- 1.1.3 The SFRA is an ongoing process, alongside the Plan preparation process, and has been updated to consider, for example, new information including receipt of updated mapping or any future changes to the Draft Plan on foot of submissions.
- 1.1.4 The Guidelines state that a plan at county level will not normally have to undertake detailed flood risk assessment involving the production of a flood risk map for all watercourses or coastal frontage. In general, the guidelines state that this will only be necessary if it is intended to zone land for development or identify the location of future strategic infrastructure within flood risk areas. The Guidelines state that where flooding is not a major issue in the location of new development, as will be the case in many county development plans, a less detailed approach will be required than in core urban areas with high development pressures and significant flood risk issues.
- 1.1.5 Therefore, in accordance with the guidelines, this SFRA will provide more detailed information on the spatial distribution of flood risk, including details of how the sequential approach should be applied in key settlements and where it will be necessary to apply the Justification Test.
- 1.1.6 This assessment should be read in conjunction with the mapping of areas at risk of flooding in the network of settlements outlined in Volumes 3, 4 & 5 of the Draft Plan and as set out in the proposed amendments to the Draft Plan.
- 1.1.7 This SFRA was carried out in parallel with the Strategic Environment Assessment (SEA) process of the Draft plan.

## 1.2 Legislative and Policy Framework

### European Union (EU) Floods Directive

- 1.2.1 The 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 Flood Risk Assessment (PFRA) by 2011 in order to identify the river basins and associated coastal areas where potential significant flood risk exists (preliminary mapping was prepared and a list of Areas for Further Assessment finalised in 2012). The second cycle of indicative flood mapping, called the National Indicative Fluvial Mapping (NIFM) for County Cork was available in Q1 2021.
- Prepare flood extent maps for the identified areas (finalised in 2016 for inclusion in Flood Risk Management Plans – see below).
- Prepare flood risk management plans focused on prevention, protection and preparedness. These plans are to include measures to reduce the probability of flooding and its potential consequences. These Plans were adopted in 2018.

1.2.2 Implementation of the EU Floods Directive is required to be coordinated with the requirements of the EU Water Framework Directive and the current National River Basin Management Plan.

### **National CFRAM Programme**

1.2.3 The OPW 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. The European Communities (Assessment and Management of Flood Risks) Regulations 2010 (S.I. No. 122) identifies the Commissioners of Public Works as the ‘competent authority’ with overall responsibility for implementation of the Floods Directive 2007/60/EC. The OPW is the principal agency involved in the preparation of CFRAM Studies.

1.2.4 The national Catchment Flood Risk Assessment and Management (CFRAM) programme commenced in Ireland in 2011. The CFRAM Programme delivered on core components of the National Flood Policy, adopted in 2004, and on the requirements of the EU Floods Directive. The Programme was implemented through CFRAM studies that have been undertaken for each of the river basin districts in Ireland.

1.2.5 There are 3 River Basin Districts in County Cork. The South West CFRAMS covers the largest area but there are also some smaller areas of the County which are covered by the Shannon CFRAMS and the South East CFRAMS. 29 Flood Risk Management Plans for ‘Areas of Further Study’ (AFAs) were published by the OPW in 2019. There are River Basin Flood Risk Plans throughout the county which include the Lee, Cork Harbour & Youghal Bay River Basin, Bandon-Ilen River Basin, Dunmanus-Bantry-Kenmare River Basin, Munster Blackwater River Basin and Owenavorrigh – Blackwater River Basin.

1.2.6 Cycle One of the CFRAM Programme comprised three phases as follows:

- The Preliminary Flood Risk Assessment (PFRA) mapping exercise, which was completed in 2012;
- The CFRAM Studies and parallel activities, with Flood Risk Management Plans finalised in 2018; and
- Implementation and Review.

1.2.7 Cycle One of the Programme provided for three main consultative stages as follows:

- Consultation for the PFRA mapping that was adopted in 2012;
- Consultation for Flood Extent mapping, that was finalised in 2016 for inclusion in Flood Risk Management Plans; and
- Consultation for Flood Risk Management Plans, that were adopted in 2018.

1.2.8 The first cycle of PFRA was published in 2011 and, in keeping with the need to be reviewed on a 6 year cycle as part of the second round PFRA mapping, new National Indicative Fluvial Mapping (NIFM) has been prepared and was made available to Cork County Council in March 2021.

1.2.9 The second cycle of the CFRAM programme includes design and implementation of flood relief schemes across Ireland. In County Cork a number of potential schemes were identified and prioritised for progression, as detailed in Table 1.

| <b>Table 1: Summary of CFRAM Schemes in County Cork (ongoing, complete and future).</b><br>Source <a href="http://Floodinfo.ie">Floodinfo.ie</a> (September 2021) |  |
|---|--|
| Scheme  | Status   |
| Bandon Flood Relief Scheme  | Completed 2021                                       |
| Clonakilty Flood Relief Scheme  | Completed 2021                                       |
| Dunmanway Flood Relief Scheme   | Completed 2003                                       |
| Fermoy North Flood Relief Scheme  | Completed 2011                                       |
| Fermoy South Flood Relief Scheme  | Completed 2015                                       |
| Mallow North Flood Relief Scheme  | Completed 2010                                       |
| Mallow South & West Flood Relief Scheme   | Completed 2013                                       |
| Skibbereen Flood Relief Scheme  | Completed 2021                                       |
| Ballinhassig Flood Relief Scheme  | Pre-Stage I  |
| Baile Mhic Íre / Baile Bhuirne Flood Relief Scheme  | Stage I: Scheme Development and Preliminary Design   |
| Bantry Flood Relief Scheme  | Pre-Stage I  |
| Bride River (Blackpool) Flood Relief Scheme   | Stage II: Public Exhibition / Confirmation           |
| Carrigaline Flood Relief Scheme   | Pre-Stage I  |
| Douglas (incl. Togher Culvert) Flood Relief Scheme  | Stage IV: Implementation/Construction                |
| Glashaboy (Glanmire / Sallybrook) Flood Relief Scheme   | Stage II: Public Exhibition / Confirmation           |
| Lower Lee (Cork City) Flood Relief Scheme   | Stage II: Public Exhibition / Confirmation           |
| Macroom Flood Relief Scheme   | Pre-Stage I  |
| Midleton Flood Relief Scheme  | Stage I: Scheme Development and Preliminary Design   |
| Béal Átha an Ghaorthaidh Flood Relief Scheme  | Identified through CFRAM but still to be progressed. |
| Castlemartyr Flood Relief Scheme  | Identified through CFRAM but still to be progressed. |
| Castletown Bearhaven Flood Relief Scheme  | Identified through CFRAM but still to be progressed. |
| Inchigeelagh Flood Relief Scheme  | Identified through CFRAM but still to be progressed. |
| Inishannon Flood Relief Scheme  | Identified through CFRAM but still to be progressed. |
| Kanturk Flood Relief Scheme   | Identified through CFRAM but still to be progressed. |
| Rathcormack Flood Relief Scheme   | Identified through CFRAM but still to be progressed. |
| Schull Flood Relief Scheme  | Identified through CFRAM but still to be progressed. |
| Youghal Flood Relief Scheme   | Identified through CFRAM but still to be progressed. |

## 1.3 Flood Risk Management Guidelines

- 1.3.1 The Planning System and Flood Risk Management Guidelines (hereafter referred to as Guidelines or Flood Guidelines) were issued by the Minister of the Environment, Heritage and Local Government under Section 28 of the Planning and Development Act 2000 (as amended). Planning Authorities are required to have regard to the Guidelines in carrying out their functions under the Planning Acts.
- 1.3.2 The purpose of the Guidelines is to ensure that, where relevant, flood risk is a key consideration for Planning Authorities in preparing development plans and local area plans and in the assessment of planning applications. The Guidelines state that the key principles planning authorities should adopt are, to avoid flood risk where possible, substitute less vulnerable uses where avoidance is not possible and mitigate and manage flood risk where avoidance and substitution are not possible.
- 1.3.3 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 and social growth;
  - Improve the understanding of flood risk among relevant stakeholders; and
  - Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

## 1.4 Process and Purpose of Strategic Flood Risk Assessment

- 1.4.1 The 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.
- 1.4.2 Development in areas that 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 that have lower flood risk. Most types of development would be considered inappropriate in areas that 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.
- 1.4.3 The Guidelines identify the importance of including robust flood risk policies in the development plan and state the need for planning authorities to take all practicable steps to ensure the prior identification of any areas at risk of flooding.
- 1.4.4 Flood risk assessments can be undertaken at a range of scales relevant to the planning process which are:
- Regional (for regional planning guidelines);

- Strategic (for city or county development plans or local area plans);
- Site specific (for master plans and individual site planning applications).

1.4.5 The purpose of this SFRA is to provide a broad (area-wide) assessment of all types of flood risk to inform strategic land-use planning decisions for County Cork.

1.4.6 This SFRA also reviewed the text and policies in the Draft County Development Plan in relation to flooding and proposes changes and improvements where required.

1.4.7 The assessment and appraisal of flood risk in this plan adopted a staged approach in accordance with the recommendations outlined in the Guidelines.

1.4.8 The Guidelines provide comprehensive guidance on the incorporation of flood risk identification, assessment and management measures into the development plan and development management processes. This SFRA will need to reflect the broad, strategic nature of this County Development Plan and apply the Planning System and Flood Risk Management Guidelines for Planning Authorities (2009) at a strategic level.

1.4.9 Having regard to the provisions of the Guidelines and the requirements of the EU Floods Directive 2007, an assessment of flood risks has formally been taken into account in the preparation of this County Development Plan.

## 1.5 Stages of the SFRA

1.5.1 The Flood Risk Management Guidelines recommend a staged approach to flood risk assessment that covers both the likelihood of flooding and the potential consequences. The stages of appraisal and assessment are:

- **Stage 1 - Flood Risk Identification:** to identify whether there may be any flooding or surface water management issues related to either the area of Regional Spatial and Economic Strategies, Development Plans and LAP's or a proposed development site that may warrant further investigation at the appropriate lower level plan or planning application levels.
- **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 scope the extent of the risk of flooding which may involve preparing flood zone maps. Where hydraulic models exist the potential impact of a development on flooding elsewhere and of the scope of possible mitigation measures can be assessed. In addition, the requirements of the detailed assessment are scoped.
- **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 or land to be zoned, of its potential impact on flood risk elsewhere and of the effectiveness of any proposed mitigation measures.

## 1.6 Flood Zones

1.6.1 Flood risk is an expression of the combination of the flood probability or likelihood and the magnitude of the potential consequences of the flood event. It is normally expressed in terms of the following relationship:

$$\text{Flood risk} = \text{Likelihood of flooding} \times \text{Consequences of flooding}$$

1.6.2 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. For example, a 1% Annual Exceedance Probability (AEP) indicates the severity of a flood that is expected to be exceeded on average once in 100 years, i.e. it has a 1 in 100 (1%) chance of occurring in any one year.

1.6.3 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 and the presence and reliability of mitigation measures).

1.6.4 Flood zones are geographical areas within which the likelihood of flooding is in a particular range and they are a key tool in flood risk management within the planning process as well as in flood warning and emergency planning.

1.6.5 There are three types of flood zones defined for the purposes of the Flood Guidelines:

- Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding);
- Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding); and
- Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Flood Zone C covers all other areas that are not in zones A or B.

1.6.6 The Flood Guidelines summarise the planning implications of each of those flood zones as follows:

- **Zone A** – High probability of flooding. Most areas of the County that are subject to flood risks fall into this category. Here, most types of development would be considered inappropriate. Development in this zone should be avoided and/or only considered in exceptional circumstances, such as in major urban or town centres, or in the case of essential infrastructure that cannot be located elsewhere. A Justification Test set out in Ministerial Guidelines applies to proposals in this zone. Only water-compatible development, such as docks and marinas, dockside activities that require a waterside location, amenity open space, outdoor sports and recreation, would be considered appropriate in this zone.
- **Zone B** - Moderate probability of flooding. In most parts of the County this designation applies only to limited areas of land. In only a few locations do significant sites fall into this category. Here, highly vulnerable development, such as hospitals, residential care homes, Garda, fire and ambulance stations,

dwelling houses and primary strategic transport and utilities infrastructure, would generally be considered inappropriate. Less vulnerable development, such as retail, commercial and industrial uses, sites used for short let for caravans and camping and secondary strategic transport and utilities infrastructure, should only be considered in this zone if adequate sites are not available in Zone C, and subject to a flood risk assessment demonstrating that the risk can be appropriately managed.

- **Elsewhere** (referred to in the Guidelines as Flood Zone C) – Localised flooding from sources other than rivers and the coast can still occur and may need to be taken into account at the planning application stage.

1.6.7 Details of the requirements of the Flood Guidelines for land uses across each of the above flood zones is provided at Appendix A: Identification and Assessment of Flood Risk, of the Flooding Guidelines Technical Appendices.

## 1.7 Incorporation of Climate Change into the SFRA

1.7.1 Climate change impacts and mitigation at both the Plan Making and Development Management stages of the planning process have been considered as part of this SFRA.

1.7.2 From a Plan Making perspective, the Flood Zones for the current and future scenarios were compared with a view to identifying locations where climate change impacts could be significant, (i.e. where there was a significant difference between the current and future extents in both Flood Zone A and B). In locations where there was a difference in extents, further consideration was given to how development proposals could be managed in the processes contained in this SFRA. Consideration was also given to the presence or otherwise of flood defences, and where a flood relief scheme is ongoing or planned it was noted that an adaptation plan would be an integral part of the scheme design.

1.7.3 Climate change risk mitigation through development management is also addressed in the recommendations for the scope of site specific FRAs and in the discussion on potential flood mitigation measures, including consideration of site layouts and landscaping, finished floor levels and design of drainage systems and SUDS.

## 1.8 Emerging Information and Disclaimer

1.8.1 It is important to note that compliance with the requirements of the Flood Risk Management Guidelines is currently based on emerging and best available data at the time of preparing the assessment, including Flood Risk Management Plans, which will be updated on a cyclical basis as part of CFRAM activities.

1.8.2 Within this SFRA, pluvial flooding has been addressed on broadscale basis, with provision of guidance relating to the site specific scale of assessment.

1.8.3 Following adoption of the Plan, information in relation to flood risk may be altered in light of future data and analysis, by, for example, the OPW, or future flood events. As a result, all landowners and developers are advised that Cork County Council and their 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 and buildings (including basements) in which they have an interest prior to making planning or development decisions.

1.8.4 Any future SFRAs for the area will integrate other new and emerging data.

## **1.9 Cork County Development Plan Settlement Strategy**

1.9.1 The County Development Plan is a strategic document which sets out the county settlement strategy, in accordance with the Core Strategy.

1.9.2 The Core Strategy for the County is prepared in line with guidance, strategies and policies at national and regional level. The main issues which faced the County in the preparation of this Core Strategy included; the overall planning strategy and climate change strategy, population, housing, placemaking, rural housing, retail development and town centres, transport and infrastructure, employment and economic growth, and biodiversity and environment. One of the key requirements for this County Development Plan is to demonstrate how its policies and objectives are consistent with meeting national and regional population targets.

1.9.3 There are four strategic planning areas in the county which are as follows; County Metropolitan Strategic Planning Area; Greater Cork Ring Strategic Planning Area; North Cork Strategic Planning Area and the West Cork Strategic Planning Area. The Network of Settlements identified in the Core Strategy includes the higher order settlements of the key towns of Mallow and Clonability as designated by the Regional Spatial and Economic Strategy for the Southern Region (RSES), and the other Main Settlements in the County. The lower order settlements (Key Villages, West Cork Island Communities, Villages and Other Locations) have also been identified as part of the development plan. Figure 1 sets out the key elements of the Core Strategy and presents them on one diagrammatic map which draws together the strategic infrastructural assets of the County with its Settlement Hierarchy and also presents the different types of rural areas in the County, which are also set out in the plan.

### **County Metropolitan Cork Strategic Planning Area:**

1.9.4 The County Metropolitan area, that is the part of the Cork MASP area that is within the functional area of Cork County Council as of the 31st of May, 2019, has a defined target growth in population of 20,000 people to 2026, derived from the RSES, which is ring-fenced so that this area can actively participate in the promotion of the MASP area. In order to align with the National Planning Framework (NPF) and provisions for headroom for County Cork as outlined in the NPF Roadmap a portion of the additional 25% increase on the 2016-2026 overall population was applied to the County Metropolitan Strategic Planning Area. The rationale for its location to the County Metropolitan Cork Strategic Planning Area follows the long term strategic vision for Metropolitan Cork. In order to align with the operational period of this County Development Plan to Q2 2028 one and a half years growth was interpolated from the 2026-2031 Tranche as set out in the NPF and RSES resulting in a population growth target for the County Metropolitan area of 27,514 people to 2028.



### County Cork excluding the County Metropolitan Cork Strategic Planning Area:

- 1.9.5 County Cork, excluding the County Metropolitan Cork Strategic Planning Area, comprises the Greater Cork Ring, the North Cork and West Cork Strategic Planning Areas. This area will grow by 25,000 allowing the total of County Cork to grow by 45,000 people to 2026. This growth was apportioned to the individual strategic planning areas using similar percentages as demonstrated by their past and current targets and in this way, of the 25,000 additional population 53% was attributed to the Greater Cork Ring, 22% to the North and 25% to the West Strategic Planning Areas. Similar to the Metropolitan area, in order to align with the operational period of this County Development Plan to Q2 2028 one and a half years growth was interpolated from the 2026-2031 Tranche as set out in the NPF and RSES which lead to an overall growth for the Greater Cork Ring, North and West Strategic Planning Areas of 31,656 people to 2028.
- 1.9.6 This exercise allowed for the disaggregation of the overall Strategic Planning Area level or sub County targets to achieve the strategic outcomes, policy direction and guidance from the NPF and the RSES to filter down to the settlement framework for Cork County, including an acknowledgement of NPO 9 and the importance of the County Cork MASP area and the Key Towns of Clonakilty and Mallow in performing at a rate of 30% or higher on their 2016 population.

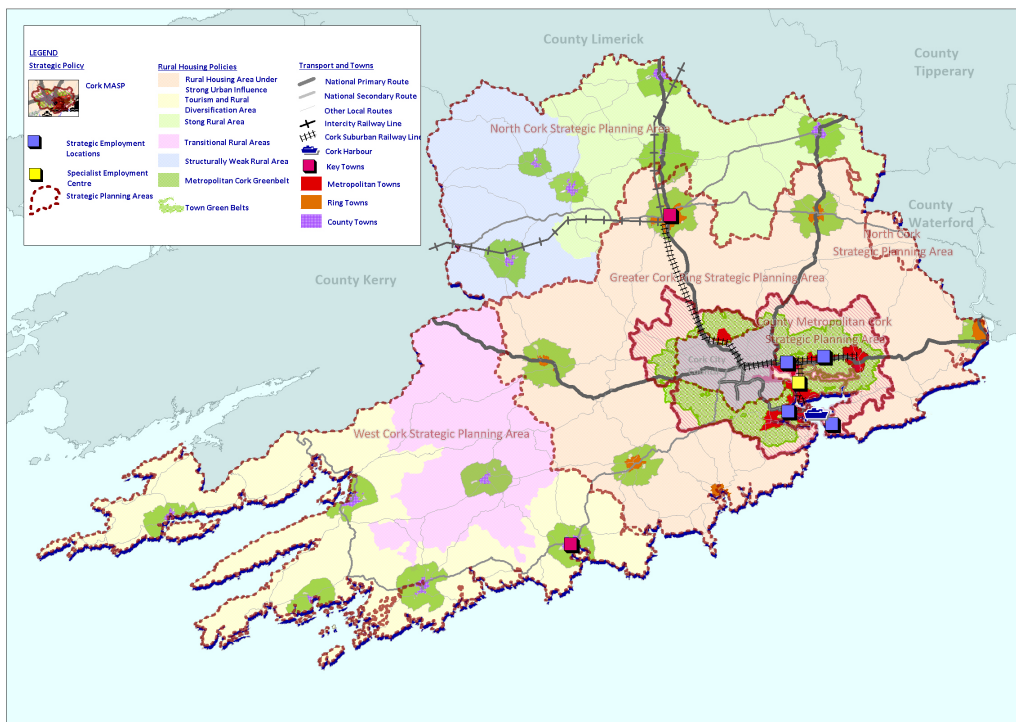


Figure 1: Core Strategy Diagram

# Flood Risk Identification

## 2.1 Flood Risk Identification

- 2.1.1 The aim of this stage is to identify whether there may be any flooding or surface water management issues relating to the plan area that may warrant further investigation. This assessment examined a range of sources in order to establish the existence of flood risk in the plan area.
- 2.1.2 The following information sources were considered:
- National Indicative Flood Mapping from the OPW (2021);
  - Preliminary Flood Risk Mapping from the OPW (2011);
  - Flood Zone mapping outputs from the South West, Shannon and South Eastern CFRAM Studies (2016)
  - Lower Lee Flood Relief Scheme flood extent draft outputs for current scenario (2021)
  - SFRA for the Cork County Development Plan 2014-2020, 2014, including supporting Flood Zones;
  - SFRAs for the Local Area Plans 2017-2023, 2017, including supporting Flood Zones; and
  - Regional Flood Risk Assessment for the Southern Regional Spatial and Economic Strategy, 2019.

## 2.2 Data Collection and Review

This section of the SFRA reviews the availability of data relating to flood risk in County Cork. There are a number of datasets which record historical and / or predicted flood extents. The aim of the review is to identify flood risk based on the data available, including historical records, considering all sources of flooding, and to appraise the quality and usefulness of the data. Table 2 summarises the data available and its quality, includes an assessment of confidence in its accuracy (when attempting to incorporate it into the flood zone map) and gives an indication of how it was used in the SFRA study.

| Table 2: Data Availability               |  |  |   |
|--|--|--|---|
| Dataset                                  | Description / coverage   | Robustness   | Comment on usefulness   |
| County Development Plan Flood Map (2014) | Based largely on the on bespoke, broadscale modelling, Lee FRAM and scheme outlines (where available) with some adjustment following walkover and local knowledge. Covers nearly all rivers and included validation so used for development of base Flood Zones. | Various depending on underlying source (See below) | Used as the basis for the Flood Zones, supplemented by more detailed or recent information. |

| Table 2: Data Availability                                  |   |   |  |
|---|---|---|--|
| Dataset   | Description / coverage  | Robustness  | Comment on usefulness  |
| South Western, Shannon and South Eastern CFRAM studies, OPW | Areas for further assessment (AFAs), or settlements falling along modelled lengths, in County Cork are: Castletownbere, Bantry, Durrus, Schull, Skibbereen, Clonakilty, Dunmanway, Inchigeelagh, Macroom, Baile Mhic Íre/ Baile Bhuirne, Bandon, Carrigaline, Blarney, Whitegate, Midleton, Castlemartyr, Killeagh, Youghal, Fermoy, Rathcormack, Kanturk, Charleville, Freemount, Little Island. | Modelling is 'best of breed' and outputs will allow informed decisions to be made on zoning objectives. Design water levels will inform decisions relating to raising land and setting finished floor levels. | Used to supplement the existing Flood Zone maps. This data was reviewed and subject to public consultation as part of the CFRAM process. Site specific FRAs will still be required for planning applications, but information on water levels can form the basis of decision in relation to finished floor levels. |
| Lee FRAM, OPW   | Covers the rivers in the Lee Catchment. Mapping undertaken as a pilot to the CFRAM Study  | As CFRAM, but lower rivers have been subject to update as part of the Lower Lee scheme  | Used to supplement the existing Flood Zone maps. This data was reviewed and subject to public consultation as part of the CFRAM process. Site specific FRAs will still be required for planning applications, but information on water levels can form the basis of decision in relation to finished floor levels. |
| Draft Lower Lee FRS, OPW                                    | River Lee downstream of Inniscarra Dam. Produced as part of the flood relief scheme.  | Higher accuracy than the Lee FRAM.  | Used to supplement the existing Flood Zone maps and superseded Lee FRAM data. Site specific FRAs will still be required for planning applications, but information on water levels can form the basis of decision in relation to finished floor levels.  |
| Flood relief scheme outlines, OPW / CCC                     | See Table 1 for completed scheme list.  | Generally, as CFRAM, but date from older studies  | Used to supplement the existing Flood Zone maps and superseded Lee FRAM data. Site specific FRAs will still be required for planning applications, but information on water levels can form the basis of decision in relation to finished floor levels   |

| Table 2: Data Availability  |   |  |   |
|---|---|--|---|
| Dataset   | Description / coverage  | Robustness   | Comment on usefulness   |
| National Indicative Fluvial Mapping (NIFM), OPW                       | These maps are 'predictive' flood maps for watercourse with a catchment area greater than 5km <sup>2</sup> .  | Moderate   | Used for all watercourses not covered by CFRAM / ICPSS / the studies above and replaces the County Development Plan mapping discussed above.  |
| Irish Coastal Protection Strategy Study (ICPSS): Flood extent maps    | Still water tidal extents for 200 year and 1000 year events for the whole coastline   | High, but does not include wave overtopping / breaking so does not represent storm damage. | Used to define the tidal risk element of Flood Zone A and B in non CFRAM settlements. The ICPSS data is incorporated within CFRAM mapping discussed above. Where direct translation of tide levels inshore is appropriate (i.e. where the town is on the coast, not up an estuary) these levels can be used to set finished floor levels. |
| Irish Coastal Protection Strategy Study (ICPSS): Coastal erosion maps | Predicted line of the coast in 2030 and 2050.   | Low  | Used to provide an indication of areas where erosion may be a future risk. This is usually coupled with an element of tidal flood risk.   |
| OPW Preliminary Flood Risk Assessment (PFRA) flood maps – Fluvial     | The PFRA was a national screening exercise that was undertaken by OPW to identify areas at potential risk of flooding. Fluvial, coastal, pluvial and groundwater risks were identified at an indicative scale.  | Low  | Superseded by the National Indicative Fluvial Mapping.  |
| PFRA Maps - Coastal   |   | Moderate   | This was based on ICPSS flood extents.  |
| PFRA Maps – Pluvial and groundwater                                   |   | Low  | Not used as withdrawn by OPW. See GSI mapping.  |
| Historical event outlines and point observations and reports          | Various. Includes records from CCC sources, damage report for the 2014 coastal storms and <a href="http://www.floodinfo.ie">www.floodinfo.ie</a> .  | Indicative   | Can be indirectly used to validate flood zones and identify non-fluvial and tidal flooding, and particularly sections of coast vulnerable to storm damage.  |
| Arterial Drainage Benefiting land maps                                | Shows land which would (or has) benefited from a drainage scheme. This is not based on a 'design flood' (i.e. the events do not have a return period), but indicate low-lying, poorly drained land. It is not the same as lands which are protected by a flood relief scheme. | Low  | Superseded by the data sources listed above.  |

| <b>Table 2: Data Availability</b>  |                               |  |  |
|--|-------------------------------|--|--|
| <b>Dataset</b>   | <b>Description / coverage</b> | <b>Robustness</b>  | <b>Comment on usefulness</b>   |
| Flood relief scheme details, including locations and lengths, standard of protection and areas which are protected | There are defences in.        | High (outputs from the CFRAM will provide this information). | Flood Zones are defined without the benefit of defences, but the benefits should be considered when establishing the specific risk to a site, and in informing the site specific FRA.<br>It is essential that the analysis of the defended area is carried out by someone who fully understands the approach taken in the CFRAM, as it is not straightforward. |

## 2.3 Flood Zone Map Development

- 2.3.1 As can be seen from Table 2, a range of data, including hydraulic modelling and historical reports was used to inform this SFRA.
- 2.3.2 The OPW CFRAM maps were reviewed as part of the data collection exercise and have been used to inform the land use zonings contained in the Development Plan. Settlements covered with detailed mapping (termed High Priority Watercourses, or HPW) and used in the Flood Zone development are listed in the table above. The Lower Lee Flood Relief scheme and various other schemes within the county also involved production of high quality flood mapping which has been incorporated into the Flood Zones.
- 2.3.3 Medium Priority Watercourse (MPW) mapping also provided flood information for a number of other settlements within the county, and for the watercourse lengths between the urban settlements. Where HPW outputs were not available, MPW was used as next preference. NIFM has also been used for non-CFRAM watercourses.
- 2.3.4 In general, where HPW modelling has been carried out, flood levels and flows are available at selected node points along the watercourse through the CFRAM outputs. Once an appropriate level of validation has been undertaken as part of the site specific FRA, these flood levels may be used to form the basis of the development design. For the MPW and NIFM it should also be noted that the mapping provides an indicative extent only. Additional assessment through a Stage 3 FRA may be needed to demonstrate the level of flood risk, including provision of flood levels.
- 2.3.5 Regardless of the origin of the background data, the Flood Zone Maps have been developed as a spatial planning tool to guide the Council in making land zoning and development management decisions and it is recognised that site specific information may contradict the Flood Zones, either to demonstrate a greater or lesser level of flood risk. However, the data has been deemed appropriate for the planning decisions being made at this stage of the plan making process.

## 2.4 Unmapped Fluvial Risk

- 2.4.1 The Flood Zones have been derived for watercourse with a catchment area greater than 5km<sup>2</sup>, which captures the majority of sources of fluvial flood risk in the Cork settlements. However, there may be cases where a watercourse has been identified, either through mapping or through site visit and local knowledge, but due to the size of the catchment, the Flood Zone has not been delineated. In these cases, it is the responsibility of the applicant to undertake an appropriately detailed FRA and to then apply the sequential approach as the Plan Making Justification Test has not been satisfied in these cases.

## 2.5 Sources of Flooding

- 2.5.1 Various parts of the County are vulnerable to the following sources of flooding:
- Fluvial flooding from rivers,

- Coastal and tidal flooding,
- Pluvial flooding from intense rainfall,
- Groundwater flooding
- Defence overtopping or breach
- Flooding from drainage systems.

2.5.2 This SFRA has primarily reviewed flood risk from fluvial and tidal sources. Flood risks from pluvial and groundwater sources or from drainage systems, reservoirs, and canals and other artificial or man-made systems have not been considered in detail in this study and such risks will need to be assessed at the project stage.

2.5.3 This approach has been adopted for two main reasons. Firstly, the review of flooding in the County shows rivers to be the most common source of damage and it is this source of flooding that has been considered in the process. Other sources of flooding are considered to present a lesser risk but should be considered at the planning application stage. Secondly, Flood Zones in the 'Planning System and Flood Risk Management' Guidelines are defined based on fluvial, and where appropriate, tidal flood risk.

### Fluvial Flooding

2.5.4 Flooding of watercourses is associated with the exceedance of channel capacity during higher flows. The process of flooding on watercourses depends on a number of characteristics associated with the catchment including geographical location and variation in rainfall, steepness of the channel and surrounding floodplain and infiltration and rate of runoff associated with urban and rural catchments. There are two main catchment types – large and relatively flat or small and steep, the two giving two very different responses during very large rainfall events.

2.5.5 In larger, relatively flat catchment, flood levels will rise slowly and natural floodplains may remain flooded for several days, acting as the natural regulator of the flow. In small, steep catchments, local intense rainfall can result in the rapid onset of deep and fast-flowing flooding with little warning. Such 'flash' flooding, which may only last a few hours, can cause considerable damage and possible threat to life.

2.5.6 The form of the floodplain, either natural or urbanised, can influence flooding along watercourses. The location of buildings and roads can significantly influence flood depths and velocities by altering flow directions and reducing the volume of storage within the floodplain. Critical structures such as bridge and culverts can also significantly reduce capacity creating pinch points within the floodplain. These structures are also vulnerable to blockage by natural debris within the channel or by fly tipping and waste.

## Coastal and Tidal Flooding

- 2.5.7 County Cork's southern and western boundaries are formed by the Celtic Sea and the Atlantic Ocean. There are numerous settlements along this coastal margin, including Kinsale, Inchydoney, Baltimore, Ahakista and Castletownbere, amongst many others.
- 2.5.8 The coastline of County Cork is experiencing both erosion and deposition and some flooding through normal coastal processes. Parts of the coast in Cork are low lying and vulnerable to flooding in the long-term from sea level rise and it is essential that current and future plans and development now do not create significant problems in the future. Continued investment needs to be made in research on long term options for the protection of coastal towns from long term sea level rise and increased storm activity.
- 2.5.9 A strategic level erosion risk assessment for the coastline has also been completed and predictive erosion maps prepared for the years 2030 and 2050. A review of the erosion risk maps shows that primary erosion risk areas identified in various locations along the coastline, and particularly on the exposed headlands and peninsulars. In contrast to the assessment of coastal flood risk, the coastal erosion risk assessment has indicated that there is generally little risk from erosion in the larger urbanised areas. This is primarily due to the fact that the urbanised coastline is mostly either naturally resilient or protected by man-made defences. As part of the review of flood risk to the coastal settlements, risk of erosion will also be considered and noted in the relevant parts of the settlement reviews.

## 2.6 Other Sources of Flooding

- 2.6.1 Other sources of flooding including pluvial, ground water, drainage systems and reservoirs are detailed below. Risks from these sources have not been specifically considered in the Strategic Flood Risk Assessment undertaken at this stage for the Municipal District's and need to be addressed at the planning application stage.

### Pluvial Flooding

- 2.6.2 Flooding of land from surface water runoff is usually caused by intense rainfall that may only last a few hours. The resulting water follows along natural valley lines, creating flow paths along roads and through and around developments and ponding in low spots, which often coincide with fluvial floodplains. Any areas at risk from fluvial flooding will almost certainly be at risk from surface water flooding.
- 2.6.3 The PFRA study considered pluvial flood risk and produced a national set of pluvial flood maps<sup>1</sup>. This dataset was reviewed and used to identify development areas at particular risk of surface water and pluvial flooding. However, the level of detail contained in the PFRA map, and the widespread distribution of areas at risk did not allow a commentary relating to pluvial flood risk to be developed, or for particularly high risk areas to be identified. Instead, an overall strategy for the management of pluvial risk is presented and should be implemented across all development proposals.

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<sup>1</sup> <http://www.floodinfo.ie>



2.6.4 SFRAs require a strategic assessment of the likelihood of surface water flooding, which includes consideration of the following:

- Are there zoned lands which may need to accommodate and retain surface water flow routes?
- Are there zoned lands which might discharge upstream of an area vulnerable to surface water flooding?

### **Flooding from Flood Defence Overtopping or Breach**

2.6.5 As discussed in Section 1.1 there are a number of flood defences that have been constructed or are nearing completion or are in the design and planning stages. Whilst existing development clearly benefits from the construction of defences, it is against sustainability objectives, and the general approach of the OPW, to construct defences with the intention of releasing land for development. It is also not appropriate to consider the benefits of schemes which have not been constructed, and which may only be at pre-feasibility or design stage.

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

2.6.7 The concept of residual risk is explained in 'The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009' as follows: "Although flood defences may reduce the risk of flooding, they cannot eliminate it. A flood defence may be overtopped by a flood that is higher than that for which it was designed or be breached and allow flood water to rapidly inundate the area behind the defence. In addition, no guarantee can be given that flood defence will be maintained in perpetuity. As well as the actual risk, which may be reduced as a result of the flood defence, there will remain a residual risk that must be considered in determining the appropriateness of particular land uses and development. For these reasons, flooding will still remain a consideration behind flood defences and the flood zones deliberately ignore the presence of flood defences."

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

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

- 2.6.10 The assessment of breach should be proportionate to the likelihood of the defence failing, taking into account the age, maintenance regime, construction type and the presence of any demountable or mechanically operated components.
- 2.6.11 Whilst it is important that residual risks are recognised and appropriate management measures put in place, it is also important to acknowledge the benefits that a flood relief scheme provides to those living and working behind it. In this regard, although 'The Planning System and Flood Risk Management Guidelines for Planning Authorities and Technical Appendices, 2009' requires flood zones to be undefended, consideration should be given to the benefit provided by flood defences, but only once the Justification Test has been applied and passed.

### **Flooding from Drainage Systems**

- 2.6.12 Flooding from artificial drainage systems occurs when flow entering a system, such as an urban storm water drainage system, exceeds its discharge capacity, it becomes blocked or it cannot discharge due to a high water level in the receiving watercourse.
- 2.6.13 Flooding in urban areas can also be attributed to sewers. Sewers have a finite capacity which, during certain load conditions, will be exceeded. In addition, design standards vary and changes within the catchment areas draining to the system, in particular planned growth and urban creep, will reduce the level of service provided by the asset. Sewer flooding problems will often be associated with regularly occurring storm events during which sewers and associated infrastructure can become blocked or fail. This problem is exacerbated in areas with under-capacity systems. In the larger events that are less frequent but have a higher consequence, surface water will exceed the sewer system and flow across the surface of the land, often following the same flow paths and ponding in the same areas as overland flow.
- 2.6.14 Foul sewers and surface water drainage systems are spread extensively across the urban areas with various interconnected systems discharging to treatment works and into local watercourses.

### **Groundwater Flooding**

- 2.6.15 Groundwater flooding is caused by the emergence of water originating from underground and is particularly common in karst landscapes. This can emerge from either point or diffuse locations. The occurrence of groundwater flooding is usually very local and unlike flooding from rivers and the sea, does not generally pose a significant risk to life due to the slow rate at which the water level rises. However, groundwater flooding can cause significant damage to property, especially in urban areas and pose further risks to the environment and ground stability.
- 2.6.16 Groundwater flooding can persist over a number of weeks and poses a significant but localised issue that has attracted an increasing amount of public concern in recent years. In most cases groundwater flooding cannot be easily managed, or lasting solutions engineered, although risk to life is generally low due to the slow onset of flooding.

2.6.17 There are some small parts of County Cork which are vulnerable to groundwater flooding. The area north of Mallow, between the N72 and M6 is indicated on the GSI historic flood maps to have pockets of groundwater risk. There is also historic groundwater risk mapped along the N25 between Carrigtwohill and Castlemartyr, and around Cloyne. There is no mapped historic or predictive groundwater flooding in the central or western parts of the county.

### **Flooding from Reservoirs, Lakes and other Artificial Sources**

2.6.18 Reservoirs can be a major source of flood risk, as demonstrated in the 2009 flooding, when waters released from the Inniscarra Dam flooded sections of Cork City. The Lower Lee FRS includes measures to manage releases from the reservoir system and minimize the associated risk of flooding to Cork City.

## **2.7 Climate Change**

2.7.1 In addition to the current level of flood risk (either fluvial or coastal), the SFRA has identified a number of settlements which could be at significantly greater risk when future (climate change) scenarios are considered. These settlements are mainly located along the coast or the Lee estuary, where between a 0.5m (medium range future scenario) and 1m (high end future scenario) rise in sea level should be allowed for, based on current OPW guidance. This appraisal has not included storm damage which occurs currently or may occur in the future; it is based on still sea levels only.

2.7.2 Where land is to be zoned for development, it is important that the long term viability of the area is understood and can be managed. In the main, this will involve moving zoning objectives inland, rather than targeting new development along the areas at high future risk of flooding.

2.7.3 As with the other areas of risk, the CFRAM and IPCSS both provided future flood extents for its AFAs and coastal margins. As sea level rise will have potentially damaging consequences, the impact of this for both the MRFS and HEFS should be understood for coastal settlements.

2.7.4 Where the OPW and CCC are designing flood relief schemes for an area consideration will be given to the management of climate change risks within the scheme design. However, this may follow an adaptive approach whereby the defence height is based on current design levels, but the foundations of the walls and embankments are designed to take additional loading should the defences be raised in the future.

# Flood Risk Assessment

## 3.1 Draft County Development Plan

- 3.1.1 Chapter 11 Water Management, Section 11.11, and specifically objectives WM 11-13 (Flood Plains and Wetlands), WM 11-14 (Flood Risks – Overall Approach) and WM 11-15 (Development in Flood Risk Areas) of the Draft County Development Plan outlined the overall approach of Cork County Council to addressing flood risk within the settlement network and the rural areas of the County outside development boundaries.
- 3.1.2 In areas where there is a high probability of flooding - 'Zone A' - it is an objective of the Draft Plan to avoid development other than 'water compatible development' as described in Section 3 of the Guidelines. In areas where there is a moderate probability of flooding - 'Zone B' - it is an objective of the Draft Plan to avoid 'highly vulnerable development' described in section 3 of the Guidelines.
- 3.1.3 The Draft Development Plan in Volumes 3 North Cork, Volume 4 South Cork and Volume 5 West Cork, map areas at risk of flooding. They are also available to view online at [www.corkcoco.ie](http://www.corkcoco.ie). With regard to specific settlements, the relevant Municipal District Chapters of the Draft Development Plan include objectives, some of which relate to specific land parcels, giving effect to this overall approach to addressing flood risk in accordance with the guidelines. This should be read in conjunction with the Proposed Amendments (January 2022) which introduce the proposed flood maps developed as result of this SFRA process. This mapping along with the previous flood maps can be viewed online at [www.corkcoco.ie](http://www.corkcoco.ie).
- 3.1.4 The majority of towns, villages and smaller settlements have a river or stream either running through the built-up area or close by and are inevitably exposed to some degree of flood risk when those rivers or streams overflow their normal course. Similarly, in coastal areas flooding can periodically occur following unusual weather or tidal events. It should be noted that the Draft Development Plan does not designate any new settlements.
- 3.1.5 The Draft Plan states that generally where proposals for new zoning significantly conflict with the Flood Zones they should not be included as zoned land unless the proposed use or development satisfied the 'Justification Test for Development Plans' set out on page 37 of the Ministerial Guidelines.
- 3.1.6 In line with the approach set out in the Ministerial Guidelines, areas 'zoned' for town-centre development comprise the main category of future development 'zoning' that often satisfy the requirements of the 'Justification Test for development plans'. The Draft Plan states that development proposals in these 'town-centre zonings' will need to follow the procedures indicated in Paragraph 11.11.20 of the Draft County Development Plan at planning application stage with a view to developing appropriate flood-mitigation measures at the project stage.
- 3.1.7 Where land either subject to a specific zoning objective or otherwise located within the development boundary of a settlement, is affected by the 'Flood Zone Maps' in the Draft Development Plan, a site specific detailed

flood risk assessment is required at the project stage. Precautionary text was included in the specific zoning objectives highlighting the need for a detailed flood risk assessment to be carried out at project stage, where certain zonings were included in areas at risk of flooding. These issues are outlined in more detail in the following section which deals with Flood Risk and Development Management, Chapter 11 of this Plan and the Flood Risk Management Guidelines (including Technical Appendices) which outline the requirements of site-specific flood risk assessments (Stage 3) to be carried out at project stage.

- 3.1.8 Within areas not specifically identified by the plan as being at risk of fluvial or tidal flooding (i.e. within Zone C) a flood risk screening assessment is still required to assess potential impact of development on adjoining Flood Zones A or B, particularly with respect to surface water management and the potential impacts of climate change. An assessment of the risk of other sources of flooding such as pluvial or ground water flooding is also needed.
- 3.1.9 In relation to the impacts of climate change, the Draft County Development Plan has included policy measures which address the importance of 'Climate Change Adaptation', under objective CS 2-8 in Chapter 2: Core Strategy.
- 3.1.10 The individual chapters of the Draft Plan have also been prepared in a manner which has regard to the wider issue of Climate Change. The Draft Plan has included policies in Chapter 7: Marine, Coastal and Islands Rural, Coastal and islands which highlight the importance of protecting our coastal areas from the impacts of predicted sea level rise due to climate change – see Coastal Protection and Objective MCI 7-4. In addition, the importance of reducing and managing surface water run-off is addressed in Chapter 11 Water Management, Section 11.10 of the Draft Plan, by ensuring that all new developments incorporate Sustainable Drainage Systems (SUDS).
- 3.1.11 While the approach outlined above correctly reflects the Draft Plan provisions, it has been necessary to review this approach to better align with the Flood Guidelines and the information that has emerged in the updating of this SFRA. In response to the updated flood zones mapping and the recommendations and conclusions of this SFRA, a series of amendments have been proposed to the Draft Plan which are outlined in the Section 12(4) Chief Executives Report issued on 24<sup>th</sup> September 2021, and subsequently published as proposed amendments to the Draft Plan in January 2022. The amendments provide for a review of the existing flooding policy in Chapter 11 Water Management and also inclusion of the updated flood zone mapping as part of the Plan. As a result of the updated mapping and completion of a number of Development Plan Justification Tests, a series of amendments have been drafted at settlement level also which again are set out in detail in the Chief Executive's Report and the proposed amendments published in January 2022.

## **3.2 Municipal District SFRA Assessment**

- 3.2.1 The updated SFRA for the Development Plan assessed the risk of flooding in every parcel of zoned land in the County. Tables for each Settlement summarise the risk of flooding in residential, employment, town centre and

special policy area land-use zoning designations for each of the main settlements in the County and outlines the assessment criteria used where the Planning Authority zoned these sites for development.

### **3.3 Flood Risk Management Strategy**

- 3.3.1 The assessment and management of flood risks in relation to planned future development is an important element of sustainable development. The majority of towns, villages and smaller settlements have a river or stream either running through the built-up area or close by and are inevitably exposed to some degree of flood risk when those rivers or streams overflow their normal course. Similarly, in coastal areas, flooding can periodically occur following unusual weather or tidal events.
- 3.3.2 Generally, the purpose of zoning is to indicate to property owners and members of the public the types of development which the Planning Authority considers most appropriate in each land use category. Zoning is designed to reduce conflicting uses within areas, to protect resources and, in association with phasing, to ensure that land suitable for development is used to the best advantage of the community as a whole.
- 3.3.3 The approach adopted, and reflected in a series of proposed amendments to the Draft Plan, has generally been to
- Include, on the settlement maps, information on the areas at risk of flooding (extent of Flood Zones A and B, with Flood Zone C being all other land),
  - Avoid development in areas at risk of flooding; and
  - Where development in floodplains cannot be avoided, to take a sequential approach to flood risk management based on avoidance, reduction and mitigation of risk and to apply the Justification Test for development plans.

### **3.4 The Approach to Zoning in Areas at Risk of Flooding**

- 3.4.1 Within the areas identified as being within Zone A or B, all proposals for development will need to comply with the Ministerial Guidelines – ‘The Planning System and Flood Risk Management. In this Draft Plan and its proposed amendments, land use zoning objectives within Flood Zones A and B have been included in the plan where the land use zoning objective has been considered in the context of the “Development Plan Justification Test” set out in the Ministerial Guidelines.
- 3.4.2 In the preparation of the proposed amendments to the Draft Development Plan, proposed zonings were assessed relative to the provisions of the Guidelines and the Justification Test for Development Plans as detailed in the Guidelines. The Justification Test is required in situations where the planning authority needs to consider future development in areas at a high or moderate risk of flooding, for uses or development vulnerable to flooding that would otherwise be inappropriate. In such circumstances, all of the following criteria must be satisfied:
- a. the urban settlement is targeted for growth in the NPF, RSEs, or statutory plans defined under the provisions of the Planning and Development Act, 2000, as amended.

- b. the zoning is required to achieve the proper planning and sustainable development of an urban settlement and is:
- Essential to facilitate the regeneration and/or expansion of the centre of the urban settlement;
  - Comprises significant previously developed and/or under utilised lands;
  - Is within or adjoining the core of an established or designated urban settlement;
  - Will be essential to achieving compact and sustainable urban growth; and
  - There are no suitable alternative lands for the particular use in areas at lower risk of flooding within or adjoining the core of the urban settlement.
- c. A Flood Risk Assessment to the appropriate level of detail has been carried out as part of the SEA, which demonstrates that flood risk to the development can be adequately managed and the development will not cause adverse impacts elsewhere.

3.4.3 Flood risk within the settlements has been reviewed and the need to apply the Justification Test has been assessed. Where the Plan Making Justification Test was required, it is detailed in the relevant Municipal District section of this SFRA, along with details of the screening assessment. The recommendations and guidance provided in the Municipal District is underpinned by the more general guidance in relation to assessing and managing flood risk in Flood Zones A, B and C across the county that is detailed in Section 5 onwards.

3.4.4 Where the Justification Test has not been applied it is either the case that the land parcel is within Flood Zone C and is not at risk of fluvial or tidal flooding. In this case, the recommendations for consideration of other sources of risk and a drainage impact assessment, as detailed in Section 5.2 and 5.3, should be carried out to support a planning application. Alternatively, part of the site may be at risk of flooding but the sequential approach may be applied to locate new development in areas at lower risk of flooding and therefore the Justification Test is not required. An appropriately detailed flood risk assessment is still required to demonstrate how the flood risks within the site will be managed.

3.4.5 In the case of existing built up areas, such as for residential, commercial or business, within Flood Zones A and B, unless the Justification Test has been applied and passed, it is the case that no new development is permitted and the only works allowed will be in accordance with Section 5.28 of the Planning Guidelines, and the 'Minor Development' Section of this SFRA.

3.4.6 There are a number of Utility zonings for 'roads and walks' within the county which intersect with Flood Zone A and B. In the case of 'walks' these are water compatible, but a flood risk assessment should form part of the design stage of the project. The FRA should assess, frequency and depth of flooding, need for flood warning or walk closure during periods of high water, and should feed into the specification of route, path level and materials. It may be possible to raise paths in some locations to avoid frequent inundation, but it is important that flow paths are not obstructed as a result. A specific flood risk assessment should also be undertaken for the proposed roads, and any associated water course crossings (such as bridges and culverts) will require Section 50 consent from the OPW.





# Flood Risk Assessment of Municipal Districts and Justification Tests

## 4.1 Introduction to MD approach

4.1.1 Three volumes of the draft plan relate specifically to the 8 Municipal Districts which comprise the County. A chapter for each Municipal District sets out the relevant Municipal District overview and profile as well as setting out the policies and objectives, including specific land use zoning objectives, for the settlements of the Municipal District.

**Volume Three:** North Cork (Fermoy MD and Kanturk Mallow MD).

**Volume Four:** South Cork (Carrigaline MD, Cobh MD, East Cork MD and Macroom MD).

**Volume Five:** West Cork (Bandon Kinsale MD and West Cork MD).

## 4.2 The Fermoy Municipal District

- 4.2.1 The Fermoy Municipal District straddles two Strategic Planning Areas for which the Draft County Development Plan sets out differing objectives. Fermoy, its hinterland and the area to the south of Fermoy are located within the Greater Cork Ring Strategic Planning Area. Mitchelstown and the northern part of the Municipal District are located within the North Cork Strategic Planning Area.
- 4.2.2 Two main towns: Fermoy and Mitchelstown.
- 4.2.3 Ten Key Villages: Rathcormack, Ballyhooley, Castlelyons/Bridebridge, Castletownroche, Conna, Doneraile, Glanworth, Glenville, Kildorrery, and Kilworth.
- 4.2.4 Five Villages: Ballynoe, Bartlemy, Clondulane, Coolagown, Killavullen and Shanballymore.

### Sources of Flooding

- 4.2.5 Rivers are the primary cause of flooding in the Fermoy Municipal District with flood events attributed to fluvial sources ranging from the Blackwater River in particular to smaller tributaries and drains.

### Rivers in the West Cork Municipal District Area

- 4.2.6 The Fermoy municipal district landscape is characterised by the Blackwater and its tributaries criss-crossing the district. The Blackwater flows through counties Kerry, Cork, and Waterford, extending to 134km in length and, together with its 29 tributaries, drains a catchment of 3324 km<sup>2</sup>. The catchment is a broad valley surrounded by mountains to the north and south. The Blackwater is also noted for its diverse range of habitats that are protected as part of the Blackwater River Special Area of Conservation (SAC). Many of the tributaries are major rivers themselves such as the Araglin, Awbeg, Funshion and Bride. The following table lists the settlements in the district that have rivers running through or close to their development boundary.

| <b>Table 3: Rivers in the Fermoy Municipal District</b> |   |
|---|---|
| <b>Settlement – Main Towns</b>                          | <b>River</b>  |
| Fermoy  | Blackwater  |
| Mitchelstown  | Gradoge, Tributary of the Funshion                    |
| <b>Settlement: Key Villages</b>                         | <b>River</b>  |
| Charleville   | Glen  |
| Ballyhooley   | Blackwater  |
| Castlelyons / Bridebridge                               | Shanowenadrimina Stream, Tributary of the River Bride |
| Castletownroche   | Blackwater  |
| Conna   | Bride   |
| Doneraile   | Blackwater  |
| Glanworth   | Funshion  |
| Kildorrery  | Farahy/Funshion                                       |
| Kilworth  | Douglas (Araglin) and Funshion                        |
| <b>Settlement: Villages</b>                             | <b>River</b>  |
| Ballynoe  | Douglas (Bride)                                       |
| Bartlemy  | Flesk (Bride) to the north of the village             |
| Clondulane  | Blackwater  |

| <b>Table 3: Rivers in the Fermoy Municipal District</b> |                                       |
|---|---------------------------------------|
| <b>Settlement – Main Towns</b>                          | <b>River</b>                          |
| Killavullen   | Ross (Killavullen) and the Blackwater |
| Shanballymore   | Blackwater                            |

4.2.7 Recent significant flood events have included significant inundation at Castlelyons following Storm Desmond in Dec. 2015/Jan. 2016. It should be noted that flood events occur frequently within the Municipal District as evidenced by the number of past flood events, both single and recurring events, represented on [Floodinfo.ie](http://Floodinfo.ie).

**Addressing Flood Risk in the Fermoy Municipal District**

4.2.8 This section details the approach to Flood Risk Management adopted in the Fermoy Municipal District. As part of the review of the Draft Development Plan, all zoned lands in areas at risk of flooding have been considered in the context of the flood zone maps.

4.2.9 The inclusion of the flood zone information on the settlement maps of the Municipal District is the first step in managing flood risk in the future. The mapping provides for an improved understanding of flood risk issues within the County. The maps indicate the extent of flood zones that should be safeguarded from development and will support the application of the sequential approach, and the justification test as appropriate, in areas where development is proposed.

4.2.10 Flood risk to each settlement has been appraised based on the Flood Zones which cross the settlement boundary and is summarised in table 4 below.

**Table 4: Flood Risk by Settlement in the Fermoy Municipal District**

| <b>Settlement</b>       | <b>Part of the settlement within Flood Zone A or B?</b> | <b>Comment</b>   |
|-------------------------|---|--|
| <b>Main Settlements</b> |   |  |
| Fermoy                  | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Mitchelstown            | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| <b>Key Villages</b>     |   |  |
| Rathcormack             | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Ballyhooly              | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Castlelyons/Bridebridge | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Castletownroche         | Yes   |  |
| Conna                   | Yes   |  |
| Doneraile               | Yes   |  |
| Glanworth               | Yes   |  |
| Glenville               | Yes   |  |
| Kildorrery              | No  |  |
| Kilworth                | No  |  |
| <b>Villages</b>         |   |  |
| Ballynoe                | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all   |
| Bartlemy                | No  |  |

|               |     |  |
|---------------|-----|--|
|               |     | sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.  |
| Clondulane    | Yes | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Coolagown     | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Killavullen   | Yes | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Shanballymore | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |

4.2.11 The Table below lists the specific zoned sites within the Fermoy Municipal District that are located within either Flood Zone A or B and the circumstances of their inclusion.

| <b>Table 5: Fermoy Municipal District - Specific Land Use Zonings within Flood Zone A or B</b> |   |                   |   |   |
|--|---|-------------------|---|---|
| <b>Settlement</b>  | <b>Draft Plan Zoning Objective</b>                                | <b>Flood Zone</b> | <b>Comment</b>                                    | <b>Proposed Draft Amendment</b>   |
| Fermoy   | FY-GB 1   | A/B/C             | Appropriate, retain water compatible uses         |   |
| Fermoy   | FY-GC-01  | A/B/C             | Appropriate, retain water compatible uses         |   |
| Fermoy   | FY-GC-02  | A/B/C             | Appropriate, retain water compatible uses         |   |
| Fermoy   | FY-GC-04  | A/B/C             | Appropriate, retain water compatible uses         |   |
| Fermoy   | FY-GC-05  | A/B/C             | Appropriate, retain water compatible uses         |   |
| Fermoy   | FY-GC-10  | A/B/C             | Appropriate, retain water compatible uses         | Amendment No. 3.1.4.7 - It is proposed to amend the Fermoy zoning map to include this site in the Green Infrastructure Zoning FY-GC-10. |
| Fermoy   | FY-GC-11  | A/B/C             | Appropriate, retain water compatible uses         |   |
| Fermoy   | FY-GC-12  | B/C               | Appropriate, retain water compatible uses         |   |
| Fermoy   | FY-GR-06  | B/C               | Appropriate, retain water compatible uses         | Amendment No. 3.1.4.11 – It is proposed to include an * in zoning objective FY-GR-06.   |
| Fermoy   | FY-T-01   | A/B/C             | Justification Test required. See the table below. |   |
| Fermoy   | FY-T-02   | A/B/C             | Justification Test required. See the table below. |   |
| Fermoy   | FY-T-03   | A/B/C             | Justification Test required. See the table below. |   |
| Fermoy   | FY-T-04   | A/B/C             | Justification Test required. See the table below. |   |
| Fermoy   | Existing Mixed / General Business / Industrial (lands North of T- | A                 | Justification Test required. See the table below. |   |

| Table 5: Fermoy Municipal District - Specific Land Use Zonings within Flood Zone A or B |  |            |   |   |
|---|--|------------|---|---|
| Settlement  | Draft Plan Zoning Objective  | Flood Zone | Comment   | Proposed Draft Amendment  |
|   | 02)  |            |   |   |
| Mitchelstown  | MH-AG-03   | A/B/C      | Appropriate, retain water compatible uses   | Amendment No. 3.1.5.19 - It is proposed to include an * in zoning objective MH-AG-03  |
| Mitchelstown  | MH-GB1   | A/B/C      | Appropriate, retain water compatible uses   |   |
| Mitchelstown  | MH-GC-01   | A/B/C      | Appropriate, retain water compatible uses.  | Amendment No. 3.1.5.5 - It is proposed to extend boundary of MH-GC-01 to the north to include the areas at risk of flooding.<br><br>Amendment No. 3.1.5.20 – It is proposed to include an * in zoning objective MH-GC-01. |
| Mitchelstown  | MH-GC-05   | A/B/C      | Appropriate, retain water compatible uses   | Amendment No. 3.1.5.21 - It is proposed to include an * in zoning objective MH-GC-05.   |
| Mitchelstown  | MH-I-02  | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | Amendment No. 3.1.5.23 - It is proposed to include an * in zoning objective MH-I-02.  |
| Mitchelstown  | MH-T-01  | A/B/C      | Justification Test required. See the table below.                                       |   |
| Mitchelstown  | MH-U-02  | A          | Appropriate, retain water compatible uses.  | Amendment No. 3.1.5.24 – It is proposed to include an * in zoning objective MH-U-02.  |
| Mitchelstown  | Existing Mixed / General Business / Industrial (lands south of MH-GC-05) | A/B/C      | Justification Test required. See the table below.                                       |   |

**Table 5: Fermoy Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| <b>Settlement</b>       | <b>Draft Plan Zoning Objective</b>                                      | <b>Flood Zone</b> | <b>Comment</b>  | <b>Proposed Draft Amendment</b>  |
|-------------------------|---|-------------------|---|--|
| Mitchelstown            | Existing Mixed / General Business / Industrial (lands south of MH-I-02) | A/B/C             | Justification Test required. See the table below.                                       | Amendment – 3.1.5.6 - Remove land from the Existing Mixed / General Business / Industrial Uses zone north of the river and re zone it as Utilities MH-U-03   |
| Castlelyons/Bridebridge | GC-01   | A/B/C             | Appropriate, retain water compatible uses   |  |
| Castlelyons/Bridebridge | X-01  | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | Amendment No. 3.1.9.3 – It is proposed to add additional text in objective X-01 for Castlelyons Bridebridge as follows – ‘Areas at risk of flooding should be avoided’   |
| Castlelyons/Bridebridge |   | A                 |   | Amendment No. 3.1.9.2 – Amend the settlement map of Castlelyons/Bridebridge to include two new green infrastructure zonings<br>GC-03 – Open space preserving the identity and setting of the village. The area is situated in the floodplain and should be retained free from development *<br><br><b>Final Comment:</b> Appropriate, retain water compatible uses |
| Castlelyons/Bridebridge |   | A                 |   | Amendment No. 3.1.9.2 – Amend the settlement map of Castlelyons/Bridebridge to include two new green infrastructure zonings<br>GC-04 – Open space preserving the identity and setting of the village.  |



| Table 5: Fermoy Municipal District - Specific Land Use Zonings within Flood Zone A or B |                             |            |   |  |
|---|-----------------------------|------------|---|--|
| Settlement  | Draft Plan Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment   |
|   |                             |            |   | The area is situated in the floodplain and should be retained free from development *<br><br><b>Final Comment:</b> Appropriate, retain water compatible uses |
| Castletownroche   | GC-01                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Conna   | GC-01                       |            |   | Amendment No. 3.1.11.5 – It is proposed to include an * in zoning objective GC-01.   |
| Conna   | GC-02                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Doneraile   | GA-03                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Doneraile   | GC-01                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Doneraile   | GC-02                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Doneraile   | GC-04                       | A          | Appropriate, retain water compatible uses   |  |
| Glanworth   | GC-01                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Glanworth   | GC-02                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Glanworth   | GR-02                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Glenville   | GC-03                       | A/B/C      | Appropriate, retain water compatible uses   |  |
| Glenville   | GR-02                       | A/B/C      | Appropriate, retain water compatible uses   | Amendment No. 3.1.14.3 – It is proposed to include an * in zoning objective GR-02.   |
| Glenville   | U-01                        | A          | Appropriate, retain water compatible uses   | Amendment No. 3.1.14.4 – It is proposed to include an * in zoning objective U-01.  |
| Rathcormack   | RK-C-02                     | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Rathcormack   | RK-GA-02                    | A/B/C      | Appropriate, retain water compatible uses.  | Amendment No. 3.1.7.9 – It is proposed to include an * in zoning objective RK-GA-02  |

**Table 5: Fermoy Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| <b>Settlement</b> | <b>Draft Plan Zoning Objective</b> | <b>Flood Zone</b> | <b>Comment</b>  | <b>Proposed Draft Amendment</b>   |
|-------------------|------------------------------------|-------------------|---|---|
| Rathcormack       | RK-GC-03                           | A/B/C             | Appropriate, retain water compatible uses.  |   |
| Rathcormack       | RK-GC-05                           | A/B/C             | Appropriate, retain water compatible uses   | Amendment No. 3.1.7.4 – It is proposed to extend the Green Infrastructure zoning RK-GC-05 in Rathcormack to include additional lands at risk of flooding. |
| Rathcormack       | RK-GR-04                           | A/B/C             | Appropriate, retain water compatible uses.  | Amendment No. 3.1.7.10 – It is proposed to include an * in zoning objective RK-GR-04.   |
| Rathcormack       | RK-R-03                            | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Rathcormack       | RK-T-01                            | A/B/C             | Justification Test required. See the following section of this SFRA                     | Amendment No. 3.1.7.11 – It is proposed to include an * in zoning objective RK-T-01   |
| Rathcormack       | RK-U-01                            | A                 | Appropriate, retain water compatible uses   | Amendment No. 3.1.7.12 – It is proposed to add an * to zoning objective RK-U-01.  |
| Killavullen       | GA-02                              | A/B/C             | Appropriate, retain water compatible uses   |   |
| Killavullen       | GC-01                              | A/B/C             | Appropriate, retain water compatible uses   |   |

### Justification Tests for Fermoy Municipal District

4.2.12 The table below details the Justification Tests for the areas identified above as being within Flood Zone A and B, and where the sequential approach and avoidance cannot be achieved.

| <b>Table 6: Fermoy Justification Tests</b>  |   |  |   |   |   |
|---|---|--|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Fermoy FY-T-01</b>   | <b>Fermoy FY-T-02</b>  | <b>Fermoy FY-T-03</b>   | <b>Fermoy FY-T-04</b>   | <b>Fermoy Existing Mixed/General Business/Industrial Uses lands North of FY-T-02</b>  |
| <b>The urban settlement is targeted for growth</b>  | Fermoy is a medium sized market town and one of two main towns in the Fermoy Municipal District. It is an important residential and employment centre identified for moderate scale growth.   | Fermoy is a medium sized market town and one of two main towns in the Fermoy Municipal District. It is an important residential and employment centre identified for moderate scale growth.                                    | Fermoy is a medium sized market town and one of two main towns in the Fermoy Municipal District. It is an important residential and employment centre identified for moderate scale growth.   | Fermoy is a medium sized market town and one of two main towns in the Fermoy Municipal District. It is an important residential and employment centre identified for moderate scale growth.                                   | Fermoy is a medium sized market town and one of two main towns in the Fermoy Municipal District. It is an important residential and employment centre identified for moderate scale growth. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary location for retail and mixed uses in Fermoy. The zoning will provide for employment opportunities for residents of the settlement and wider hinterland. | To cater for the sequential expansion of the town centre. Development to comprise a balanced and appropriate mix of town centre uses, and to provide for adequate connectivity and permeability with other town centres zones. | To facilitate the sequential expansion of existing town centre. Development to comprise a balanced and appropriate mix of town centre uses and to provide for adequate connectivity and permeability with other town centres zones. | To cater for the sequential expansion of the town centre. Development to comprise a balanced and appropriate mix of town centre uses and to provide for adequate connectivity and permeability with other town centres zones. | This site is located in the existing built up area and the zoning reflects this.  |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban</b>  | The zoning is essential to maintain and regenerate the town centre as a primary location for retail and other mixed uses that provide goods and services to the   | FY-T-02 is essential to the expansion of the town centre. It has frontage onto O’Rahilly Row (Courthouse Road) and is closest to the existing retail core.   | FY-T-03 is essential to the expansion of the town centre. It has frontage onto O’Rahilly Row and lies adjacent to the town centre.  | FY-T-04 is essential to the expansion of the town centre.   | The zoning is required to consolidate the existing built up area and provides an opportunity for regeneration of the area.  |

| <b>Table 6: Fermoy Justification Tests</b>  |  |   |  |   |  |
|---|--|---|--|---|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Fermoy FY-T-01</b>  | <b>Fermoy FY-T-02</b>   | <b>Fermoy FY-T-03</b>  | <b>Fermoy FY-T-04</b>   | <b>Fermoy Existing Mixed/General Business/Industrial Uses lands North of FY-T-02</b>         |
| <b>settlement.</b>  | public.  |   |  |   |  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | Yes there are opportunities for redevelopment within FY-T-01.  | It is a brownfield site.  | It is a brownfield site.   | It was previously used as an overflow car park for the mart but is essentially greenfield.  | Site is the former BUPA/Laya offices which contain vacant buildings and underutilised lands. |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre and is identified in the zoning objective as the preferred location for new retail development in Fermoy.         | Site is located adjacent to the town centre.  | Site is located in proximity to the town centre.   | Site is located in proximity to the town centre.  | Site is located in proximity to the town centre.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.  | Redevelopment provides an opportunity to consolidate and regenerate the town centre and sequentially represents the best opportunity for development.                     | Redevelopment provides an opportunity to consolidate and regenerate the town centre and sequentially represents a good opportunity for development | Development provides an opportunity to consolidate and regenerate the town centre and sequentially represents a good opportunity for development. | The site is located within an existing built up area.  |
| <b>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.</b> | There is an established town centre on the site. There are no alternative sites that will enable the regeneration and continuation of the town centre. | This site is located adjacent to the town centre and there are no alternative sites at lower flood risk that would allow for the sequential expansion of the town centre. | There are no alternative sites that will enable the coherent and sequential expansion of existing town centre.                                     | There are no alternative sites that will enable the coherent expansion of existing town centre.   | The site is already an existing built up area with an established use on the site.           |

| <b>Table 6: Fermoy Justification Tests</b>  |  |  |  |  |  |
|---|--|--|--|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>                  | <b>Fermoy FY-T-01</b>  | <b>Fermoy FY-T-02</b>  | <b>Fermoy FY-T-03</b>  | <b>Fermoy FY-T-04</b>  | <b>Fermoy Existing Mixed/General Business/Industrial Uses lands North of FY-T-02</b>   |
| <b>flood risk assessment to an appropriate level of detail has been carried out</b> | The area benefits from the recently constructed OPW Flood Relief Scheme but is largely within Flood Zone A. It is defended to the 1% AEP standard of protection. Proposals for new development should include a detailed FRA, which includes an assessment of risk in the event of defence failure (demountables not being erected is most likely), including emergency plan. Where FFL cannot be raised as the guidance in this SFRA, highly vulnerable uses on the ground floor should be avoided. | The area benefits from the recently constructed OPW Flood Relief Scheme but is fully within Flood Zone A. It is defended to the 1% AEP standard of protection. Proposals for new development should include a detailed FRA, which includes an assessment of risk in the event of defence failure (demountables not being erected is most likely), including emergency plan. Where FFL cannot be raised as the guidance in this SFRA, highly vulnerable uses on the ground floor should be avoided. | The area benefits from the recently constructed OPW Flood Relief Scheme but is largely within Flood Zone A. It is defended to the 1% AEP standard of protection. Proposals for new development should include a detailed FRA, which includes an assessment of risk in the event of defence failure (demountables not being erected is most likely), including emergency plan. Where FFL cannot be raised as the guidance in this SFRA, highly vulnerable uses on the ground floor should be avoided. | The area benefits from the recently constructed OPW Flood Relief Scheme but is fully within Flood Zone A. It is defended to the 1% AEP standard of protection. Proposals for new development should include a detailed FRA, which includes an assessment of risk in the event of defence failure (demountables not being erected is most likely), including emergency plan. Where FFL cannot be raised as the guidance in this SFRA, highly vulnerable uses on the ground floor should be avoided. | The area benefits from the recently constructed OPW Flood Relief Scheme but is fully within Flood Zone A. It is defended to the 1% AEP standard of protection. Proposals for new development should include a detailed FRA, which includes an assessment of risk in the event of defence failure (demountables not being erected is most likely), including emergency plan. Where FFL cannot be raised as the guidance in this SFRA, highly vulnerable uses on the ground floor should be avoided. |
| <b>Result</b>   | Pass   | Pass   | Pass   | Pass   | Pass   |
| <b>Recommendation for zoning</b>  | Retain current zoning objective, but limit highly vulnerable development at ground level unless FFL can be appropriately raised, even behind defences.   | Retain current zoning objective, but limit highly vulnerable development at ground level unless FFL can be appropriately raised, even behind defences.   | Retain current zoning objective, but limit highly vulnerable development at ground level unless FFL can be appropriately raised, even behind defences.   | Retain current zoning objective, but limit highly vulnerable development at ground level unless FFL can be appropriately raised, even behind defences.   | Retain current zoning objective, but limit highly vulnerable development at ground level unless FFL can be appropriately raised, even behind defences.   |

| <b>Table 7: Mitchelstown Justification Tests</b>  |  |   |  |
|---|--|---|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Mitchelstown MH-T-01</b>  | <b>Mitchelstown Existing Mixed / General Business / Industrial lands south of MH-GC-05</b>  | <b>Mitchelstown Existing Mixed / General Business / Industrial lands south of MH-I-02</b><br><br><b>(See Amendment No. 3.1.5.6 - Remove land from the Existing Mixed / General Business / Industrial Uses zone north of the river and re zone it as Utilities MH-U-03)</b> |
| <b>The urban settlement is targeted for growth</b>  | Mitchelstown is a small planned Georgian town with a large agricultural hinterland and is one of two main towns in the Fermoy Municipal District. It is an important employment and social hub for north Cork and is identified for moderate scale growth. | Mitchelstown is a small planned Georgian town with a large agricultural hinterland and is one of two main towns in the Fermoy Municipal District. It is an important employment and social hub for north Cork and is identified for moderate scale growth.  | Mitchelstown is a small planned Georgian town with a large agricultural hinterland and is one of two main towns in the Fermoy Municipal District. It is an important employment and social hub for north Cork and is identified for moderate scale growth.                 |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary location for retail and mixed uses in Mitchelstown. The zoning will provide for employment opportunities for residents of the settlement and wider hinterland.              | The site is the existing business and industrial area which contains Dairygold Cooperative facilities amongst other businesses. The area is located directly adjacent to the town centre.   | The lands contain the existing public wastewater treatment facilities.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as a primary location for retail and other mixed uses that provide goods and services to the public.  | Consolidating the existing built up business and industrial area is essential to the regeneration and growth of Mitchelstown to offer new employment opportunities at this core location and promote the town as a key driver in the North Cork Agri-Food Network (as identified in the Southern Regional Spatial and Economic Strategy). | The operation and continued use of the existing public wastewater treatment facilities is essential to serve existing and future growth of the settlement.   |
| <b>Comprises significant previously developed and/</b>  | There are opportunities for redevelopment within MH-T-01. The zoning objective encourages development on derelict and vacant sites to help consolidate and strengthen the town   | The zoned area includes underutilised lands. There are also a number of vacant units available within the zone.   | There are lands within the EBUA zone adjacent to the treatment plant to cater for expansion of the facilities.   |

| <b>Table 7: Mitchelstown Justification Tests</b>  |   |  |  |
|---|---|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Mitchelstown MH-T-01</b>   | <b>Mitchelstown Existing Mixed / General Business / Industrial lands south of MH-GC-05</b>   | <b>Mitchelstown Existing Mixed / General Business / Industrial lands south of MH-I-02</b><br><br><b>(See Amendment No. 3.1.5.6 - Remove land from the Existing Mixed / General Business / Industrial Uses zone north of the river and re zone it as Utilities MH-U-03)</b> |
| <b>or under utilised lands</b>  | centre.   |  |  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre and is the only town centre zoning in the settlement.  | Site is located adjacent to the town centre.   | The site is located within the settlement boundary.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.   | The zoning provides for new employment opportunities at this core location directly adjacent to the town centre.   | The provision of adequate wastewater infrastructure is essential to achieving compact growth in the settlement.  |
| <b>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.</b> | There is an established town centre on the site. There are no alternative sites that will enable the regeneration and continuation of the town centre.                                      | This site is an existing built-up area.  | The site contains the existing public wastewater facility.   |
| <b>A flood risk assessment to an appropriate level of detail has</b>  | A small part of the overall town centre area is within Flood Zone A and B. This consists of existing development, in the form of a discount retail store and associated car parking. Should | Part of the EBUA is within Flood Zone A and B. This consists of existing development, largely in the form of a less vulnerable development. Should this land be redeveloped in the future, a | The WWTP lies partly within Flood Zones A, B and C. Although considered highly vulnerable, the location of the WWTP is appropriate given its location alongside the river. Any future  |

| <b>Table 7: Mitchelstown Justification Tests</b>                   |   |   |   |
|--|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b> | <b>Mitchelstown MH-T-01</b>   | <b>Mitchelstown Existing Mixed / General Business / Industrial lands south of MH-GC-05</b>  | <b>Mitchelstown Existing Mixed / General Business / Industrial lands south of MH-I-02</b><br><br><b>(See Amendment No. 3.1.5.6 - Remove land from the Existing Mixed / General Business / Industrial Uses zone north of the river and rezone it as Utilities MH-U-03)</b> |
| <b>been carried out</b>  | this land be redeveloped in the future, a detailed flood risk assessment must be carried out to determine appropriate finished floor levels and to detail safe access and egress. Highly vulnerable development in this area will not be permitted. It is also essential that any future development does not increase, and preferably reduces, flood risk to neighbouring sites. | detailed flood risk assessment must be carried out to determine appropriate finished floor levels and to detail safe access and egress. Highly vulnerable development in this area will not be permitted. It is also essential that any future development does not increase, and preferably reduces, flood risk to neighbouring sites. | upgrade or expansion of the WWTP will need to be accompanied by an appropriately detailed FRA, with suitable mitigation measures provided to manage flood risk to and from the plant, including consideration of the potential for contamination of flood waters.         |
| <b>Result</b>  | Pass  | Pass  | Pass  |
| <b>Recommendation for zoning</b>                                   | Retain existing zoning objective.   | Retain existing zoning objective.   | Retain existing zoning objective.   |



| <b>Table 8: Rathcormack Justification Tests</b>   |  |
|---|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Rathcormack<br/>RK-T-01</b>   |
| <b>The urban settlement is targeted for growth</b>  | Rathcormack is a key village in the Fermoy Municipal District and is the only Key Village in the Municipal District with a population above 1,500. It is an important residential village in the Greater Cork Ring Strategic Planning Area and is identified for small scale growth.   |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing retail centre of the village and will provide for commercial and employment opportunities for residents of the village and the wider area.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the old village centre as a primary location for retail and other mixed uses that provide goods and services to the public.   |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are many derelict and vacant buildings in the village centre that need refurbishment and new uses.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing (old) village centre and is the key service core for the village.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing village centre and will be key to achieving compact urban growth.   |
| <b>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.</b>     | There is an established village centre in the zone. There are no alternative sites that will enable the regeneration and continuation of the village centre.   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | Much of Rathcormack T zoning objective lands are within Flood Zone A and B, but it is noted that the river is partially culverted within the centre. Any proposal for development within Flood Zone A and B should be accompanied by an appropriately detailed FRA, which includes consideration of culvert blockage risks and associated overland flow paths. |

| <b>Table 8: Rathcormack Justification Tests</b>                    |  |
|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b> | <b>Rathcormack<br/>RK-T-01</b>   |
|  | Even within Flood Zone C, FFL should be set to mitigate these risks. Within Flood Zone A and B, highly vulnerable development at ground floor levels should be avoided. Less vulnerable development in Flood Zone A must also be suitably mitigated with regards to FFL and it is essential that any future development does not increase, and preferably reduces, flood risk to neighbouring sites. |
| <b>Result</b>  | Pass   |
| <b>Recommendation for zoning</b>                                   | Retain existing zoning objective   |

### 4.3 Kanturk - Mallow Municipal District

- 4.3.1 The Kanturk - Mallow Municipal District lies entirely within the North Strategic Planning area as defined in the Draft Development Plan. It is a predominantly rural Municipal District that accommodates an extensive network of settlements as follows:
- 4.3.2 Five main towns: Mallow, Charleville, Kanturk, Buttevant and Newmarket.
- 4.3.3 Ten Key Villages: Ballydesmond, Banteer, Boherbue, Churchtown, Dromahane, Dromina, Grenagh, Knocknagree, Milford, and Newtownshandrum.
- 4.3.4 Eighteen Villages: Ballyclough, Ballyhea, Bweeng, Castlemagner, Cecilstown, Cullen, Freemount, Glantane, Kilbrin, Kiskeam, Lis Carroll, Lombardstown, Lyre, New Twopothouse, Rathcoole, Rockchapel, and Tullylease.
- 4.3.5 One Other Location: Dromalour.

#### Sources of Flooding

- 4.3.6 Rivers are the primary cause of flooding in the Kanturk Mallow Municipal District with flood events attributed to fluvial sources ranging from the Blackwater River in particular to smaller tributaries and drains.
- 4.3.7 It should be noted that flood events occur frequently within the Municipal District as evidenced by the number of past flood events, both single and recurring events, represented on [Floodinfo.ie](http://Floodinfo.ie).

#### Rivers in the Kanturk Mallow Municipal District.

- 4.3.8 The upper and mid reaches of the Blackwater River system runs north-south and west-east respectively through the Municipal District with the remainder of the District being mainly drained by the Allow, Dalua, Brogeen, Owentaraglin, Finnow, Glen and Rathcoole Rivers. These also join the Blackwater in a stretch from Rathmore to Banteer. The River Glen, Deel and Feale flow through the north of the Municipal District and emerge into the Shannon Catchment.
- 4.3.9 The Blackwater River rises in the Mullaghareirk mountains in Kerry and its upper course effectively forms the border between Kerry and Cork as it flows down through Ballydesmond, and to the west of Knocknagree, before turning east in the vicinity of Rathmore. This transition effectively marks the start of its mid reaches and it starts to grow significantly as it gathers tributaries in the following order- Owentaraglin, Finnow, Rathcoole, Allow, Glen. The Blackwater then flows towards Mallow and Fermoy. The Blackwater flows largely uninterrupted throughout the Municipal District save for several bridging points. The river has also formed significant flood plains, mainly in the Rathcoole-Banteer areas, and these plains follow the river course to Mallow, which also have a large floodplain. In terms of predicting flood events, the primary system for monitoring the Blackwater for the Mallow and Fermoy Flood Relief Schemes is a network of over 40 no. river and rain monitoring stations

that the OPW maintain. There are two monitoring stations present at Duarrigle and Dromcummer which are managed by Cork County Council and Environmental Protection Agency.

- 4.3.10 The Allow River forms in the Mullaghareirk mountains several miles to the north of Meelin and flows down to the south through Freemount village before gathering several tributaries and flowing through Kanturk where it meets with the Dalua and Brogeen rivers to form a flood plain between Kanturk town and the Blackwater to the south. Flooding has occurred in Kanturk from the Allow/Dalua confluence over previous decades and flood relief works are in place in this town. Similarly, flooding has also taken place in Freemount in recent years.
- 4.3.11 The Dalua River emerges to the south west of Meelin village and also flows to the west of Newmarket village whilst gathering several tributaries. It joins with the Allow River at Kanturk before flowing into the River Blackwater. Flooding along the Dalua does not affect settlements save for when it merges with the Allow in the area near Kanturk.
- 4.3.12 The Brogeen river rises on the southern slopes of the Mullaghareirks and flows to the east past Boherbue to meet the Allow river in the flood plains between Kanturk and the Blackwater.
- 4.3.13 The Owentaraglin River emerges from the Mullaghareirks and flows south to meet the Blackwater via Kiskeam and Cullen. Its main flood risk is in these settlements.
- 4.3.14 The Finnow River forms to the south of Millstreet from several tributaries and flows to the north to meet the Blackwater. The Finnow represent a significant flood risk to the town, in combination with the Blackwater River.
- 4.3.15 The Glen River (south) flows from a valley in the Boggeragh mountains and thereafter flows around Banteer through a flood plain formed with the Blackwater. The river represents a significant flood risk to the village in combination with the Blackwater River.
- 4.3.16 The Rathcoole River is formed from several tributaries flowing from the Boggeragh Mountains and thereafter flows north through Rathcoole village to meet the Blackwater. The river represents a significant flood risk to the eastern side of the village.
- 4.3.17 The Deel River rises to the north of Dromina and flows through Milford village and then on into County Limerick. The river represents a significant flood risk to the centre of Milford Village.
- 4.3.18 The Feale River rises in the Mullaghareirk mountains and flows through Rockchapel village to the Limerick border where it forms part of the Shannon Catchment area. The river poses a significant flood risk to Rockchapel and has flooded in previous decades.
- 4.3.19 Recent significant flood events in the Municipal District included significant inundation of the floodplain along the Blackwater between Millstreet and Mallow. It should be noted that such events occur frequently, as represented on [www.floodinfo.ie](http://www.floodinfo.ie). Other notable events include flooding in Freemount from the Allow. Periodic flooding has occurred in Kanturk in the past from the Allow, Dalua and Brogeen. Flooding has occurred to the north, west and south of Millstreet at times of high flow from the Finnow and Blackwater and similar events

have occurred in Banteer. Some road flooding has occurred in Newmarket from the Mill Stream. The River Feale has flooded in Rockchapel most notably in 1986 when significant damage occurred to a bridge.

### **Addressing Flood Risk in the Kanturk Mallow MD**

- 4.3.20 This section details the approach to Flood Risk Management adopted in the Kanturk Mallow MD.
- 4.3.21 As part of the review of the Draft Development Plan, all zoned lands in areas at risk of flooding have been considered in the context of the flood zone maps.
- 4.3.22 The inclusion of the flood zone information on the settlement maps of the Municipal District is the first step in managing flood risk in the future. The mapping provides for an improved understanding of flood risk issues within the County. The maps indicate the extent of flood zones that should be safeguarded from development and will support the application of the sequential approach, and the justification test as appropriate, in areas where development is proposed.
- 4.3.23 Flood risk to each settlement has been appraised based on the Flood Zones which cross the settlement boundary and is summarised in table 9 below.

**Table 9: Flood Risk by Settlement in the Kanturk Mallow Municipal District**

| <b>Settlement</b>       | <b>Part of the settlement within Flood Zone A or B?</b> | <b>Comment</b>   |
|-------------------------|---|--|
| <b>Main Settlements</b> |   |  |
| Mallow                  | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Charleville             | Yes   |  |
| Kanturk                 | Yes   |  |
| Buttevant               | Yes   |  |
| Newmarket               | Yes   |  |
| <b>Key Villages</b>     |   |  |
| Ballydesmond            | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Banteer                 | Yes   |  |
| Boherbue                | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Churchtown              | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Dromahane               | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Dromina                 | No  |  |
| Grenagh                 | No  |  |
| Knocknagree             | No  |  |
| Milford                 | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |

|                 |     |  |
|-----------------|-----|--|
| Newtownshandrum | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| <b>Villages</b> |     |  |
| Ballyclough     | Yes | See table below for details of specific flood risk to zoning objective areas.<br>For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                  |
| Ballyhea        | Yes |  |
| Bweeng          | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Castlemagner    | No  |  |
| Cecilstown      | No  |  |
| Cullen          | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Freemount       | Yes | See table below for details of specific flood risk to zoning objective areas.<br>For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                  |
| Glantane        | Yes |  |
| Kilbrin         | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Kiskeam         | Yes | See table below for details of specific flood risk to zoning objective areas.<br>For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                  |
| Liscarroll      | Yes |  |
| Lismire         | No  |  |

|                        |     |  |
|------------------------|-----|--|
| Lombardstown           | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Lyre                   | No  |  |
| New Twopothouse        | Yes | See table below for details of specific flood risk to zoning objective areas.<br>For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                  |
| Rathcoole              | Yes |  |
| Rockchapel             | Yes |  |
| Tullylease             | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| <b>Other Locations</b> |     |  |
| Dromalour              | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |



4.3.1 The Table below lists the specific zoned sites within the Kanturk Mallow Municipal District that are located within either Flood Zone A or B and the circumstances of their inclusion.

| Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|--|------------------|------------|---|---|
| Settlement   | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
| Mallow   | MW-B-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Mallow   | MW-B-03          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Mallow   | MW-GA-11         | A          | Appropriate, retain water compatible uses   | 3.2.2.5 – Amend the specific objective text to add a ‘*’ symbol which references flood and risk and the need to refer to objectives in Volume One, Chapter 11 Water Management  |
| Mallow   | MW-GB 1          | A/B/C      | Appropriate, retain water compatible uses   |   |
| Mallow   | MW-GC-01         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Mallow   | MW-GC-10         | A/B/C      | Appropriate, retain water compatible uses   | 3.2.2.5 – Amend the specific objective text to add a ‘*’ symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management  |
| Mallow   | MW-GC-13         | A/B/C      | Appropriate, retain water compatible uses   | 3.2.2.5 – Amend the specific objective text to add a ‘*’ symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management.<br><br>3.2.3.16 - It is proposed to change part of the Existing Residential/Mixed Residential |

**Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective | Flood Zone | Comment  | Proposed Draft Amendment  |
|------------|------------------|------------|--|---|
|            |                  |            |  | and Other Uses zoning and include within the MW-GC-13 Green Infrastructure zoning.  |
| Mallow     | MW-GC-14         | A/B/C      | Appropriate, retain water compatible uses  | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management  |
| Mallow     | MW-GC-16         | A/B/C      | Appropriate, retain water compatible uses  | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management  |
| Mallow     | MW-GR-04         | A/B/C      | Appropriate, retain water compatible uses  |   |
| Mallow     | MW-GC-02         | A/B/C      | Appropriate, retain water compatible uses  | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management  |
| Mallow     | MW-I-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. Note, partially unmapped stream will need detailed FRA as part of Development Management to map risk but avoidance still possible. | 3.2.3.14 - It is proposed to remove part of the MW-I-02 zoning and replace with Greenbelt.<br><br><b>Final Comment:</b> Sequential approach to be applied and development to be avoided in Flood Zones A and B. Note, partially unmapped stream will need detailed FRA as part of Development Management to |

| Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|--|------------------|------------|---|---|
| Settlement   | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
|  |                  |            |   | map risk but avoidance still possible.  |
| Mallow   | MW-I-05          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Mallow   | MW-RR-01         | A/B/C      | Consider water compatible zoning for extent of zoning at risk of flooding.              | 3.2.2.4 – Remove *<br><br>3.2.3.11 – It is proposed to increase the extent of the MW-GC-01 zoning. This will result in a consequential reduction to the MW-RR-01, MW-R-03, MW-R-04, Existing Residential/Mixed Residential and Other Uses (ER) zoning, MW-AG-01 zoning, Greenbelt zoning and necessitate a small increase in the development boundary<br><br><b>Final Comment:</b> The amended boundary of MW-RR-01 is not at risk of flooding. |
| Mallow   | MW-T-01          | A/B/C      | Justification Test required. See the following section of this SFRA                     |   |
| Mallow   | MW-T-02          | B/C        | Justification Test required. See the following section of this SFRA                     | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management  |
| Mallow   | MW-T-03          | B/C        | Justification Test required. See the following section of this SFRA                     | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in  |

**Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective   | Flood Zone | Comment   | Proposed Draft Amendment   |
|------------|--|------------|---|--|
|            |  |            |   | Volume One, Chapter 11 Water Management  |
| Mallow     | MW-T-04  | A/B/C      | Consider water compatible zoning.   | 3.2.3.5 - It is proposed to delete the MW-T-04 zoning objective and replace with a new zoning objective MW-U-02<br><br><b>Final Comment:</b> Appropriate, retain water compatible uses.                  |
| Mallow     | MW-T-05  | A/B/C      | Consider water compatible zoning.   | 3.2.3.6 - It is proposed to delete the MW-T-04 zoning objective and replace with a new zoning objective MW-U-03<br><br><b>Final Comment:</b> Appropriate, retain water compatible uses.                  |
| Mallow     | MW-T-06  | B/C        | Justification Test required. See the following section of this SFRA                     |  |
| Mallow     | MW-X-01  | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Mallow     | Existing Mixed / General Business / Industrial - south of MW-GC-14 and north of MW-GC-13 | A          | Justification Test required. See the following section of this SFRA.                    | 3.2.3.23 - It is proposed to change part of the Existing Residential/Mixed Residential and Other Uses zoning to Existing Mixed / General Business / Industrial Uses.<br><br>See paragraph 4.9.1 – 4.9.4. |
| Mallow     | Existing Mixed / General Business / Industrial - south of MW-GC-13                       | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Mallow     | Existing Residential/Mixed   | A          | Consider water compatible zoning.   | 3.2.3.17 - It is proposed to change part of the Existing Residential / Mixed Residential   |

| Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B |  |            |   |  |
|--|--|------------|---|--|
| Settlement   | Zoning Objective   | Flood Zone | Comment   | Proposed Draft Amendment   |
|  | Residential and Other Uses zoning - south of MW-GR-04  |            |   | and Other Uses zoning and replace zone with extension to MW-GR-04.<br><br>Final Comment: Amended Existing Residential / Mixed Residential and Other Use Zoning – south of MW-GR-04 - Sequential approach to be applied and development to be avoided in Flood Zones A and B. |
| Mallow   | Existing Residential/Mixed Residential and Other Uses west of MW-T-06 and including Regeneration site MW-RA-05 | B          | Justification Test required. See the following section of this SFRA                     |  |
| Charleville  | CV-B-01  | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management   |
| Charleville  | CV-B-05  | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 3.2.4.18 - It is proposed to extend the CV-B-05 zoning to the north and include additional text.   |
| Charleville  | CV-GB1   | A/B/C      | Appropriate, retain water compatible uses   |  |
| Charleville  | CV-GB2   | A/B/C      | Appropriate, retain water compatible uses   |  |
| Charleville  | CV-GR-03   | A/B/C      | Appropriate, retain water compatible uses   |  |
| Charleville  | CV-T-01  | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |

**Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement  | Zoning Objective           | Flood Zone | Comment   | Proposed Draft Amendment   |
|-------------|----------------------------|------------|---|--|
| Charleville | CV-U-02                    | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Charleville | CV-U-03                    | A/B/C      | Appropriate, retain water compatible uses   | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Charleville | EBUA - see Charleville tab | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Kanturk     | KK-B-03                    | B/C        | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Kanturk     | KK-GB1                     | A/B/C      | Appropriate, retain water compatible uses   |  |
| Kanturk     | KK-GB2                     | A/B/C      | Appropriate, retain water compatible uses   |  |
| Kanturk     | KK-GC-01                   | A/B/C      | Appropriate, retain water compatible uses   | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Kanturk     | KK-GR-02                   | A/B/C      | Appropriate, retain water compatible uses   |  |
| Kanturk     | KK-GR-03                   | A/B/C      | Appropriate, retain water compatible uses   |  |
| Kanturk     | KK-GC-04                   | A/B/C      | Appropriate, retain water compatible uses   |  |
| Kanturk     | KK-GR-07                   | A/B/C      | Appropriate, retain water compatible uses   | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |

| Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B |   |            |  |  |
|--|---|------------|--|--|
| Settlement   | Zoning Objective  | Flood Zone | Comment  | Proposed Draft Amendment   |
| Kanturk  | KK-T-01   | A/B/C      | Justification Test required. See the following section of this SFRA  |  |
| Kanturk  | KK-T-02   | A/B/C      | Justification Test required. See the following section of this SFRA  |  |
| Kanturk  | KK-U-03   | A          | The river crossing is water compatible but would need a flood risk assessment and Section 50 consent from the OPW. | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Kanturk  | KK-U-04   | A          | Appropriate, retain water compatible uses  | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Kanturk  | Existing Residential/Mixed Residential and Other Uses zoning - south of KK-R-03 | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B.                            |  |
| Kanturk  | Existing Residential/Mixed Residential and Other Uses zoning                    | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B.                            |  |
| Kanturk  | Existing Mixed / General Business / Industrial - North of GC-01                 | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B.                            |  |
| Buttevant  | BV-GB1  | A/B/C      | Appropriate, retain water compatible uses  |  |
| Buttevant  | BG-GC-04  | A/B/C      | Appropriate, retain water compatible uses  | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in   |

**Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective | Flood Zone | Comment                                   | Proposed Draft Amendment   |
|------------|------------------|------------|---|--|
|            |                  |            |   | Volume One, Chapter 11 Water Management  |
| Buttevant  | BV-GC-05         | A/B/C      | Appropriate, retain water compatible uses | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Buttevant  | BV-GR-03         | A/B/C      | Appropriate, retain water compatible uses | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Newmarket  | NK-GB1           | A/B/C      | Appropriate, retain water compatible uses |  |
| Newmarket  | NK-GB2           | A/B/C      | Appropriate, retain water compatible uses | 3.2.7.6 - It is proposed to reduce zoning objective GB1-2 in the Draft Plan for Newmarket as follows (deleted area to be replaced by general greenbelt zoning)             |
| Newmarket  | NK-GC-02         | A/B/C      | Appropriate, retain water compatible uses | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Newmarket  | NK-GC-04         | A/B/C      | Appropriate, retain water compatible uses | 3.2.2.5 – Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |



| Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B |   |            |   |   |
|--|---|------------|---|---|
| Settlement   | Zoning Objective  | Flood Zone | Comment   | Proposed Draft Amendment  |
| Newmarket  | Existing Mixed / General Business / Industrial - south of B-01 and north of GC-04                     | A          | Justification Test required. See the following section of this SFRA                     |   |
| Newmarket  | Existing Residential/Mixed Residential and Other Uses zoning - south of NK-GC-04 and east of NK-GC-02 | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ballydesmond   | GA-01   | A/B/C      | Appropriate, retain water compatible uses   |   |
| Banteer  | Existing Residential/Mixed Residential and Other Uses zoning - to the south eastern corner            | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 3.2.9.1 – It is proposed to reduce the development boundary of Banteer.   |
| Churchtown   | GR-01   | A/B/C      | Appropriate, retain water compatible uses   |   |
| Churchtown   | GC-02   | A/B/C      | Appropriate, retain water compatible uses   | 3.2.2.6 - Amend the specific objective text to add a “*” symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management    |
| Kiskeam  | GR-01   | A/B/C      | Appropriate, retain water compatible uses   | 3.2.27.1 - It is proposed to amend text on zoning map for Kiskeam page 237 to correspond with text on page 236 as follows: Remove GR-01 and replace with: <b><u>GC-01</u></b> |

**Table 10: Kanturk Mallow Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement   | Zoning Objective | Flood Zone | Comment                                   | Proposed Draft Amendment   |
|--------------|------------------|------------|---|--|
|              |                  |            |   | <b>3.2.2.6</b> - Amend the specific objective text to add a ‘**’ symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management |
| Liscarroll   | GC-01            | A/B/C      | Appropriate, retain water compatible uses |  |
| Lombardstown | GC-02            | A          | Appropriate, retain water compatible uses | 3.2.2.5 – Amend the specific objective text to add a ‘**’ symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management        |
| Rathcoole    | GA-02            | A/B/C      | Appropriate, retain water compatible uses |  |
| Rockchapel   | GC-01            | A/B/C      | Appropriate, retain water compatible uses |  |
| Rockchapel   | GC-02            | A/B/C      | Appropriate, retain water compatible uses | 3.2.2.5 – Amend the specific objective text to add a ‘**’ symbol which references flood risk and the need to refer to objectives in Volume One, Chapter 11 Water Management        |

### Justification Tests for Kanturk Municipal District

4.3.2 The table below details the Justification Tests for the areas identified above as being within Flood Zone A and B, and where the sequential approach and avoidance cannot be achieved.

| <b>Table 11: Mallow Justification Tests Part 1</b>  |   |  |  |
|---|---|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Mallow MW-T-01</b>   | <b>Mallow MW-T-02</b>  | <b>Mallow MW-T-03</b>  |
| <b>The urban settlement is targeted for growth</b>  | Mallow is a large key town of regional significance. It is an important economic driver for the region as an employment centre, also offering quality of life. Mallow is identified for strong growth.  | Mallow is a large key town of regional significance. It is an important economic driver for the region as an employment centre, also offering quality of life. Mallow is identified for strong growth. | Mallow is a large key town of regional significance. It is an important economic driver for the region as an employment centre, also offering quality of life. Mallow is identified for strong growth.                     |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is necessary to manage growth in the existing town centre i.e. the primary location for retail and mixed uses in Mallow. The zoning will provide for employment opportunities for residents of the settlement and the wider region. | The zoning is required to cater for the logical sequential expansion of the town centre. Development to comprise a balanced and appropriate mix of town centre uses including offices.                 | This is a landmark site located directly adjacent to the main core, which offers a unique expansion of the town centre to facilitate complimentary uses such as offices, convenience retailing, living over the shop etc.. |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as a primary location for retail and other mixed uses that   | MW-T-02 is essential to the expansion of the town centre. It is closest to the existing retail core and is suitable for mixed town centre uses including office uses.                                  | MW-T-03 is essential to the expansion of the town centre to provide a unique landmark site to provide for new employment or business uses.   |

|   |  |  |  |
|---|--|--|--|
|   | provide goods and services to the public.  |  |  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are opportunities to consolidate and redevelop sites within MW-T-01.   | There are opportunities to consolidate and redevelop sites in MW-T-02.   | It is predominately a brownfield site with buildings suitable for refurbishment.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre and is identified in the zoning objective as the preferred location for new retail development in Mallow.   | Site is located adjacent to the town centre.   | Site is located in proximity to the town centre.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.  | Redevelopment provides an opportunity to consolidate and regenerate the town centre and sequentially represents the best opportunity for development.  | Redevelopment provides an opportunity to consolidate and regenerate the town centre and sequentially represents a good opportunity for development.  |
| <b>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.</b> | There is an established town centre on the site including a main street and retail core. There are no alternative sites that will enable the regeneration and continuation of the town centre. | This site is located adjacent to the town centre and there are no alternative sites at lower flood risk that would allow for the sequential expansion of the town centre.  | This site is located adjacent to the town centre and there are no alternative sites at lower flood risk that would allow for the sequential expansion of the town centre.  |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The area benefits from the OPW flood relief scheme. New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of residual risks and        | The area benefits from the OPW flood relief scheme. New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of residual risks and proposes appropriate mitigation. | The area benefits from the OPW flood relief scheme. New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of residual risks and proposes appropriate mitigation. |

|                                  |  |   |   |
|----------------------------------|--|---|---|
|                                  | proposes appropriate mitigation. Highly vulnerable development should not be located at ground flood level in these areas. | Highly vulnerable development should not be located at ground flood level in these areas. | Highly vulnerable development should not be located at ground flood level in these areas. |
| <b>Result</b>                    | Pass   | Pass  | Pass  |
| <b>Recommendation for zoning</b> | Retain zoning objective  | Retain zoning objective   | Retain zoning objective   |

| <b>Table 12: Mallow Justification Tests Part 2</b>  |   |   |   |
|---|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Mallow MW-T-06</b>   | <b>Mallow Existing Residential/Mixed Residential and Other Uses west of MW-T-06 and including Regeneration site MW-RA-05 (See Appendix A for indicative map)</b>  | <b>Mallow Existing Residential /Mixed Residential and Other Uses lands known as Lacknahoola, south of existing garage and services (See Appendix A for indicative map)</b>                            |
| <b>The urban settlement is targeted for growth</b>  | Mallow is a large key town of regional significance. It is an important economic driver for the region as an employment centre, also offering quality of life. Mallow is identified for strong growth                         | Mallow is a large key town of regional significance. It is an important economic driver for the region as an employment centre, also offering quality of life. Mallow is identified for strong growth                 | Mallow is a large key town of regional significance. It is an important economic driver for the region as an employment centre, also offering quality of life. Mallow is identified for strong growth |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | To cater for the sequential expansion of the town centre. Development to comprise a balanced and appropriate mix of town centre uses and to provide for adequate connectivity and permeability with other town centres zones. | This is an existing built up, predominately residential area.   | This is a former commercial site.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | MW-T-06 is essential to the expansion of the town to the south at Ballydaheen, identified as a specific regeneration site MW-RA-03. This brownfield site is located at a key entry point to the town from the south.          | The site is identified as MW-RA-05 opportunity site for townhouse development. The zoning is required to consolidate the existing built up area and develop an underutilised site and rejuvenate a derelict building. | Lands are brownfield with under-utilised greenfield backlands that are in need of regeneration.   |

|   |  |  |  |
|---|--|--|--|
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | It is a brownfield site  | The site contains underutilised backlands.   | The site is brownfield with some underutilised backlands.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | Site is located in proximity to the town centre.   | Site is located in proximity to the town centre.   | The site is located within an existing built up area.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | Development provides an opportunity to consolidate and regenerate the town centre and sequentially represents a good opportunity for development and regeneration.   | The site is located within an existing built up area.  | The site is located within an existing built up area.  |
| <b>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.</b> | There are no alternative sites on the southside located close to the town centre that would allow for the sequential expansion of the town centre.   | There are no other available infill sites of this size for residential use that are at lower risk of flooding near the core.   | The site is within an existing built up area with a former commercial use.   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The area benefits from the OPW flood relief scheme but is within Flood Zone B. New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of the residual risks and proposes appropriate mitigation. Highly | This site is within Flood Zone a (defended) B and C. It benefits from the Mallow South Flood Relief Scheme, which mitigates risk associated with the 1% AEP flood extent, and also means the impact of the 0.1% AEP event is less than in the undefended scenario. Any development proposal for the site needs to be | The site is within Flood Zone A and B and under the CFRAM flood mapping shows depths of up to 1m in the 1% AEP scenario. Development here has the potential to increase flood risk up and downstream through displacement of water and the site is too constrained to allow for the provision of compensatory storage. |

|                                  |  |  |                                |
|----------------------------------|--|--|--------------------------------|
|                                  | vulnerable development should not be located at ground flood level in these areas. | supported by a site specific FRA, which addresses the risk of defence failure or overtopping. Proposals for mixed use development should follow the sequential approach, with water compatible and less vulnerable uses at ground floor. Highly vulnerable uses are permitted at higher levels, subject to emergency response plan (considering emergency access) in the event of defence failure. |                                |
| <b>Result</b>                    | Pass   | Pass   | Fail                           |
| <b>Recommendation for zoning</b> | Retain zoning objective  | Retain zoning objective  | Zone to a water compatible use |



| <b>Table 13: Kanturk Justification Tests</b>  |  |   |
|---|--|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Kanturk KK-T-01</b>   | <b>Kanturk KK-T-02</b>  |
| <b>The urban settlement is targeted for growth</b>  | Kanturk is a small market town with a large agricultural hinterland in the Fermoy Municipal District. It is an important local centre and is identified for small scale growth.  | Kanturk is a small market town with a large agricultural hinterland in the Fermoy Municipal District. It is an important local centre and is identified for small scale growth.         |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary location for retail and mixed uses in Kanturk. The zoning will provide for employment opportunities for residents of the settlement and wider hinterland.   | The zoning is required to cater for the logical sequential expansion of the town centre.  |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as a primary location for retail and other mixed uses that provide goods and services to the public. It contains an identified regeneration site at the old library on Main Street KK-RA-02.                        | The site contains an identified regeneration site KK-RA-01 being the Mart Site and Adjoining Lands. The site is essential to facilitate regeneration of the town centre.                |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are many opportunities for redevelopment within the zone including the identified regeneration site at the old library on Main Street KK-RA-02. The zoning objective encourages sensitive refurbishment/ redevelopment of existing sites and promotes public realm improvements. | The mart site includes underutilised lands and is identified as a key regeneration site in the town centre. The zoning is also required to facilitate the expansion of the town centre. |
| <b>Is within or adjoining the core of an established or designated urban</b>  | The site is within the existing town centre and is the primary area for retail and mixed use development in Kanturk.   | The site is located within the town centre.   |

|   |   |  |
|---|---|--|
| <b>settlement</b>   |   |  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth as the primary retail core.  | The zoning provides for a range of town centre type uses including primary health care centre and residential at this core location.   |
| <b>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.</b> | There is an established town centre on the site. There are no alternative sites of lesser flood risk within or adjoining the core that will enable the regeneration and continuation of the town centre.  | This site is an underutilised infill site located within the existing town centre and there are no alternative sites at lower flood risk that would allow for the sequential expansion of the town centre.   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The need for flood relief works in Kanturk was identified by the CFRAM programme, and are to be progressed in the future and will be funded under the Office of Public Works' flood relief capital works programme. Until such as time as the scheme is completed, new development in Flood Zones A and B is considered premature and development should be limited to Section 5.28 of the Planning Guidelines. | The need for flood relief works in Kanturk was identified by the CFRAM programme, and are to be progressed in the future and will be funded under the Office of Public Works' flood relief capital works programme. Until such as time as the scheme is completed, new development in Flood Zones A and B is considered premature and development should be limited to Section 5.28 of the Planning Guidelines |
| <b>Result</b>   | Development is premature  | Development is premature   |
| <b>Recommendation for zoning</b>  | Retain zoning objective to reflect current uses   | Retain zoning objective to reflect current uses  |

| <b>Table 14: Newmarket Justification Tests</b>  |   |
|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Newmarket<br/>Existing Residential/Mixed Residential and Other Uses zoning<br/>- south of NK-GC-04 (See Appendix A for indicative map)</b>   |
| <b>The urban settlement is targeted for growth</b>  | Newmarket is a small market town and an important local centre for North West Cork identified for small scale growth.   |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | This site is used as Newmarket Co-operative Creamery, located in the existing built up area.  |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is required to consolidate the existing site and provide an opportunity for expansion to reverse the trend of stagnating and population decline in the town.   |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | The lands contain underutilised lands within Newmarket Co-operative Creamery.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | Site is located adjacent to the core of Newmarket.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is essential to achieving compact growth, consolidate the existing site and provide an opportunity for expansion to offer employment and reverse the trend of stagnating and population decline in the town.                             |
| <b>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.</b>     | The site has an established use on the site as Newmarket Co-operative Creamery. 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 Newmarket. |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The Flood Zone maps indicate a substantial area of ponding within the site. Proposals for new development should include a detailed flood risk assessment and will allow the sequential approach to be applied within the site.                   |
| <b>Result</b>   | Pass  |
| <b>Recommendation for zoning</b>  | Retain zoning objective.  |

## 4.4 Carrigaline Municipal District

- 4.4.1 The Carrigaline Municipal District lies entirely within the County Metropolitan Strategic Planning area as defined in the Draft County Development Plan. It is a predominantly rural Municipal District that accommodates an extensive network of settlements as follows:
- 4.4.2 Two main towns: Carrigaline and Passage West/ Glenbrook/ Monkstown.
- 4.4.3 Two Key Villages: Ringaskiddy and Crosshaven and Bays.
- 4.4.4 Five Villages: Ballinhassig, Ballygarvan, Halfway, Minane Bridge and Waterfall.

### Sources of Flooding

- 4.4.5 Rivers are the primary cause of flooding in the Carrigaline Municipal District with flood events attributed to fluvial sources ranging from the River Lee in particular to smaller tributaries and drains.
- 4.4.6 There is a history of frequent floods within the Lee Catchment, represented on [Floodinfo.ie](http://Floodinfo.ie), which cause damage to public roads, properties and farmland and result from both fluvial and tidal mechanisms.
- 4.4.7 In the Municipal District, the areas of Carrigaline, Passage West/ Glenbrook/ Monkstown, Ringaskiddy, Crosshaven and Bays, Minane Bridge, are or may be susceptible to tidal flooding and coastal erosion due to their coastal locations.
- 4.4.8 Periodic flooding has occurred in low lying areas of Carrigaline in the past from the Owenboy River, which is tidal Coastal flooding, which is caused by higher sea level than normal, largely as a result of storm surge, resulting in the sea overflowing onto the land.
- 4.4.9 Coastal flooding and erosion amplified by Climate Change is a risk that merits further study affecting Passage West.

### Rivers in the Carrigaline Municipal District Area

- 4.4.10 The Lee River catchment covers an area of approximately 2,000 square kilometres. The catchment is defined by the land area drained by the River Lee, its tributaries, and Cork Harbour.
- 4.4.11 The Lee River can be broken down into nine sub catchments as follows: Upper River Lee; Lower River Lee; Tramore/Douglas River; Kiln River; Glashaboy River; Owenacurra River; Carrigtwohill area; Owenboy River; and Cork Harbour. The majority of the Carrigaline Municipal District is covered by the sub catchments of the Lower Lee and the Owenboy. Curraheen and Tramore River catchments. The Lower Lee system runs between Inniscarra dam and the City boundary before entering Lough Mahon.
- 4.4.12 The Owenboy River is within the sub-catchment of the River Lee. It rises just north of Crossbarry and flows east through Halfway, Ballinhassig, Ballygarvan into Carrigaline and onto Crosshaven where it enters Cork Harbour.

### **Addressing Flood Risk in the Carrigaline MD**

- 4.4.13 This section details the approach to Flood Risk Management adopted in the Carrigaline MD.
- 4.4.14 As part of the review of the Draft Development Plan, all zoned lands in areas at risk of flooding have been considered in the context of the flood zone maps.
- 4.4.15 The inclusion of the flood zone information on the settlement maps of the Municipal District is the first step in managing flood risk in the future. The mapping provides for an improved understanding of flood risk issues within the County. The maps indicate the extent of flood zones that should be safeguarded from development and will support the application of the sequential approach, and the justification test as appropriate, in areas where development is proposed.
- 4.4.16 Flood risk to each settlement has been appraised based on the Flood Zones which cross the settlement boundary and is summarised in table 15 below.

| <b>Table 15: Flood Risk by Settlement in the Carrigaline Municipal District</b> |   |  |
|---|---|--|
| <b>Settlement</b>   | <b>Part of the settlement within Flood Zone A or B?</b> | <b>Comment</b>   |
| <b>Main Settlements</b>   |   |  |
| Carrigaline   | Yes   | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Passage West  | Yes   |  |
| <b>Key Villages</b>   |   |  |
| Ringaskiddy   | Yes   | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Crosshaven and Bays   | Yes   |  |
| <b>Villages</b>   |   |  |
| Ballinhassig  | Yes   | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Ballygarvan   | Yes   |  |
| Halfway   | Yes   | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed  |
| Minane Bridge   | Yes   | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial   |

|           |     |   |
|-----------|-----|---|
|           |     | flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed  |
| Waterfall | Yes | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed |

4.4.1 Table 16 below lists the specific zoned sites within the Carrigaline Municipal District that are located within either Flood Zone A or B and the circumstances of their inclusion.

| <b>Table 16: Carrigaline Municipal District - Specific Land Use Zonings within Flood Zone A or B</b> |  |                   |   |   |
|--|--|-------------------|---|---|
| <b>Settlement</b>  | <b>Zoning Objective</b>  | <b>Flood Zone</b> | <b>Comment</b>  | <b>Proposed Draft Amendment</b>                                     |
| Carrigaline  | CL-T-01  | A/B/C             | Justification Test required. See the following section of this SFRA                     |   |
| Carrigaline  | CL-T-02  | A/B/C             | Justification Test required. See the following section of this SFRA                     |   |
| Carrigaline  | Existing Mixed / General Business / Industrial - 2 areas between GA-07 and GR-03 Either side of B-01 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigaline  | CL-R-04  | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigaline  | CL-B-01  | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigaline  | CL-R-08  | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigaline  | CL-R-15  | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigaline  | CL-GR-03   | A/B/C             | Appropriate, retain water compatible uses.  |   |
| Carrigaline  | CL-GR-01   | A/B/C             | Appropriate, retain water compatible uses.  |   |
| Carrigaline  | CL-GR-02   | A/B/C             | Appropriate, retain water compatible uses.  |   |
| Carrigaline  | CL-GA-04   | A/B/C             | Appropriate, retain water compatible uses.  |   |
| Carrigaline  | CL-GR-06   | A/B/C             | Appropriate, retain water compatible uses.  |   |
| Carrigaline  | CL-GC-11   | A/B/C             | Appropriate, retain water compatible uses.  |   |
| Carrigaline  | CL-GR-12   | A/B/C             | Appropriate, retain water compatible uses.  |   |
| Passage West   | PW-GC-05   | A/B/C             | Appropriate, retain water compatible uses   | 4.1.4.6 - Add * to PW-GC-05 in Passage West / Glenbrook / Monkstown |



| Table 16: Carrigaline Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|---|------------------|------------|---|--|
| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment   |
| Passage West  | PW-X-04          | A          | Justification Test required. See the following section of this SFRA                     |  |
| Passage West  | PW-X-01          | A/B/C      | Justification Test required. See the following section of this SFRA                     |  |
| Passage West  | PW-T-01          | A/B/C      | Justification Test required. See the following section of this SFRA                     |  |
| Passage West  | PW-T-02          | A/B/C      | Justification Test required. See the following section of this SFRA                     |  |
| Passage West  | PW-X-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.1.4.7 - Add * to PW-X-02 in Passage West / Glenbrook / Monkstown |
| Passage West  | PW-X-03          | A/B/C      | Justification Test required. See the following section of this SFRA                     |  |
| Crosshaven and Bays   | CS-X-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.1.6.2 Add * in CS-X-02   |
| Crosshaven and Bays   | CS-T-01          | A/B/C      | Justification Test required. See the following section of this SFRA.                    |  |
| Crosshaven and Bays   | CS-T-02          | A/B/C      | Justification Test required. See the following section of this SFRA                     |  |
| Crosshaven and Bays   | CS-I-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.1.6.10 - Add * in CS-I-02  |
| Crosshaven and Bays   | CS-I-01          | A/B/C      | Area is only suitable for water compatible (marine related) uses.                       |  |
| Crosshaven and Bays   | CS-GC-10         | A/B/C      | Appropriate, retain water compatible uses   | 4.1.6.5 - Add * to CS-GC-10 in Crosshaven and Bays                 |
| Crosshaven and Bays   | CS-GC-09         | A/B/C      | Appropriate, retain water compatible uses   | 4.1.6.4 - Add * to CS-GC-09 in Crosshaven and Bays                 |
| Ringaskiddy   | RY-GA-01         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Ringaskiddy   | RY-GA-02         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Ringaskiddy   | RY-GC-11         | A/B/C      | Appropriate, retain water compatible uses   | 4.1.5.12- Add * to RY-GC-11 in Ringaskiddy                         |
| Ringaskiddy   | RY-GC-12         | A/B/C      | Appropriate, retain water compatible uses   | 4.1.5.13 - Add * to RY-GC-12 in Ringaskiddy                        |

**Table 16: Carrigaline Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
|-------------|------------------|------------|---|---|
| Ringaskiddy | RY-GC-13         | A/B/C      | Appropriate, retain water compatible uses   | 4.1.5.14 - Add * to RY-GC-13 in Ringaskiddy   |
| Ringaskiddy | RY-I-09          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ringaskiddy | RY-I-08          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ringaskiddy | RY-I-10          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ringaskiddy | RY-I-11          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ringaskiddy | RY-I-13          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ringaskiddy | RY-I-18          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ringaskiddy | RY-I-19          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ringaskiddy | RY-I-16          | A          | Consider water compatible zoning.   | 4.1.5.23 - Amend zoning RY-I-16 to be zoned as RY-GC-15. Remove objective RY-I-16 and include new zoning objective RY-GC-15.<br><br><b>Final comment:</b> Amended zoning boundary for Objective RY-I-16 is no longer at risk.             |
| Ringaskiddy |                  | A          |   | 4.1.5.23 - Amend zoning RY-I-16 to be zoned as RY-GC-15. Remove objective RY-I-16 and include new zoning objective RY-GC-15.<br><br><b>Final comment:</b> Proposed zoning objective RY-GC-15 – appropriate, retain water compatible uses. |

| Table 16: Carrigaline Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|---|------------------|------------|---|---|
| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
| Ringaskiddy   |                  | A/B/C      |   | <p>4.1.5.31 - Include new zoning of site as Green Infrastructure RY-GC-14 in Ringaskiddy and include text in Table 4.1.16.</p> <p>4.1.5.31 – Update proposed amendment 4.1.5.2 which introduced a new zoning objective.</p> <p><b>Final Comment:</b> Proposed RY-GC-14 zoning objective - Appropriate, retain water compatible uses</p> |
| Ballinhassig  | T-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.1.7.3 - T-01 add * in Ballinhassig  |
| Ballygarvan   | X-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ballygarvan   | GR-01            | A/B/C      | Appropriate, retain water compatible uses   | 4.1.8.2 - GR-01 add a * in Ballygarvan  |
| Minane Bridge   | GC-01            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Minane Bridge   | GC-02            | A/B/C      | Appropriate, retain water compatible uses   | 4.1.10.4 - Add * to GC-02 in Minane Bridge  |

## Justification Tests for Carrigaline Municipal District

4.4.2 The table below details the Justification Tests for the areas identified above as being within Flood Zone A and B, and where the sequential approach and avoidance cannot be achieved.

| <b>Table 17: Carrigaline Justification Tests</b>  |  |  |
|---|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Carrigaline CL-T-01</b>   | <b>Carrigaline CL-T-02</b>   |
| <b>The urban settlement is targeted for growth</b>  | Carrigaline is a Metropolitan Main Town with an important role in serving the needs of the community and respective catchment areas. It is an important residential alternative to Cork City and its Environs and is identified for moderate scale growth with an emphasis on convenience and appropriate comparison shopping. | Carrigaline is a Metropolitan Main Town with an important role in serving the needs of the community and respective catchment areas. It is an important residential alternative to Cork City and its Environs and is identified for moderate scale growth with an emphasis on convenience and appropriate comparison shopping. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary location for retail and mixed uses. The zoning will provide for improved public realm and community uses including a market space, festival space, meeting place, theatre, seating area etc.  | To cater for the sequential expansion of the town centre. The zoning will provide for redevelopment of the Old Pottery site for mixed uses including retail, theatre, commercial businesses, community facilities, offices, mixed residential, restaurant and café.  |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre and carry out public realm improvements to enhance the core as the primary location for retail and other mixed uses in Carrigaline.   | The site is essential to facilitate regeneration of the centre. It offers an opportunity to provide a strong urban edge as an extension of the main commercial/retail streetscape of the town.   |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are opportunities for redevelopment and there are underutilised lands within the site.   | The site has significant underutilised lands.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre and is identified in the zoning objective as the preferred location for new retail development in Carrigaline.  | Site is located adjacent to the town centre.   |
| <b>Will be essential in achieving compact and sustainable urban</b>   | The site is the existing town centre and will be key to achieving compact urban growth.  | Redevelopment provides an opportunity to consolidate and regenerate the town centre after rapid growth in recent years and sequentially  |

|   |   |   |
|---|---|---|
| <b>growth</b>   |   | represents the best opportunity for development   |
| <b>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.</b> | There is an established town centre on the site. There are no alternative sites that will enable the regeneration and continuation of the town centre.  | This site is located adjacent to the town centre and there are no alternative sites at lower flood risk that would allow for the sequential expansion of the town centre.   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The need for flood relief works in Carrigaline was identified by the CFRAM programme, and are to be progressed in the future and will be funded under the Office of Public Works' flood relief capital works programme. Until such as time as the scheme is completed, new development in Flood Zones A and B is considered premature and development should be limited to Section 5.28 of the Planning Guidelines. | The need for flood relief works in Carrigaline was identified by the CFRAM programme, and are to be progressed in the future and will be funded under the Office of Public Works' flood relief capital works programme. Until such as time as the scheme is completed, new development in Flood Zones A and B is considered premature and development should be limited to Section 5.28 of the Planning Guidelines. |
| <b>Result</b>   | Development is premature  | Development is premature  |
| <b>Recommendation for zoning</b>  | Retain zoning objective to reflect current uses   | Retain zoning objective to reflect current uses   |

| <b>Table 18: Passage West Justification Tests Part 1</b>  |   |   |   |
|---|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Passage West PW-T-01</b>   | <b>Passage West PW-T-02</b>   | <b>Passage West PW-X-01</b>   |
| <b>The urban settlement is targeted for growth</b>  | Passage West is a Main Town which is part of a series of three linked settlements of Passage West, Glenbrook and Monkstown. It is an important residential centre with excellent recreational facilities centred on its harbour location. It is identified for small scale growth with an emphasis on addressing vacancy in the town. | Passage West is a Main Town which is part of a series of three linked settlements of Passage West, Glenbrook and Monkstown. It is an important residential centre with excellent recreational facilities centred on its harbour location. It is identified for small scale growth with an emphasis on addressing vacancy in the town. | Passage West is a Main Town which is part of a series of three linked settlements of Passage West, Glenbrook and Monkstown. It is an important residential centre with excellent recreational facilities centred on its harbour location. It is identified for small scale growth with an emphasis on addressing vacancy in the town. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary location for retail and mixed uses in Passage West. The zoning will provide for town centre uses to serve residents of the settlement.   | The site is zoned town centre. It is the existing town centre i.e. the primary location for retail and mixed uses in Monkstown. The zoning will provide for town centre uses to serve residents of the settlement.  | The zoning is required to facilitate the sequential expansion of existing town centre and redevelop the dockyards as a key driver in the sustainable development of the settlement.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre in Passage West as a primary location for retail and other mixed uses and to address the high level of vacancy in the town.  | The site is essential to the provide for the regeneration of the town centre in Monkstown.  | The site is essential to facilitate regeneration and expansion of the town centre. The Victoria Dockyard site is identified for mixed convenience and comparison retail, office, leisure, marina, service, civic and residential uses to facilitate town centre expansion.  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are underutilised and vacant sites in the zone.   | There are underutilised lands in the zone.  | It is a brownfield site.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre of Passage West.   | The site is the town centre of Monkstown.   | Site is located adjacent to the town centre.  |
| <b>Will be essential in achieving compact and</b>   | The site is the existing town centre and will be key to achieving compact urban   | The site is the existing town centre and will be key to achieving compact urban   | Redevelopment provides an opportunity to achieve compact growth and   |

|   |  |  |  |
|---|--|--|--|
| <b>sustainable urban growth</b>   | growth.  | growth.  | sequentially represents a good opportunity for development adjacent to the town centre.  |
| <b>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.</b> | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the regeneration and continuation of the town centre.   | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the regeneration and continuation of the town centre.   | There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the coherent and sequential expansion of existing town centre.   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The town centre of Passage West is at risk of tidal flooding, and there is potential for significant increases in frequency and depth of flooding associated with climate change. It is recommended that a climate change adaptation plan be prepared for the settlement. Until such as time as that is in place development within Flood Zone A and B should be limited to minor development, in accordance with Section 5.28 of the Planning Guidelines. | The town centre of Passage West is at risk of tidal flooding, and there is potential for significant increases in frequency and depth of flooding associated with climate change. It is recommended that a climate change adaptation plan be prepared for the settlement. Until such as time as that is in place development within Flood Zone A and B should be limited to minor development, in accordance with Section 5.28 of the Planning Guidelines. | The town centre of Passage West is at risk of tidal flooding, and there is potential for significant increases in frequency and depth of flooding associated with climate change. It is recommended that a climate change adaptation plan be prepared for the settlement. Until such as time as that is in place development within Flood Zone A and B should be limited to minor development, in accordance with Section 5.28 of the Planning Guidelines. |
| <b>Result</b>   | Pass   | Pass   | Pass   |
| <b>Recommendation for zoning</b>  | Retain zoning objective  | Retain zoning objective  | Retain zoning objective  |

| <b>Table 19: Passage West Justification Tests Part 2</b>  |   |   |
|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Passage West PW-X-03</b>   | <b>Passage West PW-X-04</b>   |
| <b>The urban settlement is targeted for growth</b>  | Passage West is a Main Town which is part of a series of three linked settlements of Passage West, Glenbrook and Monkstown. It is an important residential centre with excellent recreational facilities centred on its harbour location. It is identified for small scale growth with an emphasis on addressing vacancy in the town. | Passage West is a Main Town which is part of a series of three linked settlements of Passage West, Glenbrook and Monkstown. It is an important residential centre with excellent recreational facilities centred on its harbour location. It is identified for small scale growth with an emphasis on addressing vacancy in the town. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The zoning is required to recognise this site as a special opportunity site to achieve sustainable residential and mixed uses (including offices/employment uses) in the settlement.  | The zoning is required to facilitate pedestrian and cycle permeability to PW-T-01 and PW-T-02 areas and accommodate residential and mixed uses including offices in the settlement.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The site is essential to facilitate regeneration and consolidation of the former convent site. It also provides for the expansion of the town centre.   | The zoning is required to consolidate the existing built up area and provides an opportunity for residential development to enhance the streetscape of the area.  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | The site is a former convent site and contains significant underutilised lands.   | It is a brownfield site which fronts onto Bath Terrace/ R610.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | Site is located adjacent to the town centre.  | Site is a linear site located in proximity to the town centre.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | Development provides an opportunity to consolidate an existing underutilised site and expand the town centre which sequentially represents a good opportunity for development.  | The site is located within an existing built up area and is essential in consolidating the existing built footprint.  |



|  |  |   |
|--|--|---|
| <p><b>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.</b></p> | <p>There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the coherent and sequential expansion of existing town centre.</p>  | <p>There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the consolidation and regeneration of the existing built footprint.</p>  |
| <p><b>A flood risk assessment to an appropriate level of detail has been carried out</b></p>   | <p>The site is at risk of tidal flooding, and there is potential for significant increases in frequency and depth of flooding associated with climate change. It is recommended that a climate change adaptation plan be prepared for the settlement. Until such as time as that is in place development within Flood Zone A and B should be limited to minor development, in accordance with Section 5.28 of the Planning Guidelines.</p> | <p>The site shows limited encroachment from Flood Zone A and B, which is tidal in nature. It is also set back from the water's edge. To assist with the long term sustainability of the development the sequential approach should be applied within the site as far as possible, although it is noted that compensatory storage is not required should land be raised.</p> |
| <p><b>Result</b></p>   | <p>Pass</p>  | <p>Pass</p>   |
| <p><b>Recommendation for zoning</b></p>  | <p>Retain zoning objective</p>   | <p>Retain zoning objective</p>  |

| <b>Table 20: Crosshaven and Bays Justification Tests</b>  |  |  |
|---|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Crosshaven CS-T-01</b>  | <b>Crosshaven CS-T-02</b>  |
| <b>The urban settlement is targeted for growth</b>  | Crosshaven is a key village in the Carrigaline Municipal District with an important economic, leisure, tourism and marine role within Cork Harbour. It is identified for small scale growth including compact residential development in the village and niche retail/commercial uses in the centre as part of its coastal location and association with yachting and other marine activities. | Crosshaven is a key village in the Carrigaline Municipal District with an important economic, leisure, tourism and marine role within Cork Harbour. It is identified for small scale growth including compact residential development in the village and niche retail/commercial uses in the centre as part of its coastal location and association with yachting and other marine activities. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre to cater for the sequential expansion of the village centre. The zoning will provide for retail, small scale offices, community, residential and marine/tourism uses to facilitate the sustainable development of the settlement.  | It is the existing village centre i.e. the primary location for retail and mixed uses and the existing built footprint of Crosshaven. The zoning will provide for redevelopment and consolidation of the village core that reflects the scale and character of the surrounding existing built up area.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The site is essential to facilitate expansion of the village centre.   | The zoning is essential to maintain and regenerate the village centre as the primary location for retail and other mixed uses.   |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised lands within the site.   | There are opportunities for redevelopment and there are underutilised lands within the site.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | Site is located adjacent to the existing village centre.   | The site is located adjacent to the existing village centre.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | Development of underutilised lands will provide an opportunity to expand and regenerate the village and sequentially represents the best opportunity for development.  | The site is the existing village centre and will be key to achieving compact urban growth.   |
| <b>There are no suitable alternative lands for the particular use or development type, in areas</b>   | This site is located adjacent to the village centre and there are no alternative sites at lower flood risk that would allow for the sequential expansion of the village centre.  | There is an established village centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the regeneration and continuation of the village centre.   |

|  |   |   |
|--|---|---|
| <b>at lower risk of flooding within or adjoining the core of the urban settlement.</b> |   |   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>  | Risk to the site is tidal in nature so mitigation measures such as land raising and increased FFL can be accommodated without the need to provide compensatory storage. However, climate change impacts could be severe and long term sustainability of the developments would be better achieved by applying the sequential approach and setting development back from the water's edge. | Risk to the site is tidal in nature so mitigation measures such as land raising and increased FFL can be accommodated without the need to provide compensatory storage. However, climate change impacts could be severe and long term sustainability of the developments would be better achieved by applying the sequential approach and setting development back from the water's edge. |
| <b>Result</b>  | Pass  | Pass  |
| <b>Recommendation for zoning</b>   | Retain existing zoning  | Retain existing zoning  |

## 4.5 Cobh Municipal District

- 4.5.1 The Cobh Municipal District straddles two Strategic Planning Areas for which this plan sets out differing objectives. Much of the District, and all the main settlements, are within the Metropolitan Strategic Planning Area, while part of the more rural northern section of the district including Watergrasshill and Carrignavar key villages are within the Greater Cork Ring Strategic Planning Area. It is a predominantly rural Municipal District that accommodates an extensive network of settlements as follows:
- 4.5.2 Four main towns: Carrigtwohill, Cobh, Little Island and Monard (proposed settlement)
- 4.5.3 Three Key Villages: Carrignavar, Glounthaune, and Watergrasshill.
- 4.5.4 One Specialist Employment Centre: Marino Point.
- 4.5.5 Two Villages: Knockraha and Whitechurch.
- 4.5.6 Three Other Locations: Fota Island, Haulbowline Island and Spike Island.

### Sources of Flooding

- 4.5.7 Rivers are the primary cause of flooding; with flood events attributed to fluvial sources ranging from the Glashaboy and Butlerstown Rivers to smaller tributaries and drains.
- 4.5.8 In the Municipal District, Cobh, Glounthaune, Haulbowline Island and Spike Island are or may be susceptible to tidal flooding and coastal erosion due to their coastal locations.
- 4.5.9 Recent notable events include flooding in Carrigtwohill from the Glenamought River and Glen Stream. Periodic tidal flooding has also occurred in the area, with occasional flood events in Glounthaune and Cobh affecting a small number of properties. Further information about these flood events can be found on [www.Floodinfo.ie](http://www.Floodinfo.ie).

### Rivers in the Cobh Municipal District Area

- 4.5.10 The Cobh Municipal District is served by several large rivers, including tributaries of the River Lee and River Blackwater in the southern and northern extents of the District, respectively.
- 4.5.11 The Lower Lee system runs between Inniscarra Dam and the City boundary before entering Lough Mahon where extensive areas of mudflat define the shallows of the inner harbour between Dunkettle, Fota Island and Glounthaune.
- 4.5.12 The rivers north of the Lee follow a typical north-south drainage pattern and all ultimately drain into Cork Harbour with the exception of a number of rivers located in the northeast of the Municipal District.
- 4.5.13 The Cloghnashee River flows into Carrignavar from the northwest, connecting into the Glashaboy River and flowing east-west through the settlement and flowing further in a southeast direction into Glanmire. The

Glashaboy River has a significant catchment within the Municipal District with several tributaries, including the Butlerstown River in Glanmire, and terminates in the harbour where it meets the River Lee.

4.5.14 The Blarney River runs North-South within the western perimeter of the Monard Strategic Development Zone, and discharges to the Martin River, south-east of Blarney town. This also forms part of the extensive Lee Catchment. The area is also served by the Kilcronan Stream, a first order tributary of the Blarney River.

4.5.15 There are several streams serving the District also, feeding into the larger rivers and also the harbour. The other notable water body, aside from the harbour itself, is Slatty Waters/Pond to the south of Carrigtwohill and north of Fota Island.

#### **Addressing Flood Risk in the Cobh MD**

4.5.16 This section details the approach to Flood Risk Management adopted in the Cobh MD.

4.5.17 As part of the review of the Draft Development Plan, all zoned lands in areas at risk of flooding have been considered in the context of the flood zone maps.

4.5.18 The inclusion of the flood zone information on the settlement maps of the Municipal District is the first step in managing flood risk in the future. The mapping provides for an improved understanding of flood risk issues within the County. The maps indicate the extent of flood zones that should be safeguarded from development and will support the application of the sequential approach, and the justification test as appropriate, in areas where development is proposed.

4.5.19 Flood risk to each settlement has been appraised based on the Flood Zones which cross the settlement boundary and is summarised in table 21 below.

| <b>Table 21: Flood Risk by Settlement in the Cobh Municipal District</b> |   |  |
|--|---|--|
| <b>Settlement</b>  | <b>Part of the settlement within Flood Zone A or B?</b> | <b>Comment</b>   |
| <b>Main Settlements</b>  |   |  |
| Carrigtwohill  | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Cobh   | Yes   |  |
| Little Island  | Yes   |  |
| Monard   | Yes   |  |
| <b>Key Villages</b>  |   |  |
| Carrignavar  | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| Glounthaune  | Yes   |  |
| Watergrasshill   | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| <b>Specialist Employment Location</b>                                    |   |  |
| Marino Point   | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                     |
| <b>Villages</b>  |   |  |
| Knockraha  | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Whitechurch  | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| <b>Other Locations</b>   |   |  |

|                    |     |   |
|--------------------|-----|---|
| Fota Island        | Yes | See table below for details of specific flood risk to zoning objective areas.<br>For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk. |
| Haulbowline Island | Yes |   |
| Spike Island       | Yes |   |

4.5.20 Table below lists the specific zoned sites within the Cobh Municipal District that are located within either Flood Zone A or B and the circumstances of their inclusion.

| <b>Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B</b> |                         |                   |   |  |
|---|-------------------------|-------------------|---|--|
| <b>Settlement</b>   | <b>Zoning Objective</b> | <b>Flood Zone</b> | <b>Comment</b>  | <b>Proposed Draft Amendment</b>  |
| Carrigtwohill   | CT-B-04                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Carrigtwohill   | CT-B-06                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.3.27 - Amend the specific objective text of CT-B-06 to include a reference to flood risk and to a need to refer to objectives in Volume One, Chapter 11 Water Management.                                    |
| Carrigtwohill   | CT-C-01                 | A/B/C             | Justification Test required. See the table below.                                       |  |
| Carrigtwohill   | CT-C-04                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Carrigtwohill   | CT-GA-02                | A/B/C             | Appropriate, retain water compatible uses   |  |
| Carrigtwohill   | CT-GA-05                | A/B/C             | Appropriate, retain water compatible uses   |  |
| Carrigtwohill   | CT-GC-06                | A/B/C             | Appropriate, retain water compatible uses   | 4.2.3.26 - Amend CT-GC-06 to exclude a 0.8Ha area of land towards the centre of this site, featuring a dwelling house and a storage yard, and zone this as Existing Residential/Mixed Residential and Other Uses |
| Carrigtwohill   | CT-GC-07                | A/B/C             | Appropriate, retain water compatible uses   |  |
| Carrigtwohill   | CT-GC-08                | A/B/C             | Appropriate, retain water compatible uses   |  |
| Carrigtwohill   | CT-GR-01                | A/B/C             | Appropriate, retain water compatible uses   |  |
| Carrigtwohill   | CT-I-01                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Carrigtwohill   | CT-I-02                 | A/B/C             | Justification Test required. See the table below.                                       |  |
| Carrigtwohill   | CT-I-04                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Carrigtwohill   | CT-R-01                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |



| Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|--|------------------|------------|---|---|
| Settlement   | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
| Carrigtwohill  | CT-R-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigtwohill  | CT-R-06          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigtwohill  | CT-R-08          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
|  |                  |            |   | 4.2.3.12 - Amend the Carrigtwohill zoning map so that CT-R-09 is represented as CT-GC-10 Green Infrastructure and exclude Objective CT-R-09 from the Specific Development Objectives for Carrigtwohill and rezone as CT-GC-10 Green Infrastructure. |
| Carrigtwohill  | CT-R-09          | A/B/C      | Preliminary screening carried out. See the table below. Water compatible use required.  | <b>Final Comment:</b> Green Infrastructure zoning is considered appropriate, retain water compatible uses.  |
|  |                  |            |   | 4.2.3.12 - Amend the Carrigtwohill zoning map so that CT-R-09 is represented as CT-GC-10 Green Infrastructure and exclude Objective CT-R-09 from the Specific Development Objectives for Carrigtwohill and rezone as CT-GC-10 Green Infrastructure. |
| Carrigtwohill  |                  |            |   | <b>Final Comment:</b> Green Infrastructure zoning is considered appropriate, retain water compatible uses.  |
| Carrigtwohill  | CT-RR-02         | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigtwohill  | CT-T-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Carrigtwohill  | CT-T-03          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |

**Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement    | Zoning Objective  | Flood Zone | Comment   | Proposed Draft Amendment   |
|---------------|---|------------|---|--|
| Carrigtwohill | CT-X-01   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Carrigtwohill | Existing Mixed / General Business / Industrial south of CT-I-02 | A/B/C      | Justification Test required. See the table below.                                       |  |
| Carrigtwohill | Existing Mixed / General Business / Industrial south of CT-B-04 | A/B        | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Carrigtwohill | Existing Mixed / General Business / Industrial south of CT-T-02 | A/B        | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Carrigtwohill | Existing Mixed / General Business / Industrial east of CT-B-05  | A/B        | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Carrigtwohill | CT-U-06   | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.3.31 - Amend the specific zoning objective text of CT-U-06 to include a reference to flood risk and to a need to refer to objectives in Volume One, Chapter 11 Water Management. |
| Carrigtwohill | CT-U-01   | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.3.34 - Amend the specific objective text of CT-U-01 to include reference to flood risk and to a need to refer to objectives in Volume One, Chapter 11 Water Management.          |
| Carrigtwohill | CT-U-02   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.3.32 - Amend the specific zoning objective text of CT-U-02 to include a reference to flood risk and to a need to refer to objectives in Volume One, Chapter 11 Water Management. |

| Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|--|------------------|------------|---|--|
| Settlement   | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment   |
| Carrigtwohill  | CT-U-12          | B          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.3.6 - Amend Table 4.2.7 to include an additional single asterisk after a key project and to include additional text in table footnote, associated with single asterisk.    |
| Cobh   | CH-C-01          | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.4.1 - Amend objective CH-C-01 and associated map label.  |
| Cobh   | CH-GR-03         | A/B/C      | Appropriate, retain water compatible uses   | 4.2.4.19 - Amend the specific objective text of CH-GR-03 to include a reference to flood risk and to a need to refer to objectives in Volume One, Chapter 11 Water Management. |
| Cobh   | CH-GR-04         | A          | Appropriate, retain water compatible uses   | 4.2.4.20 - Amend the specific objective text of CH-GR-04 to include reference to flood risk and to a need to refer to objectives in Volume One, Chapter 11 Water Management.   |
| Cobh   | CH-I-01          | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.4.24 - Amend the specific objective text of CH-I-01.   |
| Cobh   | CH-T-01          | A/B/C      | Justification Test required. See the table below.                                       |  |
| Cobh   | CH-X-02          | A          | Justification Test required. See the table below.                                       | 4.2.4.3 – Amend text of objective.   |
| Cobh   | CH-U-10          | A/B        | Appropriate, retain water compatible uses   |  |
| Cobh   | CH-GR-06         | A/B/C      | Appropriate retain water compatible uses  | 4.2.4.22 - Amend the specific objective text of CH-GR-06 to include reference to flood risk.   |
| Cobh   | CH-U-11          | A/B/C      | Appropriate, retain water compatible uses   |  |

**Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement    | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment   |
|---------------|------------------|------------|---|--|
| Little Island | LI-B-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.5.16 - Amend the specific objective text of LI-B-01 to include a reference to flood risk.  |
| Little Island | LI-B-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.5.17 - Amend the specific objective text of LI-B-02 to include a reference to flood risk.  |
| Little Island | LI-B-03          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.5.25 - Amend the specific objective text of LI-B-03 to include a reference to flood risk.  |
| Little Island | LI-C-01          | A/B/C      | Consider water compatible uses for extent of zoning objective within flood zone.        | 4.2.5.10 - Amend area of LI-C-01 to exclude area identified as being at risk of flooding and amend development boundary accordingly.<br><br><b>Final Comment:</b> Amended zoning boundary now within Flood Zone C. Zoning objective no longer at risk. |
| Little Island | LI-GA-07         | A/B/C      | Appropriate, retain water compatible uses   | 4.2.5.18 - Amend the specific objective text of LI-GA-07 to include a reference to flood risk.   |
| Little Island | LI-GC-01         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Little Island | LI-GC-02         | A/B/C      | Appropriate, retain water compatible uses   | 4.2.5.4 - Amend area of LI-GC-02 to include additional area of green infrastructure.<br>4.2.5.19 - Amend the specific objective text of LI-GC-02 to include a reference to flood risk.   |
| Little Island | LI-GC-03         | A          | Appropriate, retain water compatible uses   | 4.2.5.20 - Amend the specific objective text of LI-GC-03 to include a reference to flood risk.   |

| Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B |  |            |   |  |
|--|--|------------|---|--|
| Settlement   | Zoning Objective   | Flood Zone | Comment   | Proposed Draft Amendment   |
| Little Island  | LI-GC-05   | A          | Appropriate, retain water compatible uses   |  |
| Little Island  | LI-I-01  | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.5.5 - Amend area of LI-I-01 and LI-GC-04 slightly to exclude an area of existing development within LI-I-01 from LI-GC-04.<br>4.2.5.26 - Amend the specific objective text of LI-I-01 to clarify objective, avoid repetition, and to include a reference to flood risk.  |
| Little Island  | LI-I-04  | A          | Consider water compatible zoning for extent of zoning objective within flood zone.      | 4.2.5.15 - Amend the area of LI-I-04 to exclude an area of scrub habitat and zone A Flood Risk and include this area within a new green infrastructure zoning, LI-GC-09 as shown. Exclude text from objective LI-I-04 and include additional objective LI-GC-09.<br><br><b>Final Comment:</b> Amended zoning boundary now within Flood Zone C. Zoning objective no longer at risk. |
| Little Island  | LI-I-05  | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.5.21 - Amend the specific objective text of LI-I-05 to include a reference to flood risk.  |
| Little Island  | LI-RR-01   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.5.22 - Amend the specific objective text of LI-RR-01 to include a reference to flood risk.   |
| Little Island  | LI-X-03  | A          | Justification Test required. See the table below.                                       |  |
| Little Island  | Existing Mixed / General Business / Industrial north west of LI-X-02 | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |

**Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement    | Zoning Objective  | Flood Zone | Comment   | Proposed Draft Amendment   |
|---------------|---|------------|---|--|
| Little Island | Existing Mixed / General Business / Industrial east of LI-B-02        | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Little Island | Existing Mixed / General Business / Industrial south west of LI-GC-01 | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Little Island | Existing Mixed / General Business / Industrial south of LI-GC-02      | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Little Island |   | A/B/C      |   | 4.2.5.14 -Include new objective, LI-U-07, for the maintenance of an amenity walk.<br><br><b>Final Comment:</b> Proposed LI-U-07 zoning objective within Flood Zone A. Appropriate, retain water compatible uses.   |
| Little Island |   | A/B/C      |   | 4.2.5.15 – Amend the area of LI-I-04 to exclude an area of scrub habitat and zone A Flood Risk and include this area within a new green infrastructure zoning, LI-GC-09.<br><br><b>Final Comment:</b> Proposed LI-GC-09 zoning objective within Flood Zone A. Appropriate, retain water compatible uses. |
| Monard        | MN-X-01   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.6.1 – Amend objective MN-X-01 to highlight flood risk.   |

| Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|--|------------------|------------|---|--|
| Settlement   | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment   |
| Carrignavar  | GC-02            | A/B/C      | Appropriate, retain water compatible uses   | 4.2.7.4- Amend the specific objective text of GC-02 to include a reference to flood risk.      |
| Carrignavar  | GC-03            | A/B/C      | Appropriate, retain water compatible uses   | 4.2.7.3 Amend the area of GC-03 so that it is extended to include area at risk of flooding.    |
| Carrignavar  | GR-01            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Glounthaune  | GN-C-02          | A          | Appropriate, retain water compatible uses   |  |
| Glounthaune  | GN-GC-01         | A/B/C      | Appropriate, retain water compatible uses   | 4.2.8.6 – Amend the specific objective text of GN-GC-01 to include a reference to flood risk.  |
| Glounthaune  | GN-GR-02         | A/B/C      | Appropriate, retain water compatible uses   | 4.2.8.7 – Amend the specific objective text of GN-GR-02 to include a reference to flood risk.  |
| Glounthaune  | GN-GR-03         | A          | Appropriate, retain water compatible uses   | 4.2.8.11 – Amend the specific objective text of GN-GR-03 to include a reference to flood risk. |
| Glounthaune  | GN-T-02          | A          | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.8.8 – Amend the specific objective text of GN-T-02 to include a reference to flood risk.   |
| Glounthaune  | GN-T-03          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Glounthaune  | GN-R-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.8.10 – Amend the specific objective text of GN-R-02 to include a reference to flood risk.  |
| Haulbowline Island   | GR-01            | A/B/C      | Appropriate, retain water compatible uses   |  |

**Table 22: Cobh Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement         | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
|--------------------|------------------|------------|---|---|
| Haulbowline Island | X-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.16.2 – Amend the specific objective text of Haulbowline X-01 to represent the reference to flood risk.  |
| Marino Point       | X-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.2.10.2 - Amend the specific objective text of Marino Point X-01 to represent the reference to flood risk. |



**Preliminary Screening of sites at risk of flooding for Cobh Municipal District**

4.5.21 The table below details the Preliminary Screening carried out to assess the likelihood of a site passing a justification test prior to carrying out further work. This comprises parts 1 and 2 of the Justification Test for development plans as detailed in Box 4.1 of the Flood Risk Guidelines. Regarding draft zoning CT-R-09, a full justification test was not carried out as the initial screening stage indicated it was not capable of passing a justification test given the lands are not within or adjoining a core, alternative sites are available, amongst other reasons which are detailed in full in the below table.

| <b>Table 23 – Preliminary Screening for CT-R-09 within Flood Zone A and / or B</b>   |   |  |   |   |  |  |   |
|--|---|--|---|---|--|--|---|
| <b>The urban settlement is targeted for growth</b>   | <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b> | <b>Comprises significant previously developed and/ or underutilised lands</b> | <b>Is within or adjoining the core of an established or designated urban settlement</b> | <b>Will be essential in achieving compact and sustainable urban growth</b>                             | <b>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</b> | <b>Result / Recommendation for zoning</b>   |
| Carrigtwohill is a Main Town in in Metropolitan Cork which is targeted for significant population growth to maximise the value of the suburban rail project, grow the employment base of the town as a key location for the delivery of the economic targets for the whole of Metropolitan | The site is part of the Urban Expansion area of Carrigtwohill.  | The site is considered necessary for the expansion of the settlement.                                    | The lands are greenfield lands.   | The lands are proximate to the centre of the town.                                      | As part of the urban expansion area, the lands will be an important part of the expansion of the town. | Alternative lands are available.   | This site would not pass a Justification test. Consider water compatible zoning for the site. |

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| Cork, and build a vibrant, compact and accessible town centre. |  |  |  |  |  |  |  |
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**Justification Test for Cobh Municipal District**

4.5.22 The table below details the Justification Tests for the areas identified above as being within Flood Zone A and B, and where the sequential approach and avoidance cannot be achieved.

| <b>Table 24: Carrigtwohill Justification Tests</b>  |   |   |   |
|---|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>CT-I-02</b>  | <b>Existing Mixed / General Business / Industrial lands south of CT-I-02 (Stryker Site) (Stryker site) (See Appendix A for indicative map)</b>  | <b>CT-C-01</b>  |
| <b>The urban settlement is targeted for growth</b>  | Carrigtwohill is a Main Town in in Metropolitan Cork which is targeted for significant population growth to maximise the value of the suburban rail project, grow the employment base of the town as a key location for the delivery of the economic targets for the whole of Metropolitan Cork, and build a vibrant, compact and accessible town centre. | Carrigtwohill is a Main Town in in Metropolitan Cork which is targeted for significant population growth to maximise the value of the suburban rail project, grow the employment base of the town as a key location for the delivery of the economic targets for the whole of Metropolitan Cork, and build a vibrant, compact and accessible town centre. | Carrigtwohill is a Main Town in in Metropolitan Cork which is targeted for significant population growth to maximise the value of the suburban rail project, grow the employment base of the town as a key location for the delivery of the economic targets for the whole of Metropolitan Cork, and build a vibrant, compact and accessible town centre. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned for industrial use and will be an important site for the delivery of jobs in tandem with the population growth planned for the town.  | The site is part of the developed footprint of Carrigtwohill, containing predominantly employment uses which is reflected in the zoning.  | The zoning reflects the need to provide for the community uses (education) that are required to support the proper planning and sustainable development of the town.  |
| <b>Is essential to facilitate regeneration and / or expansion of</b>  | The site is essential to underpin the growth necessary for the expansion of the town.   | The site is essential to the continued operation of the existing uses.  | The site is considered essential to the expansion of centre of the town.  |

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| <b>the centre of the urban settlement.</b>  |  |  |  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | These lands are partially developed and occupied by high end manufacturing.  | Lands are currently developed with high end manufacturing.   | The site is a significant parcel of underutilised land within the town.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site adjoins the built footprint of the town and is partially developed.   | The site adjoins the built footprint of the town.  | The site directly adjoins the core of the town.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | This site, as a key employment location underpins the sustainable development of the town.   | This site, as a key employment location underpins the sustainable development of the town.   | The community facilities envisaged for the site are essential to underpin the compact and sustainable growth of Carrigtwohill.   |
| <b>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.</b> | There are no suitable alternative lands at lower risk that would allow for the orderly development of the town.  | There are existing uses on the site.   | There are no other suitable lands at lower risk within or adjoining the core of the town.  |
| <b>A flood risk assessment to an appropriate level of detail has</b>  | Flood mitigation works have taken place on and around the Stryker site which reduce flood risk to the immediate site and to neighbouring areas. As the Flood Zones are undefended, the benefit | Flood mitigation works have taken place on and around the Stryker site which reduce flood risk to the immediate site and to neighbouring areas. As the Flood Zones are undefended, the benefit | Flood mitigation works have been investigated on this site and demonstrate that flood risk can be managed to a level which allows the sequential approach to be followed and |

|                                  |  |  |  |
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| <b>been carried out</b>          | of these works have not been included in the SFRA. However, for a site specific FRA hydraulic modelling should be carried out to demonstrate the benefit and resultant flood risk. Suitable mitigation measures should be proposed which address the residual risk of the flood mitigation works failing or capacity being exceeded. | of these works have not been included in the SFRA. However, for a site specific FRA hydraulic modelling should be carried out to demonstrate the benefit and resultant flood risk. Suitable mitigation measures should be proposed which address the residual risk of the flood mitigation works failing or capacity being exceeded. | avoidance of less or highly vulnerable development within Flood Zones A and B. |
| <b>Result</b>                    | Pass   | Pass   | Pass   |
| <b>Recommendation for zoning</b> | Retain zoning objective  | Retain zoning objective  | Retain zoning objective  |

| <b>Table 25: Cobh Justification Tests</b>   |  |  |
|---|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Cobh CH-T-01</b>  | <b>Cobh CH-X-02</b>  |
| <b>The urban settlement is targeted for growth</b>  | Cobh is a Main Town in the Cobh Municipal District and is identified for moderate growth in population and employment to promote greater self-sufficiency within the town in terms of the role of the town centre and retail services. The growth is also targeted towards the waterfront and to promote the heritage of the town. In addition, Ballynoe Valley land bank to the north of the town has a land-use framework for future growth. | Cobh is a Main Town in the Cobh Municipal District and is identified for moderate growth in population and employment to promote greater self-sufficiency within the town in terms of the role of the town centre and retail services. The growth is also targeted towards the waterfront and to promote the heritage of the town. In addition, Ballynoe Valley land bank to the north of the town has a land-use framework for future growth. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary location for retail and mixed uses. The zoning will provide for town centre uses to serve residents of the settlement.  | The zoning is required to facilitate maritime tourism development at Lynch's Quay adjacent to the town centre. The zoning provides for integrated tourism including a cruise liner berth, ferry terminal, car park and associated services which is required to achieve the proper planning and sustainable development of Cobh.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre in Cobh as the primary location for retail and other mixed uses and to address vacancy in the town.   | The site is essential to facilitate an integrated tourism product in Cobh and promote the towns rich heritage and maritime resources.  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are underutilised and vacant sites in the zone.  | It is a brownfield site with underutilised lands.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre of Cobh.  | Site is located adjacent to the town centre.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.  | Redevelopment provides an opportunity to achieve compact growth and provides for development that will boost urban growth in the adjacent town centre.   |
| <b>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.</b>     | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within the core that will enable the regeneration and continuation of the existing town centre.   | There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the development of an integrated tourism product including ferry terminal and cruise liner berths.   |
| <b>A flood risk assessment to an appropriate level of detail has</b>  | The T zoning objective that lies within Flood Zone A and B is at risk of tidal flooding and suitable mitigation measures can   | The X zoning objective that lies within Flood Zone A and B is at risk of tidal flooding and suitable mitigation measures can include raising FFL   |

|                                  |   |   |
|----------------------------------|---|---|
| <b>been carried out</b>          | include raising FFL and allocating water compatible or less vulnerable uses at ground level. Highly vulnerable uses should be avoided at ground flood level in Flood Zone A or B. | and allocating water compatible or less vulnerable uses at ground level. Highly vulnerable uses should be avoided at ground flood level in Flood Zone A or B. |
| <b>Result</b>                    | Pass  | Pass  |
| <b>Recommendation for zoning</b> | Retain zoning objective   | Retain zoning objective   |

| <b>Table 26: Little Island Justification Tests</b>  |   |
|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Little Island<br/>LI-X-03</b>  |
| <b>The urban settlement is targeted for growth</b>  | Little Island is one of the key employment locations in Metropolitan Cork and is designated as a Strategic Employment Area in the County. The settlement is targeted for small scale growth to maintain a high quality work place environment for the existing and future workforce population along with an expansion of the residential offering and supporting facilities. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | This zoning as a multimodal transport hub for the settlement is required to achieve the sustainable development of Little Island. The zoning provides for a railway fleet depot, storage of railway sidings provision of a railway station, bus depot, park & ride facilities, EV charge points, bike sharing systems and bike maintenance stations.                          |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning supports regeneration of this brownfield site and the potential strategic provision and integration of active travel modes.  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | Significant portion of the site is brownfield and there are underutilised lands on the site.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is adjacent to the employment core of Little Island.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The provision of this strategic transport hub facilitates active travel modes that will support the delivery of compact growth not only in Little Island but for the wider Cork MASP area.  |
| <b>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.</b>     | There are no alternative sites in areas at lower risk of flooding within or adjoining the core, adjacent to the rail line that will facilitate a multi-modal transport hub.   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The site is primarily at tidal risk of flooding, which can be mitigated through flood defences or raised ground levels without the provision of compensatory storage. A detailed Flood Risk Assessment should be carried out as part of the development proposal for the site and this should   |



|                                  |   |
|----------------------------------|---|
|                                  | include an assessment of the need for site specific flood mitigation, including consideration for climate change. It is essential that any onsite works do not increase flood risk to neighbouring lands, and preferably provide a reduction in flood risk. |
| <b>Result</b>                    | Pass  |
| <b>Recommendation for zoning</b> | Retain zoning objective   |

## 4.6 East Cork Municipal District

- 4.6.1 The East Cork Municipal District lies within the Metropolitan Strategic Planning Area and the Greater Cork Ring Strategic Planning Area as defined in the Draft County Development Plan. It is a predominantly rural District that accommodates an extensive network of settlements as follows:
- 4.6.2 Two main towns: Midleton and Youghal.
- 4.6.3 Four Key Villages: Castlemartyr, Cloyne, Whitegate and Aghada and Killeagh.
- 4.6.4 Eleven Villages: Ballincurragh, Ballycotton, Ballymacoda, Dungourney, Ladysbridge, Lisgould, Mogeely, Saleen, Shanagarry/Garryvoe, Trabolgan, and Redbarn.

### Sources of Flooding

- 4.6.5 Rivers are the primary cause of flooding in the East Cork Municipal District with flood events attributed to fluvial sources ranging from the Blackwater River in particular to smaller tributaries and drains. The Lower River Lee system runs west-east from its source in the west to the Cork Harbour and parts of the western part of the Municipal District are under the influence of the Lee River catchment. On the eastern part of the Municipal District, Youghal and environs are affected by the Blackwater estuary. The central part of the Municipal District has several smaller rivers running through the towns and villages, namely the Owenacurra, Dungourney and Ballinacurra Rivers in Midleton, Womanagh through Castlemartyr, the Dissour through Killeagh and the Shanagarry River in Cloyne.
- 4.6.6 In the Municipal District, Youghal, the Specialist Employment Area of Whitegate/ Aghada, Ballycotton, Shanagarry/ Garryvoe, Redbarn and Trabolgan are or may be susceptible to tidal flooding and coastal erosion due to their coastal locations.
- 4.6.7 It should be noted that flood events occur frequently within the Municipal District, as evidenced by the number of past flood events, both single and recurring events, represented on [www.floodinfo.ie](http://www.floodinfo.ie). These include but are not limited to flood events at Midleton, Castlemartyr and Youghal.

### Rivers in the East Cork Municipal District Area

- 4.6.8 Table 27 contains a list of the main settlements and the river catchments.

| <b>River Catchment</b> | <b>Main Settlements</b> |
|------------------------|-------------------------|
| Owenacurra River       | Midleton                |
| Dungourney River       | Midleton                |
| Ballinacurra River     | Midleton                |
| Womanagh River         | Castlemartyr            |
| Dissour River          | Killeagh                |
| Shannagarry River      | Cloyne                  |
| Blackwater Estuary     | Youghal                 |

4.6.9 The Lower Lee system runs between the City boundary before entering Lough Mahon where extensive areas of mudflat define the shallows of the inner harbour between Fota Island and Cobh. The Ballinacurra Estuary that drains into the Cork harbour south of Midleton has two tributaries that feed into the harbour from Dungourney and Owenacurra Rivers.

4.6.10 Part of the larger River Blackwater catchments form the eastern boundary of the Municipal District.

#### **Addressing Flood Risk in the East Cork MD**

4.6.11 This section details the approach to Flood Risk Management adopted in the East Cork MD.

4.6.12 As part of the review of the Draft Development Plan, all zoned lands in areas at risk of flooding have been considered in the context of the flood zone maps.

4.6.13 The inclusion of the flood zone information on the settlement maps of the Municipal District is the first step in managing flood risk in the future. The mapping provides for an improved understanding of flood risk issues within the County. The maps indicate the extent of flood zones that should be safeguarded from development and will support the application of the sequential approach, and the justification test as appropriate, in areas where development is proposed.

4.6.14 Flood risk to each settlement has been appraised based on the Flood Zones which cross the settlement boundary and is summarised in table 28 below.

**Table 28: Flood Risk by Settlement in the East Cork Municipal District**

| <b>Settlement</b>       | <b>Part of the settlement within Flood Zone A or B?</b> | <b>Comment</b>  |
|-------------------------|---|---|
| <b>Main Settlements</b> |   |   |
| Midleton                | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.  |
| Youghal                 | Yes   |   |
| <b>Key Villages</b>     |   |   |
| Castlemartyr            | Yes   | See table below for details of specific flood risk to zoning objective areas. For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.  |
| Cloyne                  | Yes   |   |
| Whitegate and Aghada    | Yes   |   |
| Killeagh                | Yes   |   |
| <b>Villages</b>         |   |   |
| Ballincurrig            | Yes   | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.  |
| Ballymacoda             | Yes   |   |
| Ballycotton             | Yes   |   |
| Dungourney              | Yes   |   |
| Ladysbridge             | Yes   |   |
| Lisgoold                | Yes   |   |
| Mogeely                 | Yes   | See table below for details of specific flood risk to zoning objective areas. In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. In addition, it is noted that Flood Risk in Mogeely arises largely as a result of water leaving the river upstream of Mogeely and travelling along roads and other overland flow paths. It is recommended that a holistic approach to understanding flood risk is adopted and a flood mapping study initiated which will guide the allocation of development within the settlement. |
| Saleen                  | Yes   | See table below for details of specific flood risk to zoning objective areas.   |
| Shanagarry/Garryvoe     | Yes   |   |

|   |     |  |
|---|-----|--|
|   |     | For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.   |
| Trabolgan (no boundary for this settlement) | Yes | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Redbarn                                     | Yes | See table below for details of specific flood risk to zoning objective areas.<br>For zoning objectives not listed below (i.e., in Flood Zone C), proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA, with regard to the consideration of all sources of flood risk.                                  |

4.6.15 The Table below lists the specific zoned sites within the East Cork Municipal District that are located within either Flood Zone A or B and the circumstances of their inclusion.

| <b>Table 29: East Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B</b> |                         |                   |   |   |
|--|-------------------------|-------------------|---|---|
| <b>Settlement</b>  | <b>Zoning Objective</b> | <b>Flood Zone</b> | <b>Comment</b>  | <b>Proposed Draft Amendment</b>   |
| Midleton   | MD-T-05                 | A                 | Justification Test required. See the following section of this SFRA                     |   |
| Midleton   | MD-T-04                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Midleton   | MD-T-03                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Midleton   | MD-T-02                 | A/B/C             | Justification Test required. See the following section of this SFRA                     |   |
| Midleton   | MD-T-01                 | A/B/C             | Justification Test required. See the following section of this SFRA                     |   |
| Midleton   | MD-B-01                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.3.3.32 – Update objective and map for MD-B-01 including change of land use of part of site to existing residential use.                                       |
| Midleton   | MD-B-02                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.3.3.42 - Include Flood Risk Asterisk for objective.   |
| Midleton   | MD-GA-02                | A/B/C             | Appropriate, retain water compatible uses   | 4.3.3.42 - Include Flood Risk Asterisk for objective.   |
| Midleton   | MD-GA-05                | A/B/C             | Appropriate, retain water compatible uses   |   |
| Midleton   | MD-GC-09                | A/B/C             | Appropriate, retain water compatible uses   |   |
| Midleton   | MD-GC-12                | A/B/C             | Appropriate, retain water compatible uses   | 4.3.3.27 – Include a Flood Risk Asterisk for objective MD-GC-12.  |
| Midleton   | MD-GC-13                | A/B/C             | Appropriate, retain water compatible uses   |   |
| Midleton   | MD-GC-15                | A/B/C             | Appropriate, retain water compatible uses   |   |
| Midleton   | MD-GC-16                | A/B/C             | Appropriate, retain water compatible uses   |   |
| Midleton   | MD-GC-18                | A/B/C             | Appropriate, retain water compatible uses   | 4.3.3.28 – Include a Flood Risk Asterisk for objective MD-GC-18.  |
| Midleton   | MD-GR-03                | A/B/C             | Appropriate, retain water compatible uses   | 4.3.3.18 – It is proposed to amend the Midleton Zoning Map to omit Draft Plan Objective MD-X-01 completely and replace it with the following zoning objectives: |

| Table 29: East Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|---|------------------|------------|---|--|
| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment   |
|   |                  |            |   | (a) MD-X-01: Mixed use residential and office development subject to suitable access being available. The development proposal shall include a detailed Traffic and Transport Assessment and road safety audit. Proposals should include Pedestrian and cyclist linkage to the town centre and with the Green Infrastructure sites to the east, northwest and south east of the site.<br>(b) Extend the existing Green Infrastructure zoning MD-GR-03 north of the railway line to include the balance of the draft plan X-01 site as follows. |
| Midleton  | MD-GR-06         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Midleton  | MD-GR-14         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.3.30 – Include a Flood Risk Asterisk for objective MD-GR-14.   |
| Midleton  | MD-GR-17         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Midleton  | MD-I-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Midleton  | MD-I-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Midleton  | MD-I-03          | A/B/C      | Consider water compatible uses.   | 4.3.3.31 – It is proposed to omit the site of MD-I-03 and return the land to the greenbelt and bring in the development boundary.<br><br><b>Final Comment:</b> Proposed green belt 1 zoning would be appropriate, retain water compatible uses.  |
| Midleton  | MD-R-01          | A/B/C      | Consider water compatible uses for extent of zoning at risk of flooding.                | 4.3.3.36 – It is proposed to amend the boundary of MD-R-01 and rezone that section of the site that is at risk of flooding as Green Infrastructure MD-GC-19.   |

| Table 29: East Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|---|------------------|------------|---|--|
| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment   |
|   |                  |            |   | <b>Final Comment:</b> The proposed GI zone would be appropriate, retain water compatible uses. The amended residential zoning MD-R-01 – sequential approach, avoid development in Flood Zone A and B.  |
| Midleton  | MD-R-06          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |  |
| Midleton  | MD-R-08          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. FRA for this site should include consideration of groundwater flood risk and ensure compatibility with the forthcoming FRS. |  |
| Midleton  | MD-R-09          | A/C/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.3.42 - Include Flood Risk Asterisk for objective.  |
| Midleton  | MD-R-12          | A/C/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |  |
| Midleton  | MD-R-13          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |  |
| Midleton  | MD-R-20          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.3.42 - Include Flood Risk Asterisk for objective.  |
| Midleton  | MD-R-22          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.3.42 - Include Flood Risk Asterisk for objective.  |
| Midleton  | MD-X-01          | A          | Justification Test required. See the following section of this SFRA which recommends consider water compatible uses for extent of zoning objective within flood zone.   | 4.3.3.18 – It is proposed to amend the Midleton Zoning Map to omit Draft Plan Objective MD-X-01 completely and replace it with an amended MD-X-01.<br><br><b>Final Comment:</b> Amended MD-X-01 zoning objective within Flood Zone C. Not at risk. |
| Midleton  | MD-U-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.3.42 - Include Flood Risk Asterisk for objective.  |
| Midleton  | MD-U-04          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.3.42 - Include Flood Risk Asterisk for objective.  |
| Midleton  | MD-U-05          | A/B/C      | Justification Test required. See the following section of this SFRA   | 4.3.3.42 - Include Flood Risk Asterisk for objective.  |



| Table 29: East Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|---|------------------|------------|---|---|
| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
| Midleton  | MD-U-08          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.3.42 – Include Flood Risk Asterisk for objective.   |
| Midleton  | MD-U-09          | A/B/C      | Justification Test required. See the following section of this SFRA   |   |
| Midleton  | MD-GR-08         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Midleton  | MD-AG-02         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.3.17 – It is proposed to change the land use of MD-AG-02 from Agricultural to Residential Reserve (RR) with provision for a primary school. Include a new objective to recategorize site from Agriculture to Residential Reserve – MD-RR-29.  |
| Midleton  |                  |            |   | 4.3.3.17 – It is proposed to change the land use of MD-AG-02 from Agricultural to Residential Reserve (RR) with provision for a primary school. Include a new objective to recategorize site from Agriculture to Residential Reserve – <b>MD-RR-29</b> .<br><br><b>Final Comment:</b> MD-RR-29 – There is an area of flood zone A/B along the north western edge of the site. Sequential approach to be applied and development to be avoided in Flood Zones A and B. * required. |
| Midleton  | MD-HT-01         | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.3.42 – Include Flood Risk Asterisk for objective.   |
| Midleton  | MD-HT-02         | A/B/C      | Further development on this site should be limited to Minor Development, as Section 5.28 of the Planning Guidelines until the FRS has been completed and an assessment of residual risks can be made. |   |
| Midleton  |                  |            |   | 4.3.3.36 – It is proposed to amend the boundary of MD-R-01 and rezone that section of the site that is at risk of flooding as Green Infrastructure MD-GC-19.<br><br><b>Final Comment:</b> The proposed GI zone would be appropriate, retain water   |

| Table 29: East Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|---|------------------|------------|---|--|
| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment   |
|   |                  |            |   | compatible uses. The amended residential zoning MD-R-01 – sequential approach, avoid development in Flood Zone A and B.  |
| Youghal   | YL-AG-01         | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.3.4.12 – Include Flood Risk Asterisk for objective YL-AG-01  |
| Youghal   | YL-B-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.3.4.13 – Include Flood Risk Asterisk for objective YL-B-01   |
| Youghal   | YL-B-04          | A/B/C      | Consider water compatible uses.   | 4.3.4.6 – It is proposed to change the land use of YL-B-04 from business to Green Infrastructure (YL-GA-18). Delete objective YL-B-04 and include new site area for YL-GA-18.<br><br><b>Final Comment:</b> Former YL-B-04 now zoned as water compatible use. |
| Youghal   | YL-GB1           | A/B/C      | Appropriate, retain water compatible uses   |  |
| Youghal   | YL-GC-01         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Youghal   | YL-GC-05         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.4.14 – Include Flood Risk Asterisk for objective YL-GC-05  |
| Youghal   | YL-GC-06         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.4.7 – It is proposed to change the land use of Existing Mixed/General Business/Industrial Uses from Business to Green Infrastructure (YL-GC-06). Include a new site area for objective YL-GC-06.   |
| Youghal   | YL-GC-07         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Youghal   | YL-GC-19         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.4.15 – Include Flood Risk Asterisk for objective YL-GC-19  |
| Youghal   | YL-GC-20         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.4.10 – Include area of Ballyvergan Marsh pNHA as part of YL-GC-20. This area lies to the east of the Caravan Park and to the south of Claycastle Pitch and Putt. Amend site area of YL-GC-20.  |

| Table 29: East Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |   |            |  |  |
|---|---|------------|--|--|
| Settlement  | Zoning Objective                                | Flood Zone | Comment  | Proposed Draft Amendment   |
| Youghal   | YL-GC-21  | A/B/C      | Appropriate, retain water compatible uses  |  |
| Youghal   | YL-GC-22  | A/B/C      | Appropriate, retain water compatible uses  |  |
| Youghal   | YL-GC-23  | A/B/C      | Appropriate, retain water compatible uses  |  |
| Youghal   | YL-GR-13  | A/B/C      | Appropriate, retain water compatible uses  |  |
| Youghal   | YL-GR-15  | A/B/C      | Appropriate, retain water compatible uses  |  |
| Youghal   | YL-GA-18  | A/B/C      | Appropriate, retain water compatible uses  | 4.3.4.6 – It is proposed to change the land use of YL-B-04 from business to Green Infrastructure (YL-GA-18). Delete objective YL-B-04 and include new site area for YL-GA-18.  |
| Youghal   | YL-GR-10  | B          | Appropriate, retain water compatible uses  | 4.3.4.16 – Include Flood Risk Asterisk for objective YL-GR-10.   |
| Youghal   | YL-I-02   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.  | 4.3.4.17 – Include Flood Risk Asterisk for objective YL-I-02.  |
| Youghal   | YL-T-01   | A/B/C      | Justification Test required. See the following section of this SFRA  |  |
| Youghal   | YL-T-02   | A          | Justification Test required. See the following section of this SFRA  | 4.3.4.18 – Include Flood Risk Asterisk for objective YL-T-02.  |
| Youghal   | YL-T-03   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.  | 4.3.4.19 – Include Flood Risk Asterisk for objective YL-T-03.  |
| Youghal   | YL-T-04   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.  | 4.3.4.20 – Include Flood Risk Asterisk for objective YL-T-04.  |
| Youghal   | Existing Mixed/General Business/Industrial Uses | A/B/C      | Consider water compatible uses.  | 4.3.4.7 – It is proposed to change the land use of Existing Mixed/General Business/Industrial Uses from Business to Green Infrastructure (YL-GC-06). Include a new site area for objective YL-GC-06.<br><br><b>Final Comment:</b> Area at risk of flooding now zoned as water compatible green infrastructure. |
| Castlemartyr  | CM-T-01   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B and consider water compatible uses for extent of zoning objective (south-eastern corner) within flood zone. | 4.3.6.3 - It is proposed to change the land use of the south eastern portion of CM-T-01 from Town Centre to Green Infrastructure Recreation.   |

| Table 29: East Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|---|------------------|------------|---|---|
| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
|   |                  |            |   | <b>Final Comment:</b> Amended zoning objective CM-T-01 - Sequential approach to be applied and development to be avoided in Flood Zones A and B   |
| Castlemartyr  |                  | A/B/C      |   | 4.3.6.3 - It is proposed to change the land use of the south eastern portion of CM-T-01 from Town Centre to Green Infrastructure Recreation.<br><br><b>Final Comment:</b> Proposed CM-GR-03 zoning objective is within Flood Zone A. Appropriate, retain water compatible uses.   |
| Castlemartyr  | CM-R-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 4.3.6.9 - Include Flood Risk Asterisk for objective CM-R-01   |
| Cloyne  | CY-AG-01         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.7.4 - It is proposed to amend the development boundary to the north of Cloyne by removing CY-AG-01 and changing the land use of 'Rural Area Under Strong Urban Influence'. Delete objective CY-AG-01.<br><br><b>Final Comment:</b> Appropriate, retain water compatible uses. |
| Cloyne  | CY-GR-03         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Cloyne  | CM-T-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Whitegate/Aghada  | WG-GA-03         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Whitegate/Aghada  | WG-GA-09         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.8.5 - Include Flood Risk Asterisk for objective WG-GA-09  |
| Whitegate/Aghada  | WG-GA-12         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Whitegate/Aghada  | WG-GC-04         | A/B/C      | Appropriate, retain water compatible uses   | 4.3.8.6 - Include Flood Risk Asterisk for objective WG-GC-04  |

| Table 29: East Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|---|------------------|------------|---|--|
| Settlement  | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment                                   |
| Whitegate/Aghada  | WG-I-05          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |  |
| Whitegate/Aghada  | WG-I-06          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.8.7- Include Flood Risk Asterisk for objective WG-I-06 |
| Whitegate/Aghada  | WG-X-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.3.42 - Include Flood Risk Asterisk for objective.      |
| Whitegate/Aghada  | WG-GC-10         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Killeagh  | T-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |  |
| Killeagh  | GR-01            | A/B/C      | Appropriate, retain water compatible uses   | 4.3.3.42 - Include Flood Risk Asterisk for objective.      |
| Dungourney  | GR-02            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Mogeely   | GA-01            | A/B/C      | Appropriate, retain water compatible uses and Sequential approach to be applied regarding Community Sports Hall and development to be avoided in Flood Zones A and B. | 4.3.17.2 – It is proposed to amend objective GA-01.        |
| Saleen  | GR-01            | A/B/C      | Appropriate, retain water compatible uses   | 4.3.18.2- Include Flood Risk Asterisk for objective GR-01  |
| Shanagarry/Garryvoe   | GC-01            | A/B/C      | Appropriate, retain water compatible uses   | 4.3.19.2- Include Flood Risk Asterisk for objective GC-01  |
| Redbarn   | X-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.3.22.4- Include Flood Risk Asterisk for objective X-01   |

## Justification Tests for East Cork Municipal District

4.6.16 The table below details the Justification Tests for the areas identified above as being within Flood Zone A and B, and where the sequential approach and avoidance cannot be achieved.

| <b>Table 30: Midleton Justification Tests Part 1</b>  |   |   |   |
|---|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Midleton MD-T-01</b>   | <b>Midleton MD-T-02</b>   | <b>Midleton MD-T-05</b>   |
| <b>The urban settlement is targeted for growth</b>  | Midleton is the largest Main Town in the East Cork Municipal District which is targeted for strong growth due to its rail connections to Metropolitan Cork. The town is important as a residential, employment, tourist and service location for the town and hinterland.                                   | Midleton is the largest Main Town in the East Cork Municipal District which is targeted for strong growth due to its rail connections to Metropolitan Cork. The town is important as a residential, employment, tourist and service location for the town and hinterland. | Midleton is the largest Main Town in the East Cork Municipal District which is targeted for strong growth due to its rail connections to Metropolitan Cork. The town is important as a residential, employment, tourist and service location for the town and hinterland. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary and preferred location for retail uses in Midleton. The zoning will provide for town centre uses to serve visiting members of the public and prioritises the development of the Riverside Way Area into a new urban quarter. | The site is zoned town centre. It is the existing town centre that contains a large food retail store. The zoning will provide for convenience retail uses in this ancillary retail area to serve residents of the settlement.  | The zoning is required to maintain the existing neighbourhood centre which is required for the proper planning and sustainable development of the settlement.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre in Midleton as a primary location for retail and other mixed uses.   | The site is essential to provide convenience retailing in the urban settlement to serve residents.  | The site is essential to facilitate regeneration and expansion of the town centre. Cuddigans Yard / Broderick Street is identified as a regeneration opportunity for mixed retail and other uses to facilitate town centre expansion.                                     |

|   |  |  |  |
|---|--|--|--|
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised and sites in the zone. The zoning seeks to encourage greater use of backland areas, brownfield sites and upper floors of existing buildings within the town centre to positively contribute to the commercial vitality of the town centre. | There are underutilised lands in the zone.   | It is a brownfield site and contains significant underutilised lands.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.  | The site is adjacent to the core of Middleton.   | Site is located adjacent to the existing retail core.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.  | The site provides food retailing directly adjacent to the core and will be key to achieving compact urban growth.  | Redevelopment provides an opportunity to achieve compact growth and sequentially is essential for compact development.   |
| <b>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.</b> | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.   | There is an established use on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the continuation of convenience retailing in the town centre. | There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the coherent development of a mixed use neighbourhood close to the existing town centre. |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The proposed flood relief scheme will provide significant benefit to the town centre of Middleton. However, until such as time as the scheme is  | The proposed flood relief scheme will provide significant benefit to the town centre of Middleton. However, until such as time as the scheme is  | The proposed flood relief scheme will provide significant benefit to the town centre of Middleton. However, until such as time as the scheme is  |

|                                  |  |  |  |
|----------------------------------|--|--|--|
|                                  | complete it is premature to allow significant new development within Flood Zones A and B and development should be limited to Section 5.28 of the Planning Guidelines. | complete it is premature to allow significant new development within Flood Zones A and B and development should be limited to Section 5.28 of the Planning Guidelines. | complete it is premature to allow significant new development within Flood Zones A and B and development should be limited to Section 5.28 of the Planning Guidelines. |
| <b>Result</b>                    | Pass   | Pass   | Pass   |
| <b>Recommendation for zoning</b> | Retain zoning objective  | Retain zoning objective  | Retain zoning objective  |



| <b>Table 31: Midleton Justification Tests Part 2</b>  |   |   |   |
|---|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Midleton MD-X-01</b>   | <b>Midleton MD-U-05</b>   | <b>Midleton MD-U-09</b>   |
| <b>The urban settlement is targeted for growth</b>  | Midleton is the largest Main Town in the East Cork Municipal District which is targeted for strong growth due to its rail connections to Metropolitan Cork. The town is important as a residential, employment, tourist and service location for the town and hinterland. | Midleton is the largest Main Town in the East Cork Municipal District which is targeted for strong growth due to its rail connections to Metropolitan Cork. The town is important as a residential, employment, tourist and service location for the town and hinterland. | Midleton is the largest Main Town in the East Cork Municipal District which is targeted for strong growth due to its rail connections to Metropolitan Cork. The town is important as a residential, employment, tourist and service location for the town and hinterland. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The zoning is required to recognise this site as a special opportunity site to promote sustainable residential and office development in the settlement.  | This zoning as a railway stop for the Water Rock Urban Expansion Area and wider Midleton settlement. It is required to achieve the sustainable development of Water Rock and Midleton. The zoning provides for a railway stop and ancillary services.                     | The zoning is required to identify essential infrastructure as the lands contain the existing public wastewater treatment facilities.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The site is essential to facilitate the regeneration and consolidation of the settlement with a mixed use neighbourhood.  | The zoning supports regeneration of this underutilised site adjacent to the railway line and the potential provision of a railway stop to promote travel by public transport.   | The operation and continued use of the existing public wastewater treatment facilities is essential to serve existing and future growth of the settlement.  |
| <b>Comprises significant previously developed and/</b>  | The site has significant underutilised lands.   | The site has significant underutilised lands.   | There are lands adjacent to the treatment plant within the site to cater for expansion of the facilities.   |

|   |  |  |   |
|---|--|--|---|
| <b>or under utilised lands</b>  |  |  |   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | Site is located close to the core.   | Site is located close to the core.   | The site is located within the settlement boundary.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | Development provides an opportunity to develop an underutilised site and consolidate the settlement network with a mixed use neighbourhood which sequentially represents a good opportunity for development. | The provision of this railway stop will support the delivery of compact growth not only in Water Rock Urban Expansion Area/ Midleton but the wider Cork MASP area.   | The provision of adequate wastewater infrastructure is essential to achieving compact growth in the settlement.   |
| <b>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.</b> | There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the coherent and sequential consolidation of the settlement.                                 | There are no alternative sites in areas at lower risk of flooding within or adjoining the core, adjacent to the rail line that will facilitate a railway stop that could service the Water Rock Urban Expansion Area.  | The site contains the existing public wastewater facility.  |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The site is largely within Flood Zone A and B. Although there is a flood relief scheme planned for Midleton, even with this scheme in place residual risks for residential development will be significant.  | The train stop is considered to be less vulnerable and consists of limited infrastructure. A FRA has been carried out for the train stop development (under Part 8) and demonstrates the site can be developed without significant risk to itself or neighbouring lands. | The WWTP lies partly within Flood Zones A, B and C. Although considered highly vulnerable, the location of the WWTP is appropriate given its location alongside the river. Any future upgrade or expansion of the WWTP will need to be accompanied by an appropriately detailed FRA, with |

|                                  |                                  |                                   |   |
|----------------------------------|----------------------------------|-----------------------------------|---|
|                                  |                                  |                                   | suitable mitigation measures provided to manage flood risk to and from the plant, including consideration of the potential for contamination of flood waters. The site may also benefit from the FRS once complete. |
| <b>Result</b>                    | Fail                             | Pass                              | Pass  |
| <b>Recommendation for zoning</b> | Zone for a water compatible use. | Retain existing zoning objective. | Retain existing zoning objective.   |

| <b>Table 32: Youghal Justification Tests</b>  |   |   |
|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Youghal YL-T-01</b>  | <b>Youghal YL-T-02</b>  |
| <b>The urban settlement is targeted for growth</b>  | Youghal is a Main Town in the East Cork Municipal District and is also a 'Ring Town' within the network of ring towns around the Cork Metropolitan Area. Youghal is an important residential, employment, tourist and service location in a coastal setting. It is targeted for small scale growth. | Youghal is a Main Town in the East Cork Municipal District and is also a 'Ring Town' within the network of ring towns around the Cork Metropolitan Area. Youghal is an important residential, employment, tourist and service location in a coastal setting. It is targeted for small scale growth. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for redevelopment and consolidation of the town centre as it seeks to encourage greater use of backland areas, brownfield sites and upper floors of existing buildings.             | The site is zoned town centre to cater for the sequential expansion of the town centre. The zoning will provide convenience retail uses in this ancillary retail area.  |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as the primary location for retail and other mixed uses  | The site is essential to the provide convenience retailing in the urban settlement to serve residents   |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised sites in the zone including three identified regeneration sites YL-RA-01, YL-RA-02, and YL-RA-06.   | There are underutilised lands within the site.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.   | The site is located adjacent to the existing core of Youghal.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.   | The site provides food retailing directly adjacent to the core and will be key to achieving compact urban growth.   |

|  |  |  |
|--|--|--|
| <p><b>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.</b></p> | <p>There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.</p>  | <p>There is an established use on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the continuation of convenience retailing in the town centre.</p>  |
| <p><b>A flood risk assessment to an appropriate level of detail has been carried out</b></p>   | <p>The T zoning objective that lies within Flood Zone A and B is at risk of tidal flooding and suitable mitigation measures can include raising FFL and allocating water compatible or less vulnerable uses at ground level. Detailed examination of flow paths should also be undertaken to specifically inform flood risk at the identified regeneration sites. Highly vulnerable uses should be avoided at ground flood level in Flood Zone A or B.</p> | <p>The T zoning objective lies wholly within Flood Zone A and is at risk of tidal flooding. Suitable mitigation measures can include raising FFL and allocating water compatible or less vulnerable uses at ground level. The site specific FRA also needs to consider emergency access from the site and provide an emergency plan which must be agreed by Cork County Council prior to planning permission being granted. Highly vulnerable uses should be avoided at ground flood level in Flood Zone A or B.</p> |
| <p><b>Result</b></p>   | <p>Pass</p>  | <p>Pass</p>  |
| <p><b>Recommendation for zoning</b></p>  | <p>Retain Zoning Objective</p>   | <p>Retain Zoning Objective</p>   |

## 4.7 Macroom Municipal District

- 4.7.1 The Macroom Municipal District straddles three strategic planning areas as defined in the Draft County Development Plan. The majority of the Municipal District including the Main Town of Macroom is located within the Greater Cork Ring Strategic Planning Area with some western areas located within the West Cork Strategic Planning Area and the eastern portion of the Municipal District located within the County Metropolitan Cork Strategic Planning Area which includes the Metropolitan Towns within the county administrative area.
- 4.7.2 It is a predominantly rural District that accommodates an extensive network of settlements as follows:
- 4.7.3 Two main towns: Macroom and Millstreet.
- 4.7.4 Four Key Villages: Killumney/Ovens, Béal Átha an Ghaorthaidh, Baile Mhic Íre / Baile Bhuirne, and Coachford.
- 4.7.5 Fourteen Villages: Aghabullogue, Aherla, Ballynora, Cloghduv, Clondrohid, Courtbrack, Crookstown, Inchigeelagh, Kilmurry, Cill na Martra, Model Village (Dripsey), Rylane/Seiscne, Stuake/Donoughmore and Upper Dripsey.
- 4.7.6 Two Other Locations: Guagán Barra and Inniscarra.

### Sources of Flooding

- 4.7.7 Rivers are the primary cause of flooding; with flood events attributed to fluvial sources ranging from the major rivers, including the River Lee, the Sullane River, to the smaller tributaries, drains and natural lakes.
- 4.7.8 Generally fluvial flooding in the Lee catchment is as a result of prolonged heavy rainfall in the Shehy, Boggeragh and Derrynasaggart Mountains to the west and northwest of the catchment causing large volumes of water to pass down through the Sullane and Lee Rivers. This water gradually slows down as it passes through Lough Allua and the Lee reservoirs further downstream. However, the flow in the River Lee also gradually increases further downstream as more tributaries join and contribute to flows.

### Rivers in the Macroom Municipal District Area

- 4.7.9 There are a number of rivers which flow through the settlements in the Municipal District Area which include the River Lee, River Sullane (Macroom and Millstreet). The district also includes the Laney River, the Dripsey River, The River Bride and the Shournagh River.

#### *River Lee*

- 4.7.1 The River Lee has its source in the Shehy Mountains near Guagán Barra. The Lee flows from the lake of Guagán Barra as a fast passed torrent but eases at Béal Átha an Ghaorthaidh and flows into Lough Allua. Departing the Lough, east it again becomes rapid before flowing into the Inniscarra reservoir created by Inniscarra Dam. Moving on, it flows out of Inniscarra Dam, a gentle river until it comes to Ballincollig weir located in Ballincollig

Regional Park. It then flows into the city under Inniscarra Bridge and flows parallel to the Carrigrohane Road. It flows over the Lee weir and then is split into the north and south channel by a sluice. The two channels join again at the Cork docks and enter the sea at Cobh.

- 4.7.2 The main tributaries of the River Lee upstream of Cork City include the Sullane River, the River Laney, the Dripsey River, the River Bride, and the Shournagh River. The flows in the River Lee are influenced and partly controlled by the Carrigadrohid and Inniscarra hydro-electricity dams owned by the Electricity Supply Board (ESB).
- 4.7.3 The Lee catchment covers an area of approximately 2,000 square kilometres. The catchment is defined by the land area drained by the River Lee, its tributaries and Cork Harbour. To facilitate analysis of flood risk, the catchment has been broken down into nine sub-catchments as follows: Upper River Lee, Lower River Lee, Tramore/Douglas River, Kiln River, Glashaboy River, Owenacurra River, Carrigtwohill area, Owenboy River and Cork Harbour. A large part of the Macroom Municipal District is covered by the sub catchments of the Upper Lee and Lower Lee. The Upper Lee system flows between Guagán Barra and the Inniscarra dam. The lower Lee systems runs between Inniscarra dam and the City boundary before entering Lough Mahon.
- 4.7.4 There is a history of frequent floods within the Lee Catchment which cause damage to public road, properties and farmland and result from both fluvial and tidal mechanisms, as represented on [www.floodinfo.ie](http://www.floodinfo.ie).
- 4.7.5 Flooding downstream of Inniscarra Dam is affected by several factors including the additional flows to the River Lee from the Bride, Shournagh and Curraheen catchments which comprise over 30% of the overall River Lee catchment area. Additionally, high tide levels and storm surges affect water levels in the River Lee in the vicinity of Cork City.
- 4.7.6 The River Bride a tributary of the River Lee flows through the western end of Crookstown and along the southern part of Killumney/Ovens and is an important angling river. Some lands in close proximity to the River Bride may be liable to flooding.

### *River Sullane*

- 4.7.1 The River Sullane runs through the mountains between County Cork and County Kerry in southern Ireland. It runs through the centre of Macroom, to which it provides drinking water (and occasionally floods), joins the River Launa one kilometre east of the town, before joining the River Lee a further kilometre east.
- 4.7.2 The River Sullane flows in a North-Easterly direction towards Baile Bhuirne which is on the main Cork/Killarney Road. From Baile Bhuirne it follows close to the main road all the way to Macroom. There are no lakes to be found along its course. There are several white water stretches which make the river ideal for canoeing. It is not until the Sullane reaches the Western outskirts of Macroom that it becomes more sedate and wider. The Sullane is joined by the Larne which flows from the North of Macroom just before it meets the Lee at the Two Mile Bridge.

4.7.3 The Lee is joined by the Bunsheelin River at Béal Átha an Ghaorthaidh before flowing into Lough Allua, a chain of lakes to the east of the village. There is a history of flood events as represented on [Floodinfo.ie](http://Floodinfo.ie). One such flood event in Béal Átha an Ghaorthaidh occurred in November 2009 when torrential rain resulted in the Bunsheelin River bursting its banks at the eastern end of the village. The floodwaters caused extensive damage throughout the village.

#### **Addressing Flood Risk in the Macroom MD**

4.7.4 This section details the approach to Flood Risk Management adopted in the Macroom MD.

4.7.5 As part of the review of the Draft Development Plan, all zoned lands in areas at risk of flooding have been considered in the context of the flood zone maps.

4.7.6 The inclusion of the flood zone information on the settlement maps of the Municipal District is the first step in managing flood risk in the future. The mapping provides for an improved understanding of flood risk issues within the County. The maps indicate the extent of flood zones that should be safeguarded from development and will support the application of the sequential approach, and the justification test as appropriate, in areas where development is proposed.

4.7.7 Flood risk to each settlement has been appraised based on the Flood Zones which cross the settlement boundary and is summarised in Table 33.



| <b>Table 33: Flood Risk by Settlement in the Macroom Municipal District</b> |   |   |
|---|---|---|
| <b>Settlement</b>   | <b>Part of the settlement within Flood Zone A or B?</b> | <b>Comment</b>  |
| <b>Main Settlements</b>   |   |   |
| Macroom   | Yes   | See table below for details of specific flood risk to zoning objective areas.   |
| Millstreet  | Yes   | In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| <b>Key Villages</b>   |   |   |
| Killumney / Ovens   | Yes   | See table below for details of specific flood risk to zoning objective areas.   |
| Béal Átha an Ghaorthaidh  | Yes   | In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Baile Mhic Íre / Baile Bhuirne  | Yes   |   |
| Coachford   | Yes   |   |
| <b>Villages</b>   |   |   |
| Aghabullogue  | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.                                      |
| Aherla  | Yes   | See table below for details of specific flood risk to zoning objective areas.   |
| Ballynora   | Yes   | In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Cloghduv  | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.                                      |
| Clondrohid  | Yes   | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with   |

|                         |     |  |
|-------------------------|-----|--|
|                         |     | regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Courtbrack              | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Crookstown              | Yes |  |
| Inchigeelagh            | Yes |  |
| Kilmurry                | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Cill na Martra          | No  |  |
| Dripsey (Model Village) | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Rylane / Seiscne        | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Stuake / Donoughmore    | No  |  |
| Upper Dripsey           | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |

4.7.8 This table lists the specific zoned sites within the Macroom Municipal District that are located within either Flood Zone A or B and the circumstances of their inclusion.

| Table 34: Macroom Municipal District -Specific Land Use Zonings within Flood Zone A or B |                      |            |   |   |
|--|----------------------|------------|---|---|
| Settlement   | Zoning Objective     | Flood Zone | Comment   | Proposed Draft Amendment  |
| Macroom  | MM-C-02              | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.4.3.3 – 1. It is proposed to make a change to the draft plan to add the * requesting FRA from objective MM-C-02 as it is within the Flood Zone.   |
| Macroom  | MM-B-01              | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.4.3.23 – Amend the settlement map to change part of the current draft plan zoning MM-B-01 to a new MM-RAP-05 (Additional Residential Provision) zoning objective and include new zoning objective.<br><br><b>Final Comment for MM-RAP-05:</b> - Sequential approach to be applied and development to be avoided in Flood Zones A and B. |
| Macroom  | MM-X-01              | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   | 4.4.3.4 – It is proposed to make a change to the draft plan to add the * requesting FRA from objective MM-X-01 as it is within the Flood Zone.  |
| Macroom  | MM-GA-01             | A/B/C      | Appropriate, retain water compatible uses   |   |
| Macroom  | MM-GA-04             | A/B/C      | Appropriate, retain water compatible uses   |   |
| Macroom  | MM-GA-05             | A/B/C      | Appropriate, retain water compatible uses   |   |
| Macroom  | MM-GB1               | A/B/C      | Appropriate, retain water compatible uses and sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Macroom  | MM-GC-03             | A/B/C      | Appropriate, retain water compatible uses   |   |
| Macroom  | MM-GR-02             | A/B/C      | Appropriate, retain water compatible uses   |   |
| Macroom  | MM-U-04 (i) and (ii) | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |   |
| Macroom  | MM-U-03 (i)          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |   |

|                          |          |       |   |  |
|--------------------------|----------|-------|---|--|
| Millstreet               | MS-B-03  | A/B/C | Consider water compatible uses for extent of zoning objective within flood zone.  | 4.4.4.2 - It is proposed to make a change to the draft plan to delete the following area from the MS-B-03 Zoning as it is a flood risk area.<br><br><b>Final Comment:</b> Amended boundary of MS-B-03 zoning objective within Flood Zone C. Not at risk.   |
| Millstreet               | MS-X-02  | A/B/C | Reconsider appropriateness of zoning objective.   | 4.4.4.9 - It is proposed to make a change to the draft plan to remove MS-X-02 as a substantial part of the site is within Flood Zone A.<br><br><b>Final Comment for Existing Residential / Mixed Residential and other uses:</b> Sequential approach to be applied and development to be avoided in Flood Zones A and B. |
| Millstreet               | MS-B-02  | A/B/C | Consider water compatible uses for extent of zoning objective within flood zone.  | 4.4.4.1 - It is proposed to make a change to the draft plan to delete the following area from the MS-B-02 Zoning as it is a flood risk area.<br><br><b>Final Comment:</b> Amended boundary of MS-B-02 zoning objective within Flood Zone C. Not at risk.   |
| Millstreet               | MS-GC-04 | A/B/C | Appropriate, retain water compatible uses   |  |
| Millstreet               | MS-GC-03 | A/B/C | Appropriate, retain water compatible uses   |  |
| Millstreet               | MS-GB-1  | A/B/C | Appropriate, retain water compatible uses and sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Millstreet               | MS-U-03  | A/B/C | Appropriate, retain water compatible uses   | 4.4.4.7 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective MS-U-03 as it is in the Flood Zone.   |
| Killumney                | KO-GC-02 | A/B/C | Appropriate, retain water compatible uses   |  |
| Béal Átha an Ghaorthaidh | GR-01    | A/B/C | Appropriate, retain water compatible uses   |  |
| Béal Átha an Ghaorthaidh | GA-02    | A/B/C | Appropriate, retain water compatible uses   |  |
| Béal Átha an Ghaorthaidh | GR-03    | A/B/C | Appropriate, retain water compatible uses   |  |

|                                  |       |       |   |   |
|----------------------------------|-------|-------|---|---|
| Béal Átha an Ghaorthaidh         | GC-04 | A/B/C | Appropriate, retain water compatible uses   |   |
| Baile Bhuirne/<br>Baile Mhic Íre | U-01  | A/B/C | Appropriate, retain water compatible uses   | 4.4.8.1 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective U-01 as it is in the Flood Zone.   |
| Baile Bhuirne/<br>Baile Mhic Íre | U-02  | A/B/C | Appropriate, retain water compatible uses   | 4.4.8.2 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective U-02 as it is in the Flood Zone.   |
| Baile Bhuirne/<br>Baile Mhic Íre | U-04  | A/B/C | Appropriate, retain water compatible uses   | 4.4.8.3 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective U-04 as it is in the Flood Zone.   |
| Baile Bhuirne/<br>Baile Mhic Íre | GC-03 | A/B/C | Appropriate, retain water compatible uses   | 4.4.8.4 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective GC-03 as it is in the Flood Zone.  |
| Baile Bhuirne/<br>Baile Mhic Íre | X-01  | A/B/C | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Baile Bhuirne/<br>Baile Mhic Íre | GC-01 | A/B/C | Appropriate, retain water compatible uses   |   |
| Coachford                        | GA-01 | A/B/C | Appropriate, retain water compatible uses   |   |
| Coachford                        | GA-03 | A/B/C | Appropriate, retain water compatible uses   |   |
| Aherla                           | GC-02 | A/B/C | Appropriate, retain water compatible uses   | 4.4.12.1 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective GC-02 as it is in the Flood Zone. |
| Ballynora                        | C-01  | A/B/C | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Inchigeelagh                     | GA-04 | A/B/C | Appropriate, retain water compatible uses   |   |
| Inchigeelagh                     | GC-02 | A/B/C | Appropriate, retain water compatible uses   | 4.4.18.2 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective GC-02 as it is in the Flood Zone. |
| Inchigeelagh                     | GR-03 | A/B/C | Appropriate, retain water compatible uses   |   |
| Inchigeelagh                     | U-01  | A/B/C | Appropriate, retain water compatible uses   | 4.4.18.3 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective U-01 as it is in the Flood Zone.  |
| Inchigeelagh                     | U-02  | A/B/C | Appropriate, retain water compatible uses   | 4.4.18.4 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective U-02 as it is in the Flood Zone.  |

|               |       |       |   |   |
|---------------|-------|-------|---|---|
|               |       |       |   |   |
| Upper Dripsey | GR-01 | A/B/C | Appropriate, retain water compatible uses | 4.4.24.2 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective GR-01 as it is in the Flood Zone. |
| Upper Dripsey | GR-02 | A/B/C | Appropriate, retain water compatible uses | 4.4.24.3 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective GR-02 as it is in the Flood Zone. |
| Upper Dripsey | U-01  | A/B/C | Appropriate, retain water compatible uses | 4.4.24.4 - It is proposed to make a change to the draft plan to add the * requesting FRA from objective U-01 as it is in the Flood Zone.  |

## 4.8 Bandon - Kinsale Municipal District

- 4.8.1 The Bandon Kinsale Municipal District straddles three Strategic Planning Areas as defined in the Draft County Development Plan. The Main settlements are both located within the Greater Cork Ring Strategic Planning Area along with most of the lower order settlements. The Key Villages of Courtmacsherry and Timoleague are located in the West Cork Strategic Planning Area and Ballinhassig (at the eastern limits of the Municipal District) is located within the Cork Metropolitan Strategic Planning Area.
- 4.8.2 It is a predominantly rural District that accommodates an extensive network of settlements as follows:
- 4.8.3 Two main towns: Bandon and Kinsale.
- 4.8.4 Six Key Villages: Ballinspittle, Belgooly, Courtmacsherry, Inishannon, Riverstick and Timoleague.
- 4.8.5 Seven Villages: Ballinadee, Ballinhassig, Butlerstown, Crossbarry, Dunderrow, Kilbrittain, Newcestown, and Old Chapel.
- 4.8.6 Two Other Locations: Garrettstown / Garrylucas and Oysterhaven.

### Sources of Flooding

- 4.8.7 Rivers are the primary cause of flooding; with flood events attributed to fluvial sources ranging from the major rivers including the Bandon River, Owenboy River, and River Stick to their smaller tributaries and drains and natural lakes.
- 4.8.8 In the Municipal District, the areas of Kinsale, Courtmacsherry, Oysterhaven and Garrettstown/Garrylucas are or may be susceptible to tidal flooding and coastal erosion due to their coastal locations.

### Rivers in the Bandon Kinsale Municipal District Area

- 4.8.9 There are a number of rivers which flow through settlements in the Municipal District which include Bandon River (Bandon, Innishannon and Kinsale), the River Stick (Riverstick and Belgooly), Owenboy River (Ballinhassig).
- 4.8.10 The River Bandon flows in a valley cut in rocks of the Carboniferous Period (about 360 to 300 million years ago) but covered with glacial drift and alluvium. The river rises in the Maughanaclea Hills in western Cork and flows east to a point west of Kaha Bridge where it turns south, before turning east again to the southeast of Dunmanway. It then flows in a broad fertile valley, with woodlands, to Bandon, and loops in an arc past Innishannon, where it flows southeast and then east, becoming an estuary reaching the sea in Kinsale Harbour.
- 4.8.11 The Lee River catchment covers an area of approximately 2,000 square kilometres. The catchment is defined by the land area drained by the River Lee, its tributaries and Cork Harbour. The Owenboy River is within the sub-catchment of the River Lee and runs through the northern part of the Municipal District passing through Ballinhassig. The Aughnaboy River which is a tributary passes through Crossbarry.

- 4.8.12 Recent significant flood events have included significant inundation of the floodplain along the Bandon River in Bandon Town Centre as represented on [www.floodinfo.ie](http://www.floodinfo.ie). It should be noted that such events occur frequently. The OPW has completed implementing a flood relief scheme in the town. The scheme is a combination of dredging the existing channel by 1.8m downstream of Bandon Weir and the provision of flood defence walls on the south bank upstream and downstream of Bandon Bridge and defence walls and embankments on the northern bank spanning from Bandon Bridge to the wastewater treatment plant. Improvements to the existing flood embankments at the shopping centre are also part of the scheme.
- 4.8.13 In the Bandon Kinsale Municipal District, the area of Kinsale is susceptible to tidal flooding as represented on [www.floodinfo.ie](http://www.floodinfo.ie) and as discussed below merits further study.

#### **Addressing Flood Risk in the Bandon-Kinsale MD**

- 4.8.14 This section details the approach to Flood Risk Management adopted in the Kinsale Bandon MD.
- 4.8.15 As part of the review of the Draft Development Plan, all zoned lands in areas at risk of flooding have been considered in the context of the flood zone maps.
- 4.8.16 The inclusion of the flood zone information on the settlement maps of the Municipal District is the first step in managing flood risk in the future. The mapping provides for an improved understanding of flood risk issues within the County. The maps indicate the extent of flood zones that should be safeguarded from development and will support the application of the sequential approach, and the justification test as appropriate, in areas where development is proposed.
- 4.8.17 Flood risk to each settlement has been appraised based on the Flood Zones which cross the settlement boundary and is summarised in Table 35.



| <b>Table 35: Flood Risk by Settlement in the Bandon Kinsale Municipal District</b> |   |   |
|--|---|---|
| <b>Settlement</b>  | <b>Part of the settlement within Flood Zone A or B?</b> | <b>Comment</b>  |
| <b>Main Settlements</b>  |   |   |
| Bandon   | Yes   | See table below for details of specific flood risk to zoning objective areas. In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Kinsale  | Yes   |   |
| <b>Key Villages</b>  |   |   |
| Ballinspittle  | Yes   | See table below for details of specific flood risk to zoning objective areas. In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Belgooly   | Yes   |   |
| Courtmacsherry   | Yes   | See table below for details of specific flood risk to zoning objective areas. In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. Sea level rise in this coastal location is a particular risk and should be assessed under any site specific flood risk assessment. There is also the potential for coastal erosion and this risk must be assessed along with the impact of coastal flooding on any potential development sites. |
| Inishannon   | Yes   | See table below for details of specific flood risk to zoning objective areas. In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Riverstick   | Yes   |   |
| Timoleague   | Yes   |   |
| <b>Villages</b>  |   |   |

|                |     |  |
|----------------|-----|--|
| Ballinadee     | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Ballinhassig   | Yes |  |
| Ballinascarthy | Yes |  |
| Butlerstown    | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Crossbarry     | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Dunderrow      | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Kilbrittain    | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Newcestown     | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Old Chapel     | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |

| <b>Other Locations</b>   |    |   |
|--------------------------|----|---|
| Garretstown / Garrylucas | No | <p>Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.</p> <p>There is also the potential for coastal erosion and this risk must be assessed along with the impact of coastal flooding on any potential development sites.</p> |

4.8.18 The Table below lists the specific zoned sites within the Bandon Kinsale Municipal District that are located within either Flood Zone A or B and the circumstances of their inclusion.

| <b>Table 36: Bandon Kinsale Municipal District - Specific Land Use Zonings within Flood Zone A or B</b> |                         |                   |   |  |
|---|-------------------------|-------------------|---|--|
| <b>Settlement</b>   | <b>Zoning Objective</b> | <b>Flood Zone</b> | <b>Comment</b>  | <b>Proposed Draft Amendment</b>  |
| Bandon  | BD-T-01                 | A/B/C             | Justification Test required. See the following section of this SFRA                     |  |
| Bandon  | BD-T-02                 | A                 | Justification Test required. See the following section of this SFRA                     |  |
| Bandon  | BD-T-03                 | A                 | Justification Test required. See the following section of this SFRA                     |  |
| Bandon  | BD-T-04                 | B/C               | Sequential approach to be applied and development to be avoided in Flood Zone B.        |  |
| Bandon  | BD-X-02                 | A/B/C             | Justification Test required. See the following section of this SFRA                     |  |
| Bandon  | BD-X-04                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.1.4.15 - Change part of BD-X-04 to Existing Mixed/General Business/Industrial Uses zoning classification.<br>5.1.4.17 - Update Objective BD-X-04 to include retail and amend boundary.<br>5.1.4.18 – Insert symbol to test developments against the DoECLG’s Spatial Planning and National Road Guidelines for Planning Authorities. |
| Bandon  | BD-GA-05                | A/B/C             | Appropriate, retain water compatible uses.  |  |
| Bandon  | BD-GC-07                | A/B/C             | Appropriate, retain water compatible uses.  |  |
| Bandon  | BD-GC-08                | A/B/C             | Appropriate, retain water compatible uses.  |  |
| Bandon  | BD-GR-01                | A/B/C             | Appropriate, retain water compatible uses.  |  |
| Bandon  | BD-GA-02                | A/B/C             | Appropriate, retain water compatible uses.  |  |
| Bandon  | BD-GA-03                | A/B/C             | Appropriate, retain water compatible uses.  |  |
| Bandon  | BD-R-01                 | A/B/C             | Sequential approach to be applied and development to be avoided in Flood Zone A and B.  | 5.1.4.20 - Update Text in BD-R-01 to include biodiversity protection.  |

| Table 36: Bandon Kinsale Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |  |   |
|--|------------------|------------|--|---|
| Settlement   | Zoning Objective | Flood Zone | Comment  | Proposed Draft Amendment  |
| Bandon   | BD-X-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zone A and B. |   |
| Bandon   | BD-U-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zone A and B. |   |
| Bandon   | BD-U-03          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zone A and B. |   |
| Bandon   | BD-U-04          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zone A and B. |   |
| Bandon   |                  |            |  | <p>5.1.4.24 - It is proposed to amend the development boundary of Bandon and include the existing dwellings at either side of the proposed Residential Reserve zoning as Existing Residential, Mixed Residential and Other Uses.</p> <p><b>Final Comment:</b> Sequential approach to be applied and development to be avoided in Flood Zone A and B.</p>  |
| Bandon   |                  |            |  | <p>5.1.4.23 - It is proposed to amend the development boundary of Bandon and zone additional lands within extension as Residential Reserve - BD-RR-02.</p> <p><b>Final Comment:</b> Part of the lands proposed to be zoned as residential which are classified as 'highly vulnerable' by the Flooding Guidelines are at risk of flooding. An initial screening would indicate that a Justification Test would fail by merit of the availability of alternative lands and the site is not within nor adjoining the</p> |

**Table 36: Bandon Kinsale Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective  | Flood Zone | Comment  | Proposed Draft Amendment  |
|------------|---|------------|--|---|
|            |   |            |  | <p>core (see Preliminary Screening below). Access to the site is limited to the south off the R603 which is within flood zone A and B. The N71 to the west is a National Road which limits access potential. Local Road L-2032-0 connects the N71 and the R603. Consider water compatible land use zoning.</p> <p>See Preliminary Screening below and paragraphs 4.91 and 4.94.</p> |
| Kinsale    | KS-T-01   | A/B/C      | Justification Test required. See the following section of this SFRA  |   |
| Kinsale    | KS-U-04   | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.  |   |
| Kinsale    | Existing Mixed / General Business / Industrial adjacent to KS-GC-02           | A          | Justification Test required. See the following section of this SFRA. (Note: Failed Justification Test and Water compatible zoning to be assigned.) | <p>5.1.5.11 - Delete paragraph 1.5.3 and removal of portion of lands currently zoned Existing Mixed / General Business / Industrial from development boundary.</p> <p><b>Final Comment:</b> Proposed GB-1 zoning objective within Flood Zone A. Appropriate, retain water compatible uses.</p>  |
| Kinsale    | Existing Residential/Mixed Residential and Other Uses zoning along waterfront | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.  |   |
| Kinsale    | KS-GC-02  | A/B/C      | Appropriate, retain water compatible uses.   |   |
| Kinsale    | KS-GC-05  | A/B/C      | Appropriate, retain water compatible uses.   |   |

| Table 36: Bandon Kinsale Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |  |   |
|--|------------------|------------|--|---|
| Settlement   | Zoning Objective | Flood Zone | Comment  | Proposed Draft Amendment  |
| Kinsale  | KS-GC-06         | A/B/C      | Appropriate, retain water compatible uses.   |   |
| Kinsale  | KS-GC-13         | A/B/C      | Appropriate, retain water compatible uses.   |   |
| Ballinspittle  | GA-01            | A/B/C      | Appropriate, retain water compatible uses.   | 5.1.6.3 - Remove U-01 in Objective and include lands in GA-01 map extents.  |
| Ballinspittle  | U-01             | A/B/C      | Justification Test required. See the following section of this SFRA. (Note: Failed Justification Test and Water compatible zoning to be assigned.) | 5.1.6.3 - Remove U-01 in Objective and include lands in GA-01 map extents.<br><br><b>Final Comment:</b> Proposed inclusion of lands within GA-01 zoning objective – water compatible.   |
| Belgooly   | GA-01            | A/B/C      | Appropriate, retain water compatible uses.   |   |
| Belgooly   |                  |            |  | 5.1.7.3 – New Green Infrastructure zoning as follows – GC-02 – Passive Open Space. Lands form part of flood plain. *<br><br><b>Final Comment:</b> Proposed GC-02 zoning objective within Flood Zone A. Appropriate, retain water compatible uses. |
| Belgooly   |                  |            |  | 5.1.7.4 - New Green Infrastructure zoning as follows – GC-03 – Passive Open Space. Lands form part of flood plain. *<br><br><b>Final Comment:</b> Proposed GC-03 zoning objective within Flood Zone A. Appropriate, retain water compatible uses. |

**Table 36: Bandon Kinsale Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement     | Zoning Objective | Flood Zone | Comment   | Proposed Draft Amendment  |
|----------------|------------------|------------|---|---|
| Courtmacsherry | U-01             | A/B/C      | Appropriate, retain water compatible uses.  | 5.1.8.3 - Insert Flooding asterisk to Objective U-01<br>5.1.8.4 – Updated wording of amendment to address habitats directive assessment |
| Inishannon     | U-02             | A/B/C      | Appropriate, retain water compatible uses   | 5.1.9.3 - Insert flooding symbol in Objective U-02  |
| Inishannon     | GA-01            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Riverstick     | U-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Ballinadee     | GR-01            | A/B/C      | Appropriate, retain water compatible uses.  |   |
| Ballinadee     | GR-02            | A/B/C      | Appropriate, retain water compatible uses.  |   |
| Ballinhassig   | T-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Kilbrittain    | U-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.1.16.2 - Add asterisk to Objective U-01.  |
| Kilbrittain    | U-02             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.1.16.3 – Add asterisk to Objective U-02.  |
| Old Chapel     | GA-01            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Old Chapel     | GR-02            | A/B/C      | Appropriate, retain water compatible uses   |   |



**Preliminary Screening of sites at risk of flooding for Bandon Kinsale Municipal District**

4.8.19 The table below details the Preliminary Screening carried out to assess the likelihood of a site passing a justification test prior to carrying out further work. This comprises parts 1 and 2 of the Justification Test for development plans as detailed in Box 4.1 of the Flood Risk Guidelines. Regarding proposed zoning BD-RR-02, a full justification test was not carried out as the initial screening stage indicated it was not capable of passing a justification test given the lands are not within or adjoining a core, alternative sites are available, amongst other reasons which are detailed in full in the below table. The SFRA recommends that land at risk of flooding should be excluded from the proposed BD-RR-02 and should be zoned as a water compatible use. Also See paragraphs 4.9.1 – 4.9.4.

| <b>Table 37 - Justification Screening Test for BD-RR-02 within Flood Zone A and / or B (See Appendix A for indicative map)</b>   |   |  |   |   |  |   |   |
|--|---|--|---|---|--|---|---|
| <b>The urban settlement is targeted for growth</b>   | <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b> | <b>Comprises significant previously developed and/ or underutilised lands</b> | <b>Is within or adjoining the core of an established or designated urban settlement</b> | <b>Will be essential in achieving compact and sustainable urban growth</b> | <b>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.</b> | <b>Result / Recommendation for zoning</b>   |
| Bandon is a Main Town in the Bandon Kinsale Municipal District. The town performs an important service function to a wider hinterland as well as being the key gateway to West Cork. It is targeted for moderate growth. | No – the element of the site at risk of flooding could be removed from the site boundary.   | No - There are suitable alternative lands available.   | No. This is a greenfield site.  | The site is not within or adjoining the core of Bandon Town Centre.                     | This site would not contribute to achieving compact growth.                | There are suitable alternative lands available.   | This site would not pass a Justification test. Consider water compatible zoning for the site. |

## Justification Tests for Bandon Kinsale Municipal District

4.8.20 The table below details the Justification Tests for the areas identified above as being within Flood Zone A and B, and where the sequential approach and avoidance cannot be achieved.

| <b>Table 38: Bandon Justification Tests</b>   |   |  |  |  |
|---|---|--|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Bandon BD-T-01</b>   | <b>Bandon BD-T-02</b>  | <b>Bandon BD-T-03</b>  | <b>Bandon BD-X-02</b>  |
| <b>The urban settlement is targeted for growth</b>  | Bandon is a Main Town in the Bandon Kinsale Municipal District. The town performs an important service function to a wider hinterland as well as being the key gateway to West Cork. It is targeted for moderate growth.  | Bandon is a Main Town in the Bandon Kinsale Municipal District. The town performs an important service function to a wider hinterland as well as being the key gateway to West Cork. It is targeted for moderate growth. | Bandon is a Main Town in the Bandon Kinsale Municipal District. The town performs an important service function to a wider hinterland as well as being the key gateway to West Cork. It is targeted for moderate growth. | Bandon is a Main Town in the Bandon Kinsale Municipal District. The town performs an important service function to a wider hinterland as well as being the key gateway to West Cork. It is targeted for moderate growth. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for town centre uses to serve visiting members of the public and prioritises the development of the Riverside Way Area into a new urban quarter. | The zoning is required to facilitate expansion of the town centre and give guidance for the overall redevelopment of this landmark site on approach to the town centre.  | The zoning is required to facilitate expansion of the town centre.   | The zoning is required to recognise this site as a special opportunity site for the Allman Quarter Mixed Use Opportunity Site for a new mixed use business, hotel and residential area adjacent to the town centre.      |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as a primary location for retail and other mixed uses.   | The site is essential to facilitate regeneration and expansion of the town centre and connect to the existing Graham Norton Walkway.   | The site is essential to facilitate regeneration and expansion of the town centre.   | The site is essential to facilitate the regeneration and consolidation of the settlement.  |
| <b>Comprises significant</b>  | There are significant underutilised sites in the  | There are underutilised lands in the zone.   | The site contains significant underutilised lands.   | The site has significant underutilised lands.  |

|   |   |   |   |   |
|---|---|---|---|---|
| <b>previously developed and/ or under utilised lands</b>  | zone. The zoning also contains an identified regeneration opportunity in BD-RA-01.  |   |   |   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.   | The site is adjacent to the core of Bandon.   | Site is located adjacent to the existing retail core.   | Site is located close to the core.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.   | Redevelopment of this underutilised site provides an opportunity to achieve compact growth.   | Redevelopment provides an opportunity to achieve compact growth and sequentially represents the best opportunity for development.   | Development provides an opportunity to develop an underutilised site and consolidate the settlement network with a mixed use development which sequentially represents a good opportunity for development.  |
| <b>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.</b> | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.  | There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the expansion of the town centre.   | There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the coherent and sequential expansion of the town centre.   | There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the coherent and sequential consolidation of the settlement.  |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The area benefits from the OPW flood relief scheme, which is substantially completed (2020). New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of residual risks and proposes | The area benefits from the OPW flood relief scheme, which is substantially completed (2020). New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of residual risks and proposes appropriate | The area benefits from the OPW flood relief scheme, which is substantially completed (2020). New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of residual risks and proposes | The area benefits from the OPW flood relief scheme, which is substantially completed (2020). New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of residual risks and proposes appropriate |

|                                  |   |   |   |   |
|----------------------------------|---|---|---|---|
|                                  | appropriate mitigation. Highly vulnerable development should not be located at ground flood level in these areas. | mitigation. Highly vulnerable development should not be located at ground flood level in these areas. | appropriate mitigation. Highly vulnerable development should not be located at ground flood level in these areas. | mitigation. Highly vulnerable development should not be located at ground flood level in these areas. |
| <b>Result</b>                    | Pass  | Pass  | Pass  | Pass  |
| <b>Recommendation for zoning</b> | Retain Zoning Objective   | Retain Zoning Objective   | Retain Zoning Objective   | Retain Zoning Objective   |

| <b>Table 39: Kinsale Justification Tests</b>  |  |
|---|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Kinsale<br/>KS-T-01</b>   |
| <b>The urban settlement is targeted for growth</b>  | Kinsale is a Main Town in the Bandon Kinsale Municipal District and is also a 'Ring Town' in the network of ring towns around the Cork Metropolitan Area. Kinsale is a scenic, coastal town with special heritage, marine and tourism functions. The settlement is targeted for small scale growth to consolidate the town and limit its expansion in order to respect the town's architectural heritage and unique battlefield landscape. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for redevelopment and consolidation of the town centre.  |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as the primary location for retail and other mixed uses   |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised and sites in the zone including a regeneration site KS-RA-01 in Flood Zone A.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.  |
| <b>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.</b>     | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | Flood risk in Kinsale is extensive, and from tidal sources. It is recommended that a detailed assessment of risks is undertaken prior to extensive redevelopment being permitted, particularly as climate change risks have the potential to be significant. Until risk are better understood, development within Flood Zone A and B should be limited to Section 5.28.  |
| <b>Result</b>   | Pass but risks need to be better understood  |
| <b>Recommendation for zoning</b>  | Retain zoning objective to reflect existing land use.  |

| <b>Table 40: Ballinspittle Justification Tests</b>  |  |
|---|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Ballinspittle<br/>BS-U-01</b>   |
| <b>The urban settlement is targeted for growth</b>  | Ballinspittle is a Key Village in the Bandon Kinsale Municipal District. It is a rural settlement targeted for small scale growth to consolidate the village.  |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | Upgrading of foul sewers and provision of a new Wastewater Treatment Plant is required in order to accommodate further growth in the village.  |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to provide a new Wastewater treatment Plan for the village.  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | The site is a predominately a greenfield site.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is located within the settlement boundary.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The zoning will provide for essential wastewater infrastructure to serve the village.  |
| <b>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.</b>     | There are alternative lands in areas at no/lower risk of flooding within the settlement boundary.  |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The site lies partly within Flood Zones A, B and C. Although considered highly vulnerable, WWTP by their nature are often located alongside watercourses, and therefore in areas at risk of flooding. This creates a risk of flooding both to the plant and arising from the plant if contaminants enter the flood waters. As there are lower risk lands available, the sequential approach should be applied, and an alternative site selected rather than moving to mitigate flood risks at this location. |
| <b>Result</b>   | Fail   |
| <b>Recommendation for zoning</b>  | Water compatible zoning to be assigned.  |

## 4.9 West Cork Municipal District

- 4.9.1 The West Cork Municipal District lies entirely within the West Strategic Planning Area as defined in the Draft County Development Plan. It is a predominantly rural District that accommodates an extensive network of settlements as follows:
- 4.9.2 Six main towns: Clonakilty, Bantry, Skibbereen, Dunmanway, Castletownbere and Schull.
- 4.9.3 Nine Key Villages: Ballineen / Enniskeane, Baltimore, Ballydehob, Drimoleague, Durrus, Glengarriff, Leap, Rosscarbery and Union Hall
- 4.9.4 West Cork Island Communities: Bere Island, Durse Island, Heir Island, Long Island, Oileán Chléire, Sherkin Island and Whiddy Island
- 4.9.5 Fifteen Villages: Allihies, Ahakista, Ardfield, Ardgroom, Ballinascarthy, Ballylickey, Castletownshend, Crookhaven, Drinagh, Eyeries, Glandore, Goleen, Kealkill, Kilcrohane and Shannonvale.
- 4.9.6 Other Locations: Barleycove, Inchydoney, Owenahincha and Tragumna.

### Sources of Flooding

- 4.9.7 Rivers are the primary cause of flooding; with flood events attributed to fluvial sources ranging from the major rivers, including the Feagle River, the Mealagh River, the Ilen River and the Bandon River to the smaller tributaries, drains and natural lakes.
- 4.9.8 In the Municipal District, the areas of Clonakilty, Baltimore, Rosscarbery, Union Hall, Inchydoney, Owenahincha, Bantry, Castletownbere, Schull, Ballydehob, Durrus, Glengarriff, the West Cork Islands, Ahakista, Ballylickey, Crookhaven, Goleen, Kealkill, Adrigole and Barleycove are or may be susceptible to tidal flooding and coastal erosion due to their coastal locations.
- 4.9.9 It should be noted that flood events occur frequently within the Municipal District as evidenced by the number of past flood events, both single and recurring events, represented on Floodinfo.ie. These include but are not limited to flood events at Clonakilty, Bantry, and Skibbereen.

### Rivers in the West Cork Municipal District Area.

- 4.9.10 There are a number of rivers which flow through settlements in the MD area which include; Feage River (Clonakilty), Mealagh River (Bantry), Ilen River (Skibbereen), and the Bandon River (Dunmanway).
- 4.9.11 The Bandon River forms to the north of Dunmanway and flows to the east of Dunmanway and its course continues to the south of Ballineen / Enniskeane and to Bandon Town. The River represents a significant flood risk to parts of these settlements in addition to the wider rural area and river floodplain. The Ilen River which

forms to the north of Skibbereen and through a series of tributaries which include the Ruagagh and Saivnose flows south to Skibbereen town. The River represents a significant flood risk to parts of Skibbereen town centre. The Feagle River which forms to the west of Clonakilty Town flows on an eastward path through the town and on to Clonakilty Bay. The River represents a significant flood risk to parts of Clonakilty town centre.

### **Addressing Flood Risk in the West Cork MD**

- 4.9.12 This section details the approach to Flood Risk Management adopted in the West Cork MD.
- 4.9.13 As part of the review of the Draft Development Plan, all zoned lands in areas at risk of flooding have been considered in the context of the flood zone maps.
- 4.9.14 The inclusion of the flood zone information on the settlement maps of the Municipal District is the first step in managing flood risk in the future. The mapping provides for an improved understanding of flood risk issues within the County. The maps indicate the extent of flood zones that should be safeguarded from development and will support the application of the sequential approach, and the justification test as appropriate, in areas where development is proposed.
- 4.9.15 Flood risk to each settlement has been appraised based on the Flood Zones which cross the settlement boundary and is summarised in Table 41.



| <b>Table 41: Flood Risk by Settlement in the West Cork Municipal District</b> |   |   |
|---|---|---|
| <b>Settlement</b>   | <b>Part of the settlement within Flood Zone A or B?</b> | <b>Comment</b>  |
| <b>Main Settlements</b>   |   |   |
| Clonakilty  | Yes   | See table below for details of specific flood risk to zoning objective areas. In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Bantry  | Yes   |   |
| Skibbereen  | Yes   |   |
| Dunmanway   | Yes   |   |
| Castletownbere  | Yes   |   |
| Schull  | Yes   |   |
| <b>Key Villages</b>   |   |   |
| Ballineen / Enniskeane  | Yes   | See table below for details of specific flood risk to zoning objective areas. In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Baltimore   | No  | In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Ballydehob  | Yes   | See table below for details of specific flood risk to zoning objective areas. In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Drimoleague   | Yes   |   |
| Durrus  | Yes   |   |
| Glengarriff   | Yes   |   |
| Leap  | Yes   |   |
| Rosscarbery   | Yes   |   |
| Union Hall  | Yes   |   |
| <b>West Cork Island Communities</b>   |   |   |
| Bere Island   | No  | In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Dursey Island   | Yes   | See table below for details of specific flood risk to zoning objective areas.   |

|                 |     |  |
|-----------------|-----|--|
|                 |     | In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.  |
| Heir Island     | No  | In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.  |
| Long Island     | No  |  |
| Oiléan Chléire  | No  |  |
| Sherkin Island  | No  |  |
| Whiddy Island   | No  |  |
| <b>Villages</b> |     |  |
| Allihies        | No  | In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.  |
| Ahakista        | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Ardfield        | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |
| Ardgroom        | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Ballinascarthy  | Yes |  |
| Ballylickey     | Yes |  |
| Castletownshend | Yes |  |
| Crookhaven      | Yes |  |
| Drinagh         | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |

|                        |     |  |
|------------------------|-----|--|
| Eyeries                | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Glandore               | Yes |  |
| Goleen                 | Yes |  |
| Kealkill               | Yes |  |
| Kilcrohane             | Yes |  |
| Shannonvale            | Yes |  |
| <b>Other Locations</b> |     |  |
| Barleycove             | Yes | See table below for details of specific flood risk to zoning objective areas.<br>In areas outside those listed below, proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed. |
| Inchydoney             | Yes |  |
| Owenahincha            | Yes |  |
| Tragumna               | No  | Proposals for development should follow the Planning System and Flood Risk Management Guidelines, and the approach detailed in this SFRA with regard to the consideration of all sources of flood risk. The Plan Making Justification Test has not been applied, so should fluvial flood risk be identified (such as from unmapped watercourses), the avoidance approach must be followed.   |

4.9.16 The Table below lists the specific zoned sites within the West Cork Municipal District that are located within either Flood Zone A or B and the circumstances of their inclusion.

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|---|------------------|------------|---|---|
| Settlement  | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment  |
| Clonakilty  | CK-AG-04         | A/B/C      | Appropriate, retain water compatible uses   | 5.2.5.3 – It is proposed to make a modification to the zoning map of Clonakilty by omitting a portion of the lands zoned CK-AG-04 and by inserting a new green infrastructure zoning CK-GC-06.  |
| Clonakilty  | CK-GB1           | A/B/C      | Appropriate, retain water compatible uses   | 5.2.5.2 - It is proposed to amend the development boundary of Clonakilty by omitting an area within the Existing Residential/Mixed Residential and Other Uses on the western boundary, and by zoning this area as the Greenbelt GB 1-1. |
| Clonakilty  | CK-GB2           | A/B/C      | Appropriate, retain water compatible uses   |   |
| Clonakilty  | CK-GC-01         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Clonakilty  | CK-I-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Clonakilty  | CK-R-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Clonakilty  | CK-T-01          | A/B/C      | Justification Test required. See the following section of this SFRA                     |   |
| Clonakilty  | CK-T-02          | A/B/C      | Justification Test required. See the following section of this SFRA                     |   |
| Clonakilty  | CK-T-04          | B/C        | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.2.49.1 - It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.                          |
| Clonakilty  | CK-U-02          | A/B/C      | Justification Test required. See the following section of this SFRA                     | 5.2.49.1 – It is proposed to make a change to the draft plan to add the *   |

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |   |            |   |  |
|---|---|------------|---|--|
| Settlement  | Zoning Objective  | Flood Zone | Comments                                  | Proposed Draft Amendment   |
|   |   |            |   | requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.   |
| Clonakilty  | CK-U-05   | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.   |
| Clonakilty  | Existing Residential/Mixed Residential and Other Uses on the western boundary (1) | A/B/C      | Consider water compatible uses            | 5.2.5.2 - It is proposed to amend the development boundary of Clonakilty by omitting an area within the Existing Residential/Mixed Residential and Other Uses on the western boundary, and by zoning this area as the Greenbelt GB 1-1.<br><br><b>Final Comment:</b> Proposed GB-1 zoning objective within Flood Zone A would be water compatible. |
| Clonakilty  | Existing Residential/Mixed Residential and Other Uses (2)                         | A/B/C      | Consider water compatible uses            | 5.2.5.4 - It is proposed to make a modification to the zoning map of Clonakilty by inserting a new green infrastructure zoning CK-GC-07.<br><b>Final Comment:</b> Proposed CK-GC-07 zoning objective would be water compatible.  |
| Clonakilty  |   | A/B/C      |   | 5.2.5.7 – It is proposed to make a modification to the zoning map of Clonakilty by inserting a new green infrastructure zoning CK-GA-08.   |

**Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective  | Flood Zone | Comments   | Proposed Draft Amendment   |
|------------|---|------------|--|--|
|            |   |            |  | <b>Final Comment:</b> Appropriate, retain water compatible uses.   |
| Clonakilty | Existing Residential/Mixed Residential and Other Uses (3) | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and only less vulnerable development in Flood Zone B. Climate change risks to be investigated in the site-specific FRA. |  |
| Clonakilty | Existing Residential/Mixed Residential and Other Uses (4) | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.  |  |
| Clonakilty | Existing Residential/Mixed Residential and Other Uses (5) | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.  |  |
| Clonakilty | GB2 – to the north  | A/B/C      | Appropriate, retain water compatible uses  |  |
| Clonakilty |   | A/B/C      |  | 5.2.5.4 – Amend zoning map to include new infrastructure zoning CK-GC-07.<br><br><b>Final Comment:</b> Appropriate, retain water compatible uses.  |
| Bantry     | BT-AG-01  | A/B/C      | Appropriate, retain water compatible uses  | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.<br><br>5.2.6.4 – It is proposed to make a modification to the zoning map for Bantry by extending the BT-GR-05 to the west to incorporate a portion of the BT-AG-01 lands. |

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|---|------------------|------------|---|--|
| Settlement  | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment   |
|   |                  |            |   | <p><b>Final Comment:</b> Appropriate, retain water compatible uses.</p> <p>*Also see amendment 5.2.6.27</p>  |
| Bantry  |                  |            |   | <p>5.2.6.27 - delete BT-AG-01 and replace with new zoning objectives BT-R-0X, BT-RR-01, Existing Residential / Mixed Residential and Other Uses Zone, BT-GI-11, including Medium B residential reserve and Medium B new residential, green infrastructure, and existing residential zonings.</p> <p><b>Final Comment:</b> Proposed Green Infrastructure zonings are appropriate, retain water compatible uses. Other proposed uses are located in Flood Zone C and are not at risk.</p> <p>*Also see amendment 5.2.6.4</p> |
| Bantry  | BT-B-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Bantry  | BT-B-03          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.   |
| Bantry  | BT-B-04          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.   |

**Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment  |
|------------|------------------|------------|---|---|
| Bantry     | BT-B-05          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.  |
| Bantry     | BT-GB1           | A/B/C      | Appropriate, retain water compatible uses   |   |
| Bantry     | BT-GB2           | A/B/C      | Appropriate, retain water compatible uses   |   |
| Bantry     | BT-GC-01         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Bantry     | BT-GC-07         | A/B/C      | Appropriate, retain water compatible uses   | 5.2.6.22 - Add new paragraphs after paragraph 2.6.67 under the Heading Bantry House regarding Green Infrastructure zoning objective BT-GC-07.<br><br><b>Final Comment:</b> Apply sequential approach and avoid development in Flood Zone A and B for any proposed residential uses.   |
| Bantry     | BT-GR-03         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Bantry     | BT-GR-05         | A/B/C      | Appropriate, retain water compatible uses   | 5.2.6.4 – It is proposed to make a modification to the zoning map for Bantry by extending the BT-GR-05 to the west to incorporate a portion of the BT-AG-01 lands as shown below.<br><br>5.2.6.5 – It is proposed to make a modification to the zoning map for Bantry by extending the BT-GR-05 to the east to incorporate lands zoned Existing Residential/Mixed Residential and Other Uses<br>Needs * |



| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|---|------------------|------------|---|--|
| Settlement  | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment   |
|   |                  |            |   | <b>Final Comment:</b> Appropriate, retain water compatible uses  |
| Bantry  | BT-R-03          | A/B/C      | Consider water compatible uses for extent of zoning at risk of flooding.                | 5.2.6.6 – Amend BT-R-03 to include part as Green Infrastructure zoning BT-GC-10 and classify parts as residential additional provision.<br><br><b>Final Comment:</b> Sequential approach to be applied and development to be avoided in Flood Zones A and B. |
| Bantry  |                  |            |   | 5.2.6.6 – Amend BT-R-03 to include part as Green Infrastructure zoning BT-GC-10 and classify parts as residential additional provision.<br><br>Final Comment: BT-GC-10 - Appropriate, retain water compatible uses.  |
| Bantry  | BT-R-04          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.   |
| Bantry  | BT-T-01          | A/B/C      | Justification Test required. See the following section of this SFRA                     |  |
| Bantry  | BT-T-02          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Bantry  | BT-X-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.   |

**Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective  | Flood Zone | Comments  | Proposed Draft Amendment   |
|------------|---|------------|---|--|
| Bantry     | BT-X-02   | A/B/C      |   | 5.2.6.7 – Amend BT-X-02 to include part as new town centre zoning BT-TC-03.<br><br><b>Final Comment:</b> Amended BT-X-02 – appropriate, retain water compatible uses.  |
| Bantry     |   |            |   | 5.2.6.7 – Amend BT-X-02 to include part as new town centre zoning BT-TC-03.<br><br><b>Final Comment:</b> Justification test required for BT-T-03 (Flood Zone A/B/C). See Table below.                            |
| Bantry     | Existing Mixed / General Business / Industrial (1)                                  | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Bantry     | Existing Residential/Mixed Residential and Other Uses zoning - east of BT-GR-05 (2) | A/B        | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Bantry     | Existing Residential/Mixed Residential and Other Uses zoning - west of BT-AG-01 (3) | A/B/C      | Consider water compatible uses.   | Final Comment: An amendment considering water compatible uses was not brought forward in this instance. In light of this sequential approach to be applied and development to be avoided in Flood Zones A and B. |
| Bantry     | Existing Residential/Mixed Residential and Other Uses zoning - west of BT-GC-07 (4) | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|---|------------------|------------|---|---|
| Settlement  | Zoning Objective | Flood Zone | Comments                                  | Proposed Draft Amendment  |
| Skibbereen  | SK-AG-01         | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.  |
| Skibbereen  | SK-GA-02         | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.  |
| Skibbereen  | SK-GA-09         | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.  |
| Skibbereen  | SK-GB1           | A/B/C      | Appropriate, retain water compatible uses | 5.2.7.2 - It is proposed to amend the development boundary of Skibbereen by omitting an area within with Existing Residential/Mixed Residential and Other Uses and Flood Zone A on the north western boundary and zoning this area as the Greenbelt GB 1-1.<br><br>5.2.7.4 - It is proposed to amend the development boundary of Skibbereen by omitting an area within the Existing Residential/Mixed Residential and Other Uses and Flood Zone A on the southern eastern boundary and by zoning this area as the Greenbelt GB 1-1. |

**Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective | Flood Zone | Comments                                  | Proposed Draft Amendment   |
|------------|------------------|------------|---|--|
| Skibbereen | SK-GB2           | A/B/C      | Appropriate, retain water compatible uses |  |
| Skibbereen | SK-GC-13         | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Skibbereen | SK-GC-14         | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Skibbereen | SK-GR-01         | A/B/C      | Appropriate, retain water compatible uses |  |
| Skibbereen | SK-GR-04         | A/B/C      | Appropriate, retain water compatible uses |  |
| Skibbereen | SK-GR-05         | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Skibbereen | SK-GR-06         | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Skibbereen | SK-GR-07         | A/B/C      | Appropriate, retain water compatible uses | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                            |            |   |  |
|---|----------------------------|------------|---|--|
| Settlement  | Zoning Objective           | Flood Zone | Comments  | Proposed Draft Amendment   |
| Skibbereen  | SK-GR-08                   | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Skibbereen  | SK-GR-10                   | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Skibbereen  | SK-GR-12                   | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Skibbereen  | SK-I-01                    | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Skibbereen  | SK-I-02                    | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Skibbereen  | SK-R-01                    | B/C        | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Skibbereen  | SK-R-06                    | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. | 5.2.49.1 – It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Skibbereen  | SK-T-01                    | A/B/C      | Justification Test required. See the following section of this SFRA                     |  |
| Skibbereen  | Existing Residential/Mixed | A/B/C      | Consider water compatible uses.   | 5.2.7.1 – It is proposed to make a modification to the zoning map and text for Skibbereen by omitting a portion of   |

Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B

| Settlement | Zoning Objective   | Flood Zone | Comments  | Proposed Draft Amendment  |
|------------|--|------------|---|---|
|            | Residential and Other Uses zoning - north of GC-14 (1)                           |            |   | the lands zoned Existing Residential/Mixed Residential and Other Uses and by creating a new green infrastructure zoning SK-GC-17.<br><br><b>Final Comment:</b> Sequential approach to be applied to land remaining within development boundary and development to be avoided in Flood Zones A and B.  |
| Skibbereen |  | A/B/C      |   | 5.2.7.1 – It is proposed to make a modification to the zoning map and text for Skibbereen by omitting a portion of the lands zoned Existing Residential/Mixed Residential and Other Uses and by creating a new green infrastructure zoning SK-GC-17. SK-GC-17 Open Space to be protected from development enhancing the visual amenities of the area. Site forms part of a flood risk zone *<br><br><b>Final Comment:</b> Proposed zoning objective SK-GC-17 – appropriate, retain water compatible uses. |
| Skibbereen | Existing Residential/Mixed Residential and Other Uses zoning - Marsh Road (2)    | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Skibbereen | Existing Residential/Mixed Residential and Other Uses zoning - north of AG01 (4) | A/B/C      | Consider water compatible uses.   | 5.2.7.6 - It is proposed to make a modification to the zoning map and text for Skibbereen by omitting a portion of the lands zoned Existing Residential/Mixed Residential and   |

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |   |            |   |   |
|---|---|------------|---|---|
| Settlement  | Zoning Objective  | Flood Zone | Comments  | Proposed Draft Amendment  |
|   |   |            |   | Other Uses and by creating a new green infrastructure zoning SK-GC-19.<br><br><b>Final Comment:</b> Existing Residential / Mixed Residential and Other Uses zoning - Sequential approach to be applied and development to be avoided in Flood Zones A and B.  |
| Skibbereen  |   | A/B/C      |   | 5.2.7.6 - It is proposed to make a modification to the zoning map and text for Skibbereen by omitting a portion of the lands zoned Existing Residential/Mixed Residential and Other Uses and by creating a new green infrastructure zoning SK-GC-19.<br><br><b>Final Comment:</b> Proposed zoning objective SK-GC-19 - Appropriate, retain water compatible uses. |
| Skibbereen  | Existing Residential/Mixed Residential and Other Uses zoning - Southern bank of Ilen River Corridor (5) | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Skibbereen  | Existing Residential/Mixed Residential and Other Uses zoning - West of GC-13 (6)                        | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Skibbereen  | Existing Residential/Mixed  | A/B/C      | Consider water compatible uses.   | 5.2.7.2 - It is proposed to amend the development boundary of Skibbereen by omitting an area within with Existing   |

**Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective  | Flood Zone | Comments  | Proposed Draft Amendment   |
|------------|---|------------|---|--|
|            | Residential and Other Uses zoning - west of Marsh Road (7)                        |            |   | Residential/Mixed Residential and Other Uses and Flood Zone A on the north western boundary and zoning this area as the Greenbelt GB 1-1.<br><br><b>Final Comment:</b> Existing Residential/Mixed Residential and Other Uses zoning - Sequential approach to be applied and development to be avoided in Flood Zones A and B.  |
| Skibbereen | Existing Residential/Mixed Residential and Other Uses zoning - West of T01 (8)    | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Skibbereen | Existing Residential/Mixed Residential and Other Uses zoning - North of AG-01 (9) | A/B/C      | Consider water compatible uses.   | 5.2.7.4 - It is proposed to amend the development boundary of Skibbereen by omitting an area within the Existing Residential/Mixed Residential and Other Uses and Flood Zone A on the southern eastern boundary and by zoning this area as the Greenbelt GB 1-1.<br><br><b>Final Comment:</b> Existing Residential/Mixed Residential and Other Uses zoning - Sequential approach to be applied and development to be avoided in Flood Zones A and B. |
| Skibbereen | Existing Residential/Mixed Residential and Other Uses zoning                      | A/B/C      | Consider water compatible uses.   | 5.2.7.5 - It is proposed to make a modification to the zoning map and text for Skibbereen by omitting a portion of the lands zoned Existing  |



| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |   |            |                                 |   |
|---|---|------------|---------------------------------|---|
| Settlement  | Zoning Objective  | Flood Zone | Comments                        | Proposed Draft Amendment  |
|   | (10)  |            |                                 | Residential/Mixed Residential and Other Uses and by creating a new green infrastructure zoning SK-GC-18.<br><br><b>Final Comment:</b> Existing Residential/Mixed Residential and Other Uses zoning - Sequential approach to be applied and development to be avoided in Flood Zones A and B.  |
| Skibbereen  |   | A/B/C      |                                 | 5.2.7.5 - It is proposed to make a modification to the zoning map and text for Skibbereen by omitting a portion of the lands zoned Existing Residential/Mixed Residential and Other Uses and by creating a new green infrastructure zoning SK-GC-18.<br><br><b>Final Comment:</b> Proposed zoning objective SK-GC-18 - Appropriate, retain water compatible uses. |
| Skibbereen  | Existing Residential/Mixed Residential and Other Uses zoning (11) | A/B/C      | Consider water compatible uses. | 5.2.7.3 - It is proposed to amend the development boundary of Skibbereen by omitting an area within with Existing Residential/Mixed Residential and Other Uses and Flood Zone A on the north western boundary and by zoning this area as the Greenbelt GB 1-1.<br><br><b>Final Comment:</b> Area at risk of flooding now zoned as water compatible.               |
| Skibbereen  |   |            |                                 | 5.2.7.24 - Amend the settlement map for Skibbereen to include a second indicative potential route for the proposed Gortnaclohy relief road, and   |

**Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment  |
|------------|------------------|------------|---|---|
|            |                  |            |   | to amend the text of paragraph 2.7.60 and Zoning Objective SK-U-02<br><br><b>Final Comment:</b> Apply sequential approach at project stage and avoid development in Flood Zone A and B.   |
| Dunmanway  | DY-GB1           | A/B/C      | Appropriate, retain water compatible uses   |   |
| Dunmanway  | DY-GC-01         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Dunmanway  | DY-GR-02         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Dunmanway  | DY-GR-03         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Dunmanway  | DY-GR-08         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Dunmanway  | DY-GR-09         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Dunmanway  | DY-GR-10         | A/B/C      | Appropriate, retain water compatible uses   | 5.2.8.6 - It is proposed to make a modification to the zoning map and text for Dunmanway by omitting a portion of the lands zoned Existing Residential/Mixed Residential and Other Uses and by incorporating this portion of lands into the specific zoning objective DY-GR-10. |
| Dunmanway  | DY-T-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Dunmanway  | DY-U-03          | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 - It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.  |
| Dunmanway  | DY-U-04          | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 - It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the  |

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |  |            |   |  |
|---|--|------------|---|--|
| Settlement  | Zoning Objective   | Flood Zone | Comments  | Proposed Draft Amendment   |
|   |  |            |   | Municipal District as these sites lie within the Flood Zones.  |
| Dunmanway   | DY-U-05  | A/B/C      | Appropriate, retain water compatible uses   | 5.2.8.13 - It is proposed to make a modification to the zoning map and text for Dunmanway by inserting new text in relation to the proposed walkways in Dunmanway.   |
| Dunmanway   | Existing Residential/Mixed Residential and Other Uses zoning (1) | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Dunmanway   | Existing Residential/Mixed Residential and Other Uses zoning (2) | A/B/C      | Consider water compatible uses.   | 5.2.8.6 - It is proposed to make a modification to the zoning map and text for Dunmanway by omitting a portion of the lands zoned Existing Residential/Mixed Residential and Other Uses and by incorporating this portion of lands into the specific zoning objective DY-GR-10.<br><br><b>Final Comment:</b> Area at risk of flooding now zoned as water compatible. |
| Dunmanway   | Existing Residential/Mixed Residential and Other Uses zoning (3) | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Castletownbere  | CR-AG-01   | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 - It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.   |

**Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement     | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment  |
|----------------|------------------|------------|---|---|
| Castletownbere | CR-C-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Castletownbere | CR-GB1           | A/B/C      | Appropriate, retain water compatible uses   |   |
| Castletownbere | CR-GB2           | A/B/C      | Appropriate, retain water compatible uses   |   |
| Castletownbere | CR-GR-01         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Castletownbere | CR-GR-02         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Castletownbere | CR-GR-03         | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 - It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.  |
| Castletownbere | CR-I-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Castletownbere | CR-T-01          | A/B/C      | Justification Test required. See the following section of this SFRA                     |   |
| Castletownbere | CR-U-10          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Castletownbere | CR-X-01          | A/B/C      | Appropriate, retain water compatible uses   |   |
| Schull         | SC-B-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Schull         | SC-C-01          | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |   |
| Schull         | SC-GB1           | A/B/C      | Appropriate, retain water compatible uses   |   |
| Schull         | SC-GR-01         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Schull         | SC-GR-02         | A/B/C      | Appropriate, retain water compatible uses   |   |
| Schull         | SC-GR-03         | A/B/C      | Appropriate, retain water compatible uses   | 5.2.10.1 - It is proposed to make a modification to the zoning map and text for Schull by omitting a portion of the lands zoned Existing Residential/Mixed Residential and Other Uses and by incorporating this portion of lands into the specific zoning objective SC-GR-03. |

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |  |
|---|------------------|------------|---|--|
| Settlement  | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment   |
| Schull  | SC-T-01          | A/B/C      | Justification Test required. See the following section of this SFRA                     |  |
| Schull  | SC-T-02          | B/C        | Justification Test required. See the following section of this SFRA                     |  |
| Ballineen-Enniskeane  | GA-01            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Ballydehob  | GC-01(a)         | A/B/C      | Appropriate, retain water compatible uses   |  |
| Ballydehob  | GC-01(b)         | A/B/C      | Appropriate, retain water compatible uses   |  |
|   |                  |            |   | 5.2.15.2 - It is proposed to make a change to the draft plan by deleting the Business zoning in Drimoleague.   |
| Drimoleague   | B-02             | A/B/C      | Consider principle of zoning objective within the flood zone.                           | <b>Final Comment:</b> Sequential approach to be applied to land remaining within development boundary and development to be avoided in Flood Zones A and B.  |
| Durrus  | GC-02            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Durrus  | GR-01            | A/B/C      | Appropriate, retain water compatible uses   |  |
|   |                  |            |   | 5.2.49.1 - It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones. |
| Durrus  | U-05             | A/B        | Appropriate, retain water compatible uses   |  |
| Glengarriff   | GC-01            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Glengarriff   | GC-02            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Glengarriff   | X-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B. |  |
| Rosscarbery   | GA-02            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Rosscarbery   | GA-03            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Rosscarbery   | GR-04            | A/B/C      | Appropriate, retain water compatible uses   |  |
| Union Hall  | U-01             | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 - It is proposed to make a change to the draft plan to add the *  |

**Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B**

| Settlement  | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment  |
|-------------|------------------|------------|---|---|
|             |                  |            |   | requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.  |
| Ahakista    | B-01             | A/B/C      | Sequential approach to be applied and only water compatible uses permitted  |   |
| Ahakista    | GC-02            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Ardgroom    | GR-01            | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 - It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.  |
| Ballylickey | GR-01            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Ballylickey | U-02             | A/B/C      | Appropriate, retain water compatible uses   |   |
| Goleen      | X-01             | A/B/C      | Consider principle of zoning objective within the flood zone.   | 5.2.41.2 - It is proposed to make a change to the draft plan by deleting the X-01 zoning and removing the flood risk area from the development boundary of the settlement, as shown on the map below. The remaining area will be brought within the development boundary of the village.<br><br><b>Final Comment:</b> Area removed from development boundary – Appropriate, retain water compatible uses. |
| Kealkill    | GC-01            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Kealkill    | GC-02            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Shannonvale | GR-01            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Shannonvale | X-01             | B/C        | Sequential approach to be applied and development to be avoided in Flood Zones A, with only less vulnerable uses permitted in Flood Zone B. | 5.2.44.2 - It is proposed to make a change to the text of the Draft Plan  |

| Table 42: West Cork Municipal District - Specific Land Use Zonings within Flood Zone A or B |                  |            |   |   |
|---|------------------|------------|---|---|
| Settlement  | Zoning Objective | Flood Zone | Comments  | Proposed Draft Amendment  |
| Barleycove  | X-01             | A          | Sequential approach to be applied and development to be avoided in Flood Zones A, with only less vulnerable uses permitted in Flood Zone B. |   |
| Barleycove  | X-02             | A          | Sequential approach to be applied and development to be avoided in Flood Zones A, with only less vulnerable uses permitted in Flood Zone B. |   |
| Inchydoney  | GC-01            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Inchydoney  | GC-02            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Ownahinchy  | X-01             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |   |
| Ownahinchy  | X-03             | A/B/C      | Sequential approach to be applied and development to be avoided in Flood Zones A and B.   |   |
| Ownahinchy  | GC-01            | A/B/C      | Appropriate, retain water compatible uses   |   |
| Ownahinchy  | U-02             | A/B/C      | Appropriate, retain water compatible uses   | 5.2.49.1 - It is proposed to make a change to the draft plan to add the * requesting FRA for the following list of Development Objectives in the Municipal District as these sites lie within the Flood Zones.<br>5.2.46.3 - It is proposed to correct the Draft Plan map, to replacing the U-01 label with U-02. |

## Justification Tests for West Cork Municipal District

4.9.17 The table below details the Justification Tests for the areas identified above as being within Flood Zone A and B, and where the sequential approach and avoidance cannot be achieved.

| <b>Table 43: Clonakilty Justification Tests</b>   |   |  |   |
|---|---|--|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Clonakilty CK-T-01</b>   | <b>Clonakilty CK-T-02</b>  | <b>Clonakilty CK-U-02</b>   |
| <b>The urban settlement is targeted for growth</b>  | Clonakilty is a Key Town and the largest settlement within the West Cork Municipal District. It is targeted for strong growth as a major focus of employment and retail services in West Cork while also functioning as a nationally regarded tourism centre and destination.   | Clonakilty is a Key Town and the largest settlement within the West Cork Municipal District. It is targeted for strong growth as a major focus of employment and retail services in West Cork while also functioning as a nationally regarded tourism centre and destination.  | Clonakilty is a Key Town and the largest settlement within the West Cork Municipal District. It is targeted for strong growth as a major focus of employment and retail services in West Cork while also functioning as a nationally regarded tourism centre and destination. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | The site is zoned town centre. It is the existing town centre i.e. the primary and preferred location for retail and mixed uses. The zoning seeks to encourage sensitive refurbishment and redevelopment of existing sites while respecting the heritage character of the built fabric and promote public realm improvements. | The zoning is required to provide for the expansion of the town centre, provision of an amenity walk and pedestrian linkages to the town centre. The zoning also requires buildings of a high architectural standard which have regard to the setting of the town and the sites location overlooking Clonakilty Bay. | The zoning is required to identify essential existing infrastructure as the lands contain the existing Clonakilty public Wastewater Treatment Plant.  |
| <b>Is essential to facilitate</b>   | The zoning is essential to maintain and regenerate the town centre as a primary   | The site is essential to the provide for the expansion of the town centre.   | The operation and continued use of the existing public wastewater treatment facilities is   |



|   |  |  |   |
|---|--|--|---|
| <b>regeneration and / or expansion of the centre of the urban settlement.</b>   | location for retail and other mixed uses.  |  | essential to serve existing and future growth of the settlement.  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised and sites in the zone.   | There are significant underutilised lands in the zone.   | There are lands adjacent to the treatment plant within the site to cater for expansion of the facilities.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.  | The site is adjacent to the core of Clonakilty.  | The site is located within the settlement boundary.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.  | The site provides for retail, civic and other services directly adjacent to the core with pedestrian connections to the town centre and will be key to achieving compact urban growth. | The provision of adequate wastewater infrastructure is essential to achieving compact growth in the settlement.   |
| <b>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.</b> | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.                         | There are no alternative sites in areas at lower risk of flooding within or adjoining the core that will enable the expansion of the town centre.                                      | The site contains the existing public wastewater facility.  |
| <b>A flood risk assessment to an appropriate level of detail has</b>  | The area benefits from the OPW flood relief scheme, which is substantially completed (2021). New development within Flood Zone A and B (defended) will need a flood risk | The area benefits from the OPW flood relief scheme, which is substantially completed (2021). New development within Flood Zone A and B (defended) will need a flood risk               | The site lies partly within Flood Zones A, B and C. Although considered highly vulnerable, the location for a WWTP is appropriate given its position alongside the river. Any proposals for |

|                                  |  |  |   |
|----------------------------------|--|--|---|
| <b>been carried out</b>          | assessment which includes details of residual risks and proposes appropriate mitigation. Highly vulnerable development should not be located at ground flood level in these areas. | assessment which includes details of residual risks and proposes appropriate mitigation. Highly vulnerable development should not be located at ground flood level in these areas. | the WWTP will need to be accompanied by an appropriately detailed FRA, with suitable mitigation measures provided to manage flood risk to and from the plant, including consideration of the potential for contamination of flood waters. Note, the site does not benefit from the FRS. |
| <b>Result</b>                    | Pass   | Pass   | Pass  |
| <b>Recommendation for zoning</b> | Retain zoning objective  | Retain zoning objective  | Retain zoning objective   |

| <b>Table 44: Bantry Justification Tests</b>   |  |  |
|---|--|--|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Bantry BT-T-01</b>  | <b>Bantry BT-T-03</b>  |
| <b>The urban settlement is targeted for growth</b>  | Bantry is a Main Town in the West Cork Municipal District. It is the second largest town in the West Cork Municipal District and provides commercial, retail and tourism/leisure facilities for an extensive coastal and inland catchment area. Bantry is targeted for moderate growth in line with its role as a Service Centre in West Cork.   | Bantry is a Main Town in the West Cork Municipal District. It is the second largest town in the West Cork Municipal District and provides commercial, retail and tourism/leisure facilities for an extensive coastal and inland catchment area. Bantry is targeted for moderate growth in line with its role as a Service Centre in West Cork.             |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for redevelopment and consolidation of the town centre and encourages sensitive refurbishment/redevelopment of existing sites and promote public realm improvements whilst protecting the marine environment and built heritage.   | It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for redevelopment and consolidation of the town centre and encourages sensitive refurbishment/redevelopment of existing sites and promote public realm improvements whilst protecting the marine environment and built heritage.           |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as the primary location for retail and other mixed uses   | The zoning is essential to maintain and regenerate the town centre as the primary location for retail and other mixed uses   |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised land and buildings in the zone.  | There are significant underutilised land and buildings in the zone.  |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.  | The site is the existing town centre.  |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.  | The site is the existing town centre and will be key to achieving compact urban growth.  |
| <b>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.</b>     | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.   | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The need for flood relief works in Bantry was identified by the CFRAM programme, and are to be progressed in the future and will be funded under the Office of Public Works' flood relief capital works programme. Until such as time as the scheme is completed, new development in Flood Zones A and B is considered premature and development should be limited to Section 5.28 of the Planning Guidelines. | The need for flood relief works in Bantry was identified by the CFRAM programme, and are to be progressed in the future and will be funded under the Office of Public Works' flood relief capital works programme. Until such as time as the scheme is completed, new development in Flood Zones A and B is considered premature and development should be |

|                                  |   |   |
|----------------------------------|---|---|
|                                  |   | limited to Section 5.28 of the Planning Guidelines. |
| <b>Result</b>                    | Development is premature                        | Development is premature                            |
| <b>Recommendation for zoning</b> | Retain zoning objective to reflect current uses | Retain zoning objective to reflect current uses     |

| <b>Table 45: Skibbereen Justification Tests</b>   |   |
|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Skibbereen<br/>SK-T-01</b>   |
| <b>The urban settlement is targeted for growth</b>  | Skibbereen is a Main Town in the West Cork Municipal District that functions as an important service county town. It is a growth/development centre with an important employment, service, and social function for an extensive rural hinterland. Skibbereen is targeted for small scale growth focused on consolidation of the town to maximize its potential to attract new investment in employment, services, and public transport. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for redevelopment and consolidation of the town centre.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as the primary location for retail and other mixed uses  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised land and buildings in the zone.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.   |
| <b>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.</b>     | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.  |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The area benefits from the OPW flood relief scheme, which is substantially completed (2019). New development within Flood Zone A and B (defended) will need a flood risk assessment which includes details of residual risks and proposes appropriate mitigation. Highly vulnerable development should not be located at ground flood level in these areas.   |
| <b>Result</b>   | Pass  |
| <b>Recommendation for zoning</b>  | Retain zoning objective   |

| <b>Table 46: Castletownbere Justification Tests</b>   |   |
|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Castletownbere<br/>CR-T-01</b>   |
| <b>The urban settlement is targeted for growth</b>  | Castletownbere is a Main Town in the West Cork Municipal District and is the main population, employment and service centre for the Beara Peninsula providing key services to a wide rural hinterland remote from other urban centres. The town is targeted for small scale growth aimed at consolidation of Castletownbere as a key fisheries harbour and an important local services and employment centre with marine-based tourism. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for redevelopment and consolidation of the town centre.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as the primary location for retail and other mixed uses  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised land and buildings in the zone.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.   |
| <b>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.</b>     | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.  |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b>   | The T zoning objective that lies within Flood Zone A and B is at risk of tidal flooding and suitable mitigation measures can include raising FFL and allocating water compatible or less vulnerable uses at ground level. Highly vulnerable uses should be avoided at ground flood level in Flood Zone A or B.  |
| <b>Result</b>   | Pass  |
| <b>Recommendation for zoning</b>  | Retain existing zoning  |

| <b>Table 47: Schull Justification Tests</b>   |   |   |
|---|---|---|
| <b>Justification test for sites within Flood Zone A and / or B</b>  | <b>Schull SC-T-01</b>   | <b>Schull SC-T-02</b>   |
| <b>The urban settlement is targeted for growth</b>  | Schull is a Main Town in the West Cork Municipal District and is the main service centre for both the permanent and tourist population of the Mizen Peninsula. Schull is targeted for small scale growth aimed at promoting the development of the town within its scenic coastal setting and to continue the promotion of its coastal tourism functions while protecting its established role as a fishing port and marine food employment centre. | Schull is a Main Town in the West Cork Municipal District and is the main service centre for both the permanent and tourist population of the Mizen Peninsula. Schull is targeted for small scale growth aimed at promoting the development of the town within its scenic coastal setting and to continue the promotion of its coastal tourism functions while protecting its established role as a fishing port and marine food employment centre. |
| <b>The zoning or designation of the lands for the particular use or development type is required to achieve the proper planning and sustainable development of the urban settlement</b> | It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for redevelopment and consolidation of the town centre.   | It is the existing town centre i.e. the primary and preferred location for retail uses. The zoning will provide for redevelopment and consolidation of the town centre.   |
| <b>Is essential to facilitate regeneration and / or expansion of the centre of the urban settlement.</b>  | The zoning is essential to maintain and regenerate the town centre as the primary location for retail and other mixed uses  | The zoning is essential to maintain and regenerate the town centre as the primary location for retail and other mixed uses  |
| <b>Comprises significant previously developed and/ or under utilised lands</b>  | There are significant underutilised land and buildings in the zone.   | There are significant underutilised land and buildings in the zone.   |
| <b>Is within or adjoining the core of an established or designated urban settlement</b>   | The site is the existing town centre.   | The site is the existing town centre.   |
| <b>Will be essential in achieving compact and sustainable urban growth</b>  | The site is the existing town centre and will be key to achieving compact urban growth.   | The site is the existing town centre and will be key to achieving compact urban growth.   |
| <b>There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding</b>   | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.  | There is an established town centre on the site. There are no alternative sites in areas at lower risk of flooding within or adjoining the core.  |

|   |  |   |
|---|--|---|
| <b>within or adjoining the core of the urban settlement.</b>                          |  |   |
| <b>A flood risk assessment to an appropriate level of detail has been carried out</b> | The need for flood relief works in Schull was identified by the CFRAM programme, and are to be progressed in the future and will be funded under the Office of Public Works' flood relief capital works programme. Until such as time as the scheme is completed, new development in Flood Zones A and B is considered premature and development should be limited to Section 5.28 of the Planning Guidelines. | The need for flood relief works in Schull was identified by the CFRAM programme, and are to be progressed in the future and will be funded under the Office of Public Works' flood relief capital works programme. Although there is limited encroachment of Flood Zone A on this site, Flood Zone B is extensive, covering the majority of the site. Until such as time as the scheme is completed, new development (including less vulnerable) in Flood Zones A and B is considered premature and development should be limited to Section 5.28 of the Planning Guidelines. |
| <b>Result</b>   | Development is premature   | Development is premature  |
| <b>Recommendation for zoning</b>  | Retain zoning objective to reflect current uses  | Retain zoning objective to reflect current uses   |



## 4.10 Proposed Amendments to the Draft Plan

- 4.10.1 The preparation of the Proposed Amendments to the Draft County Development Plan was informed by the updated SFRA, including the new flood zone maps. Furthermore, a recommendation was given in relation to amendments put forward by Members through Notices of Motion.
- 4.10.2 An earlier version of this SFRA report was updated to include assessment of these proposed amendments.
- 4.10.3 While the proposed amendments largely reflect the recommendations in this report, in the case of particular lands in Mallow (Proposed Amendment No.3.2.3.23 – see figure 2 below) the recommendation to change these lands to a water compatible use, based on its failure to pass a Justification test, was not accepted by Members, who by resolution are proposing these lands for existing mixed/ general business/ industrial uses. Furthermore, a proposed amendment relating to proposed zoning BD-RR-O2 in Bandon (Proposed Amendment No. 5.1.4.23 – see figure 3 below) the recommendation to omit the lands at risk of flooding from the proposed zoning, based on its failure to pass a preliminary screening, was not accepted.
- 4.10.4 It is considered that these proposed amendments have not had sufficient regard to the provisions of the 2009 Ministerial Guidelines on Flood Risk Management.



Figure 2: Indicative map of Existing Residential /Mixed Residential and Other Uses lands known as Lacknahoola, south of existing garage and services, Mallow

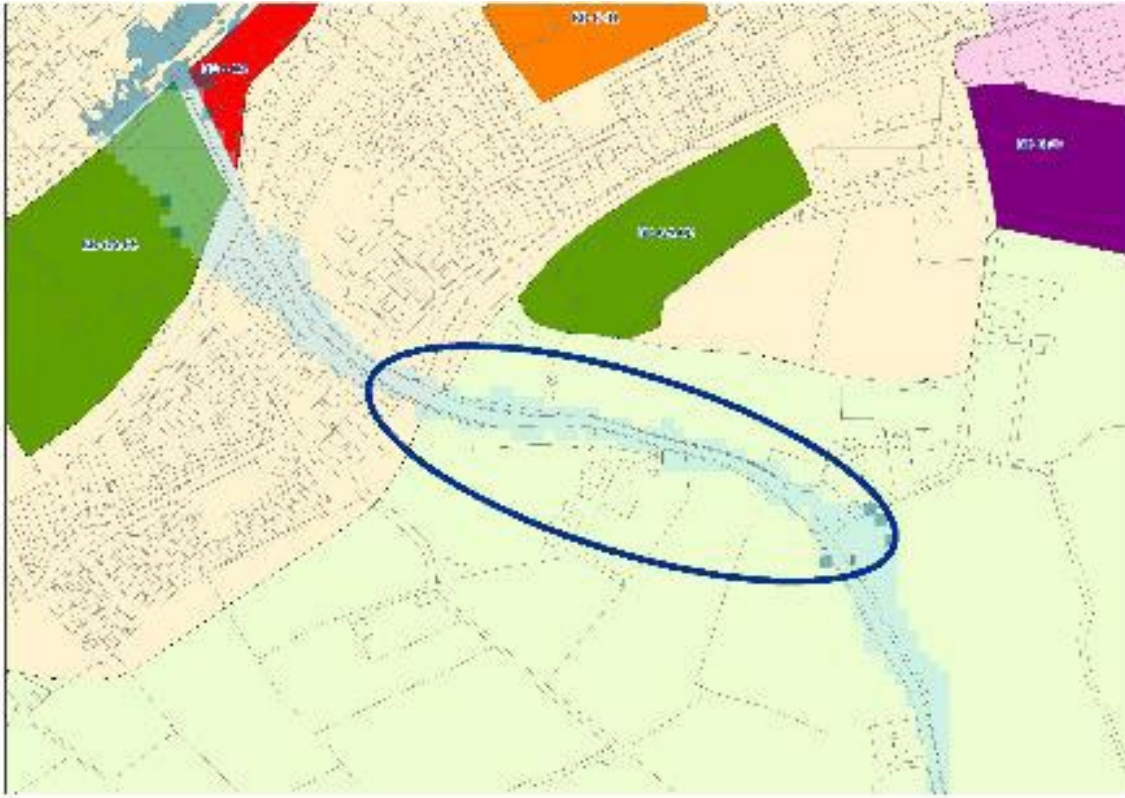


Figure 3: Indicative map of area at risk of flooding proposed to be zoned as part of Site BD-RR-02, Bandon

# Flood Risk and Development Management

## 5.1 The Strategic Approach

- 5.1.1 A strategic approach to the management of flood risk is important in County Cork as the risks are varied and disparate, with scales of risk and scales of existing and proposed development varying greatly across the county.
- 5.1.2 Following the Guidelines, development should always be located in areas of lowest flood risk first, and only when it has been established that there are no suitable alternative options should development (of the lowest vulnerability) proceed. Consideration may then be given to factors which moderate risks, such as defences, and finally consideration of suitable flood risk mitigation and site management measures is necessary.
- 5.1.3 It is important to note that whilst it may be technically feasible to mitigate or manage flood risk at site level, strategically it may not be a sustainable approach.
- 5.1.4 A summary of flood risks associated with each of the zoning objectives has been provided in Table 48 below. It should be noted that this table is intended as a guide only and should be read in conjunction with the detailed assessment of risks for each of the settlements.
- 5.1.5 When planning applications are being considered it is important to remember that not all uses will be appropriate on flood risk grounds, hence the need to work through the Justification Test for Development Management on a site by site basis and with reference to settlement specific commentary. For example, the community zoning objective could include a highly vulnerable crèche, less vulnerable shops and water compatible car parking / sports facilities but they would not be equally acceptable on the ground floor within Flood Zone A or B.

| <b>Zoning Objective</b>                         | <b>Indicative Primary Vulnerability</b> | <b>Flood Risk Commentary</b>                                |
|---|---|---|
| Agriculture                                     | Water compatible                        | JT not needed. Land use appropriate and should be retained. |
| Business and General Employment                 | Less vulnerable                         | JT needed within Flood Zone A.                              |
| Community                                       | Less vulnerable                         | JT needed within Flood Zone A.                              |
| Existing Mixed/General Business/Industrial Uses | Less vulnerable                         | JT needed within Flood Zone A.                              |

| <b>Table 48: Zoning objective vulnerability</b>        |  |   |
|--|--|---|
| <b>Zoning Objective</b>                                | <b>Indicative Primary Vulnerability</b>  | <b>Flood Risk Commentary</b>  |
| Existing Residential/Mixed Residential and Other Uses  | Highly vulnerable  | JT needed in Flood Zone A and B.  |
| Green Infrastructure                                   | Water compatible   | JT not needed. Land use appropriate and should be retained.   |
| Greenbelt  | Water compatible   | JT not needed. Land use appropriate and should be retained.   |
| High Technology Campus Development                     | Less / highly vulnerable   | JT needed within Flood Zone A for less vulnerable uses, and in Flood Zone A and B for highly vulnerable uses. |
| Industry   | Less vulnerable  | JT needed within Flood Zone A.  |
| Residential  | Highly vulnerable  | JT needed in Flood Zone A and B.  |
| Residential reserve                                    | Highly vulnerable  | JT needed in Flood Zone A and B.  |
| Highly Vulnerable / less vulnerable / water compatible | JT needed within Flood Zone A and B for highly vulnerable uses.<br>JT needed within Flood Zone A for less vulnerable uses, but water compatible uses are appropriate | Highly Vulnerable / less vulnerable / water compatible  |
| Town centre / Neighbourhood centre                     | Less vulnerable  | JT needed within Flood Zone A.  |
| Utility and Infrastructure                             | Less / highly vulnerable   | JT needed within Flood Zone A for less vulnerable uses, and in Flood Zone A and B for highly vulnerable uses. |

## 5.2 Requirements for a Flood Risk Assessment

- 5.2.1 In order to guide both applicants and planning officials through the process of planning for and mitigating flood risk, the key features of a range of development scenarios have been identified (relating the flood zone, development vulnerability and presence or absence of defences). For each scenario, a number of considerations relating to the suitability of the development are summarised below.
- 5.2.2 It should be noted that this section of the SFRA applies only to lands which have passed the Justification Test for Development Plans, and therefore Part 1 of the Justification Test for Development Management. Where this is not the case then further guidance should be sought from Cork County Council. In addition to the general recommendations in the following sections, the settlement tables should be reviewed for specific recommendations for the watercourses within Cork County.
- 5.2.3 Assessment of flood risk is required in support of any planning application. The level of detail will vary depending on the risks identified and the proposed land use. As a minimum, all proposed development, including that in Flood Zone C, must consider the impact of surface water flood risks on drainage design. In addition, flood risk from sources other than fluvial and tidal should be reviewed. The assessment may be a qualitative appraisal of risks, including drainage design. Alternatively, the findings of the CFRAM, or other detailed study, may be drawn upon to inform finished floor levels. In other circumstances a detailed modelling study and flood risk assessment may need to be undertaken. Further details of each of these scenarios, including considerations for the flood risk assessment are provided in the following sections.

- 5.2.4 For sites within Flood Zone A or B, a site specific "Stage 2 - Initial FRA" will be required and may need to be developed into a "Stage 3 - Detailed FRA". The extents of Flood Zone A and B are delineated through this SFRA. However, future studies may refine the extents (either to reduce or enlarge them) so a comprehensive review of available data should be undertaken once a Site Specific Flood Risk Assessment (SSFRA) has been triggered.
- 5.2.5 Within the SSFRA the impacts of climate change and residual risk (including culvert/structure blockage) and more extreme scenarios (such as the 0.1% AEP fluvial and tidal event) should be considered and modelled or remodelled where necessary. Further information on the required content of the SSFRA is provided in the Planning System and Flood Risk Management Guidelines.
- 5.2.6 Any proposal that is considered acceptable in principle shall demonstrate the use of the sequential approach in terms of the site layout and design and, in satisfying the Justification Test (where required) the proposal will demonstrate that appropriate mitigation and management measures are put in place.
- 5.2.7 Although there are many locations where development may, in the future, benefit from a flood relief scheme, the assessment must progress on the basis of the current level of protection and any risks to the development itself or third party land must be managed as part of the development design.

### 5.3 Drainage Impact Assessment

- 5.3.1 All proposed development, including that in Flood Zone C, must consider the impact of surface water flood risks on drainage design. In this regard, all the other development scenarios must pass through this stage before completing the planning and development process and should be accompanied by an appropriately detailed flood risk assessment, or drainage impact assessment.
- 5.3.2 Areas vulnerable to ponding are indicated on the OPW's PFRA mapping. However, this mapping is not exhaustive and more general consideration should be given to surface water management for development in low-lying areas which may act as natural ponds for collection of runoff.
- 5.3.3 The drainage design should ensure no increase in flood risk to the site, or the downstream catchment. Considerable detail on the process and design of SUDS is provided in the Greater Dublin Strategic Drainage Study (which in the absence of other guidance may be applied in County Cork), and applicants should reference Section 11.10.4 in Chapter 11 of the Draft Development Plan.
- 5.3.4 For larger sites (i.e. multiple dwellings or commercial units) master planning should ensure that existing flow routes are maintained, through the use of green infrastructure. Where possible, and particularly in areas of new development, floor levels should at a minimum be 300mm above adjacent roads and hard standing areas to reduce the consequences of any localised flooding. Where this is not possible, an alternative design appropriate to the location may be prepared.

## 5.4 Development in Flood Zone C

- 5.4.1 Where a site is within Flood Zone C, but adjoining or in close proximity to Flood Zone A or B there could be a risk of flooding associated with factors such as future scenarios (climate change) or in the event of failure of a defence, blocking of a bridge or culvert. Risk from sources other than fluvial and coastal must also be addressed for all development in Flood Zone C. As a minimum in such a scenario, a flood risk assessment should be undertaken which will screen out possible indirect sources of flood risk and where they cannot be screened out it should present mitigation measures. The most likely mitigation measure will involve setting finished floor levels to a height that is above the 1 in 100 year fluvial or 1 in 200 year tidal flood level, with an allowance for climate change and freeboard, or to ensure a step up from road level to prevent surface water ingress. Design elements such as channel maintenance or trash screens may also be required. Evacuation routes in the event of inundation of surrounding land should also be detailed.
- 5.4.2 The impacts of climate change should be considered for all proposed developments. This is particularly important for development near areas at risk of tidal flooding. A development which is currently in Flood Zone C may be shown to be at risk when 0.5m is added to the extreme (1 in 200 year) tide. Details of the approach to incorporating climate change impacts into the assessment and design are provided in Section 1.20.

## 5.5 Development in Flood Zone A and B

### Minor Developments

- 5.5.1 Section 5.28 of the Planning Guidelines on Flood Risk Management identifies certain types of development as being 'minor works' and therefore exempt from the Justification Test. Such development relates to works associated with existing developments, such as extensions, renovations and rebuilding of the existing development, small scale infill and changes of use.
- 5.5.2 Despite the 'Sequential Approach' and 'Justification Test' not applying, as they relate to existing buildings, an assessment of the risks of flooding should accompany such applications. This must demonstrate that the development would not increase flood risks, by introducing significant numbers of additional people into the flood plain and/or putting additional pressure on emergency services or existing flood management infrastructure. The development must not have adverse impacts or impede access to a watercourse, floodplain or flood protection and management facilities. Where possible, the design of built elements in these applications should demonstrate principles of flood resilient design (See 'The Planning System and Flood Risk Management Guidelines for Planning Authorities Technical Appendices, 2009', Section 4 - Designing for Residual Flood Risk).
- 5.5.3 Generally, the approach to deal with flood protection would involve raising the ground floor levels above the level of extreme high tides. However, in some parts of the plan area, which are already developed, ground floor levels for flood protection could lead to floor levels being much higher than adjacent streets, thus creating a hostile streetscape for pedestrians. This would cause problems for infill development sites if floor

levels were required to be significantly higher than those of neighbouring properties. In limited circumstances, and with agreement by Cork County Council, it may be possible to lower FFL for infill development. However, if this is the case, then these would be required to be flood resistant construction using water resistant materials and electrical fittings placed at higher levels. For high risk areas it would also be necessary to impose planning restrictions in these areas. Residential Uses would not be permitted at ground flood levels in high risk zones.

5.5.4 It should be noted that for residential buildings within Flood Zone A or B, bedroom accommodation is more appropriate at upper floor levels.

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

#### **Highly vulnerable development**

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

#### **New development**

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

5.5.8 In some cases, land use objectives which include for a highly vulnerable use have been justified in the Development Plan. In the main, this would be town centre zonings, which allow for a mix of residential, commercial and other uses. In such cases, a sequential approach to land use within the site must be taken and must consider the presence or absence of defences, land raising and provision of compensatory storage, safe access and egress in a flood and the wider development area.

#### **Existing developed areas**

5.5.9 In cases where development has been Justified through the Plan Making process, the outline requirements for a flood risk assessment and flood management measures have been detailed in this SFRA in both the following sections and the site specific assessments in Sections 1.6 to 1.13, which also details where such development has been justified. Of prime importance are the requirement to manage risk to the development site and not to increase flood risk elsewhere, and to ensure the long term sustainability of that

development by considering climate change impacts. There should be due consideration to safe evacuation routes and access for emergency services during a flood event.

### **Less vulnerable development**

- 5.5.10 This applies to less vulnerable development in Flood Zone A which has passed the Justification test for development plans, and less vulnerable development in Flood Zone B, where this form of development is appropriate, and the Justification Test is not required.
- 5.5.11 Less vulnerable development includes retail, leisure and warehousing and buildings used for agriculture and forestry. This category includes less vulnerable development in all forms, including refurbishment or infill development, and new development both in defended and undefended situations.
- 5.5.12 The design and assessment of less vulnerable development should begin with 1% AEP fluvial or 0.5% tidal events as standard, with climate change and a suitable freeboard included in the setting of finished floor levels.
- 5.5.13 The presence or absence of flood defences informs the level of flood mitigation recommended for less vulnerable developments in areas at risk of flooding. In contrast with highly vulnerable development, there is greater scope for the developer of less vulnerable uses to accept flood risks and build to a lower standard of protection, which is still high enough to manage risks for the development in question. However, any deviation from the design standard of 1%/0.5% AEP, plus climate change, plus freeboard, needs to be fully justified within the FRA. However, in County Cork there are limited locations where flood defences are present or due for completion shortly - Bandon, Clonakilty, Dunmanway, Fermoy, Mallow and Skibbereen all have some form of flood defence asset. Schemes are in progress or planned for a number of other settlements, as discussed in previous sections of this SFRA.

### **Water compatible uses**

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

## **5.6 Checklist for Applications for Development in Areas at Risk of Flooding**

- 5.6.1 This section applies to both highly and less vulnerable development in Flood Zone A and highly vulnerable development in Flood Zone B that satisfy the following:



- Meet the definition of Minor Development; or
- Have passed the Justification Test for Development Plans in this SFRA and can pass the Justification Test for Development Management to the satisfaction of the Planning Authority.

5.6.2 The following checklist is required for all development proposals:

- The SSFRA be carried out by an appropriately qualified Engineer with relevant FRA experience (as deemed acceptable by the Planning Authority), in accordance the Cork County SFRA and the Flood Risk Guidelines.
- Demonstration that the specific objectives or requirements for managing flood risk set out in this SFRA have been complied with, including an assessment of residual risks.
- Preparation of access, egress and emergency plans which are appropriate to the vulnerability of the development and its occupiers, the intensity of use and the level of flood risk.
- An assessment of the potential impacts of climate change and the adaptive capacity of the development.
- Compliance with C753 CIRIA SUDS guide, GSDSDS and inclusion of SuDS.

## 5.7 Climate Change

- 5.7.1 Ireland's climate is changing and analysis of the potential impacts of future climate change is essential for understanding and planning. Climate change should be considered when assessing flood risk and in particular residual flood risk. Areas of residual risk are highly sensitive to climate change impacts as an increase in flood levels will increase the likelihood of defence failure. As laid out in the Climate Adaptation Strategy, new development should include consideration of climate change impacts on fluvial, pluvial and tidal source of flooding.
- 5.7.2 The Government has established an Inter-Departmental Group on Coastal Change Management to scope out an approach for the development of a national coordinated and integrated strategy to manage the projected impact of coastal change to our coastal communities, economies, heritage, culture and environment. The Inter-Departmental Group is jointly chaired by the Department of Housing, Planning and Local Government and the OPW and will bring forward options and recommendations for the Government to consider as soon as possible. When such recommendations are available they should be considered in future iterations of the SFRA and Development Plan, and for site specific FRAs as appropriate.
- 5.7.3 The Planning Guidelines recommend that a precautionary approach to climate change is adopted due to the level of uncertainty involved in the potential effects. Specific advice on the expected impacts of climate change and the allowances to be provided for future flood risk management in Ireland is given in the OPW

draft guidance<sup>2</sup>. However, this guidance is over 10 years old now and climate science, particularly in relation to sea level rise, has developed rapidly. There are many coastal related climate change impacts, these include:

- continued sea level rise;
- potentially more severe Atlantic storms, which could generate more significant storm surges and extreme waves;
- increased water depths lead to larger waves reaching the coast.

5.7.4 The OPW guidance recommended two climate change scenarios are considered. These are the Mid-Range Future Scenario (MRFS) and the High-End Future Scenario (HEFS). The allowances should be applied to the 1% AEP fluvial or 0.5% AEP tidal levels. Where a development is critical or extremely vulnerable (see Table 5-2) the impact of climate change on 0.1% AEP flows should also be applied, and greater climate change allowances tested for resilience purposes.

5.7.5 These climate change allowances are particularly important at the development management stage of planning and will ensure that proposed development is designed and constructed according to current local and national Government advice.

| <b>Table 49: Climate change allowances by vulnerability and flood source</b>                       |   |   |                                    |
|--|---|---|------------------------------------|
| <b>Development vulnerability</b>   | <b>Fluvial climate change allowance (increase in flows)</b> | <b>Tidal climate change allowance (increase in sea level)</b> | <b>Storm water / surface water</b> |
| Less vulnerable  | 20%   | 0.5m (MRFS)   | 20% increase in rainfall           |
| Highly vulnerable  | 20%   | 0.5m (MRFS)   |                                    |
| Critical or extremely vulnerable (e.g. hospitals, major sub-stations, blue light services)         | 30%   | 1.0m (HEFS)   |                                    |
| Note: there will be no discounting of climate change allowances for shorter lifespan developments. |   |   |                                    |

5.7.6 Further work on the impacts of climate change on flood levels was undertaken as part of the various CFRAM Studies and the ICPSS. The studies provided flood extents for both fluvial and coastal risk, which are available on [www.floodinfo.ie](http://www.floodinfo.ie).

5.7.7 Assessment of climate change impacts can be carried out in a number of ways. For watercourses that fall within the CFRAM study areas, flood extents and water levels for the MRFS and HEFS have been developed. For other fluvial watercourses a conservative approach would be to take the 0.1% AEP event levels and extent as representing the 1% AEP event plus climate change. Where access to the hydraulic river model is readily available a run with climate change could be carried out, or hand calculations undertaken to determine the

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<sup>2</sup> OPW Assessment of Potential Future Scenarios, Flood Risk Management Draft Guidance, 2009

likely impact of additional flows on river levels. In a coastal or tidal scenario, a 0.5 or 1m increase to the 0.5% AEP sea level can be assessed based on topographic levels.

- 5.7.8 In addition to the risks of inundation from rising sea levels, there is an associated risk of coastal erosion, which may be exacerbated by more frequent storms, larger waves and higher tides. For development in coastal locations and assessment of coastal erosion risk should also be carried out. GSI are currently undertaking a mapping study to develop a Coastal Vulnerability Index. This, amongst other data sets, should be reviewed.

## 5.8 Flood Mitigation Measures at Site Design

- 5.8.1 For any development proposal in an area at moderate or high risk of flooding that is considered acceptable in principle (i.e. has passed the Plan Making Justification Test), the site specific FRA must demonstrate that appropriate mitigation measures can be put in place and that residual risks can be managed to acceptable levels. This may include the use of flood-resistant construction measures that are aimed at preventing water from entering a building and that mitigate the damage floodwater causes to buildings. Alternatively, designs for flood resilient construction may be adopted where it can be demonstrated that entry of floodwater into buildings is preferable to limit damage caused by floodwater and allow relatively quick recovery.
- 5.8.2 Various mitigation measures are outlined below and further detail on flood resilience and flood resistance are included in the Technical Appendices of the Planning Guidelines, The Planning System and Flood Risk Management<sup>3</sup>.
- 5.8.3 It should be emphasised that measures such as those highlighted below should only be considered once it has been deemed 'appropriate', to allow development in a given location or the Justification Test for Development Plans has been passed. The Flooding Guidelines do not advocate an approach of engineering solutions in order to justify the development which would otherwise be inappropriate.

### Site Layout and Design

- 5.8.4 To address flood risk in the design of new development, a risk-based approach should be adopted to locate more vulnerable land use to higher ground while water compatible development i.e. car parking (with appropriate flood management plan) and recreational space can be located in higher flood risk areas.
- 5.8.5 The site layout should identify and protect land required for current and future flood risk management. Waterside areas or areas along known flow routes can be used for recreation, amenity and environmental purposes to allow preservation of flow routes and flood storage, while at the same time providing valuable social and environmental benefits. Such water conveyancing routes should be free of barriers such as walls or

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<sup>3</sup> The Planning System and Flood Risk Management Guidelines for Planning Authorities, Technical Appendices, November 2009

buildings. The signing of floodplain areas to indicate the shared use of the land and to identify safe access routes is also recommended.

- 5.8.6 At an individual building level, assigning a water compatible use, such as open public realm, or less vulnerable use to the ground floor level, along with suitable flood resilient construction, is an effective way of raising vulnerable living space above design flood levels. It can however have an impact on the streetscape. The provision of safe access and egress is a critical consideration in allocating ground floor uses.

### Ground levels, floor levels and building use

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

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

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

- 5.8.9 Raising finished floor levels within a development is an effective way of avoiding damage to the interior of buildings (i.e. furniture and fittings) in times of flood. Finished floor levels should be assessed in relation to the specific development, but the minimum levels set out in Table 1.12.1 should apply. It should be noted

that in certain locations it may be appropriate to adopt a more precautionary approach to setting finished floor levels, for example where residual risks associated with bridge blockage occur or the 0.1% AEP event is more extreme, and this should be specifically assessed in the SSFRA. It is also noted that typically finished floor levels should be set a minimum of 300mm above surrounding ground levels to prevent ingress of surface water.

| <b>Table 50: Recommended minimum finished floor levels</b> |  |
|--|--|
| <b>Scenario</b>  | <b>Finished floor level to be based on</b>   |
| Fluvial, undefended  | 1% AEP flood + climate change (as Table 5-2) + 300mm freeboard   |
| Tidal, undefended  | 0.5% AEP flood + climate change (as Table 5-2) + 300mm freeboard (or +500mm where wave overtopping and surge is an additional risk).   |
| Fluvial, defended  | 1% AEP flood + 300mm freeboard. Climate change does not need to be included, provided it is included in the defence height or adaption plan for the scheme.  |
| Tidal, defended  | 0.5% AEP flood + 300mm freeboard (or +500mm where wave overtopping and surge is an additional risk). Climate change does not need to be included, provided it is included in the defence height or adaption plan for the scheme. |

### Raised Defences

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

### Emergency Flood Response Plans

5.8.11 In some instances, and only when all parts both the Plan Making and Development Management Justification Tests have been passed, it may be necessary for an emergency flood response plan to be prepared to support other flood management measures within the context of a less vulnerable or water compatible development. An emergency response plan may be required to trigger the operation of demountable flood defences to a less vulnerable development, evacuation of a car park or closure of a business or retail premises.

5.8.12 The emergency plan will need to detail triggers for activation, including receipt of a timely flood warning, a staged response and to set out the management and operational roles and responsibilities. The plan will also need to set out arrangements for access and egress, both for pedestrians, vehicles and emergency services. The details of the plan should be based on an appropriately detailed assessment of flood risk, including speed of onset of flooding, depths and duration of inundation.

5.8.13 However, just because it is possible to prepare an emergency plan does not mean this is advisable or appropriate for the nature and vulnerability of development.

### Nature based solutions / Green Infrastructure

5.8.14 Measures can be taken that aim to retain water on the landscape during periods of high rainfall and flood by mimicking the functioning of a natural landscape, thereby reducing the magnitude of flood events and providing complimentary ecosystem services. In general, nature-based measures aim to:

- Reduce the rate of runoff during periods of high rainfall;
- Provide flood storage in upper catchment areas; and
- Use natural materials and “soft” engineering techniques to managing flooding in place of “hard” engineering in river corridors.

5.8.15 Nature-based measures to control flooding typically focus on the use of porous surfaces in developments (Sustainable Urban Drainage Systems or SUDS), planting of native vegetation communities/assemblages that are tolerant of both wet and dry conditions, and reversing the impacts of over-engineered river corridors (river restoration) to reduce the peak of flood events by mimicking the function of a natural catchment landscape. In addition to providing flood relief benefits, nature-based solutions can provide an array of ecosystem services including silt and pollution control for runoff entering the river system, improved riparian and in-river habitats, localised temperature reduction during periods of extreme heat, reduced maintenance requirements in engineered systems, groundwater recharge, and carbon sequestration.

5.8.16 These measures can be implemented across an array of scales, for instance across a catchment as part of a wider flood relief scheme, or on a site-specific basis as part of a landscaping or green infrastructure plan. Nature-based solutions can provide flood mitigation benefits and ecosystem services across all scales if given adequate planning, and should be considered during the site layout and design stages of a development.

### 'Green Corridor'

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

- Retention of all, or some, of the natural floodplain;
- Opportunities to undertake works to restore natural in-river processes and habitats;
- Potential opportunities for amenity, including better views, riverside walks and public open spaces;
- Maintenance of the connectivity between the river and its floodplain, encouraging the development of a full range of riparian and floodplain habitats;
- Natural attenuation of flows in the immediate floodplain will help ensure no increase in flood risk downstream;
- Allows access to the river for maintenance works;

- Helping to achieve “Good” Ecological Status for river waterbodies under the EU Water Framework Directive (WFD); and
- Retention of clearly demarcated areas where development is not appropriate on flood risk grounds, and in accordance with the Planning System and Flood Risk Management.

5.8.18 The width of this corridor should be determined through undertaking of a river restoration strategy, but can also be indicated by the available land, and topographical constraints, such as raised land and flood defences. It would ideally span the full width of the floodplain (i.e. all of Flood Zone A). See Chapter 11 Water Management and Chapter 14 Green Infrastructure and Environment of the Plan for policy and guidance in relation to development in the riparian zone and the creation of green corridors.

### **Existing and proposed schemes and maintenance areas**

5.8.19 As detailed in Table 1, there are a number of completed, ongoing and planned future flood relief schemes across the County. Development proposals should be cognisant of these schemes and seek best available information at the time of preparing a site specific flood risk assessment. It is important that sufficient provision for construction and maintenance access is provided around a FRS and in this regard consultation with Cork County Council and / or OPW is essential.

5.8.20 There are also a number of Drainage Districts and Arterial Drainage Schemes within the County. Further details of the locations can be found on [www.floodinfo.ie](http://www.floodinfo.ie). Suitable access provision for maintenance must be retained on these watercourses, which is typically a 10m buffer from top of bank, but should be agreed following consultation with Cork County Council and / or OPW.

# Managing Flood Risk in the Future

## 6.1 Flood Zone Maps

6.1.1 The inclusion of Flood Zone maps for the settlements of the Municipal Districts is the first step in managing flood risk in the future. The maps are primarily intended to function as a screening tool. They are not a substitute for detailed hydraulic modelling, such as may be required to assess the level of flood risk for a specific development. The flood maps should be used to guide decision making when determining whether a detailed Flood Risk Assessment is required for any given site. The maps are intended for guidance and cannot provide details for individual properties.

## 6.2 Monitoring and Review

6.2.1 Information in relation to flood risk will be monitored and reviewed by the Council and the Strategic Flood Risk Assessment will be updated as appropriate as new information becomes available. There are a number of key outputs from possible future studies and datasets which could inform any update of the SFRA as availability allows. A list of potential sources of information which will inform an SFRA review is provided in the table below.

| Table 51 Potential Sources of Flood Risk Data   |                                    |   |
|---|------------------------------------|---|
| Data  | Source                             | Timeframe   |
| County Development Plan Updates   | Cork County Council                | 2021  |
| Flood maps of other sources, such as pluvial inundation, groundwater and drainage networks      | Various                            | Unknown   |
| Significant Flood Events  | Various                            | Unknown   |
| Changes to Planning and /or Flood Management Policy   | DoHLGH / OPW / Cork County Council | Unknown   |
| Flood Defence Feasibility/ Design Reports which provide more detailed predicative flood maps.   | OPW Primarily                      | Unknown, although several are progressing through optioneering stages at present. |
| Construction / completion of flood relief schemes, which change flood risk behind the defences. | OPW / CCC                          | Unknown   |



# Appendix A

Indicative maps of lands subject to a preliminary screening and/or Justification Test which do not form part of a specific zoning parcel.

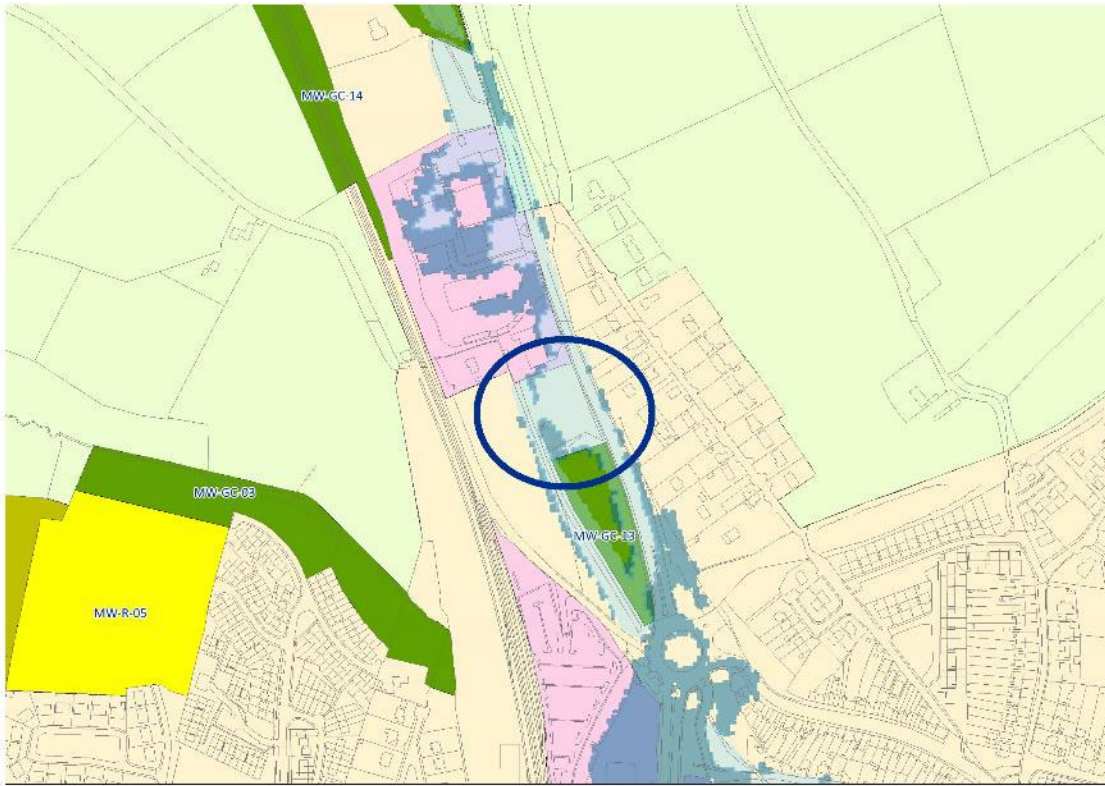


Figure 2: Indicative map of Existing Residential / Mixed Residential and Other Uses, lands known as Lacknahoola, south of existing garage and services, Mallow

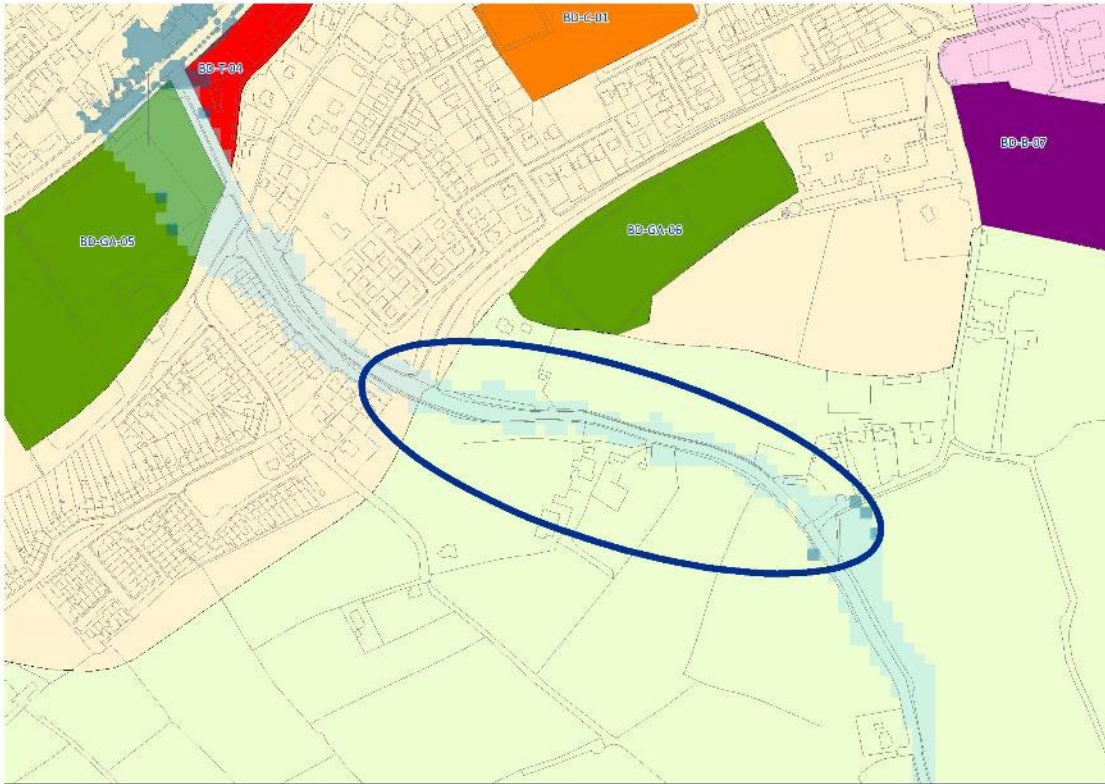


Figure 3: Indicative map of green belt land proposed to be zoned as part of Site BD-RR-02, Bandon

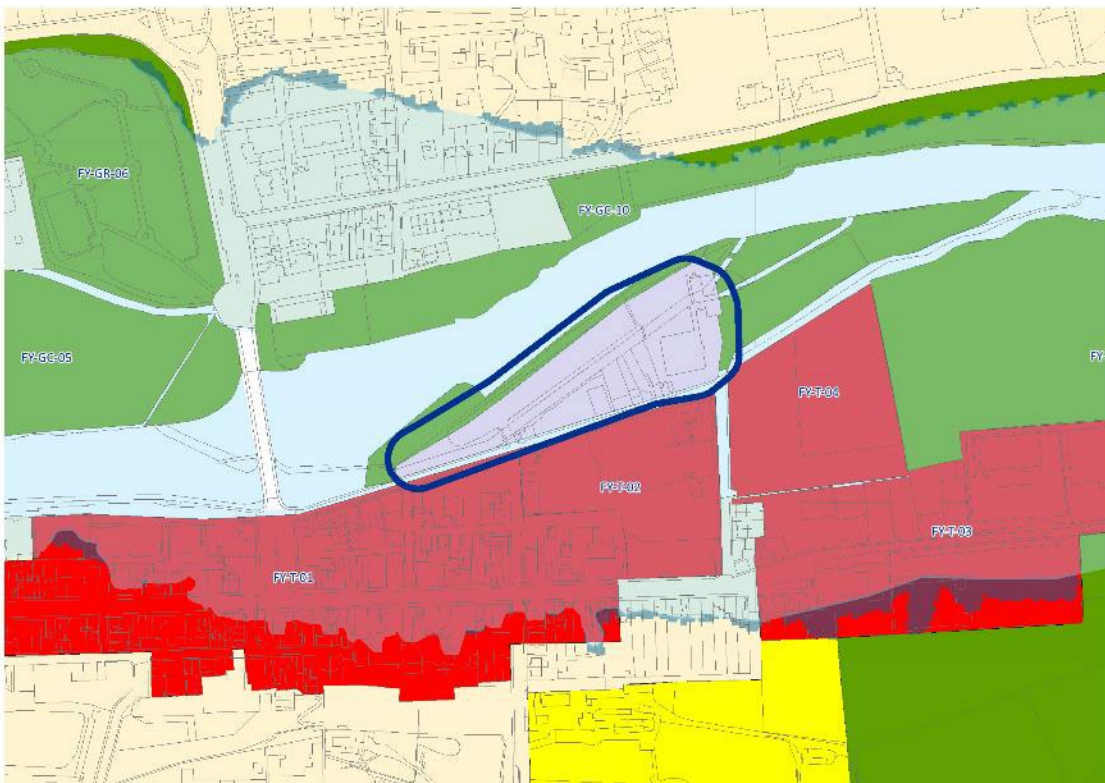


Figure 4: Indicative map of Existing Mixed / General Business / Industrial lands, lands North of FY-T-02, Fermoy

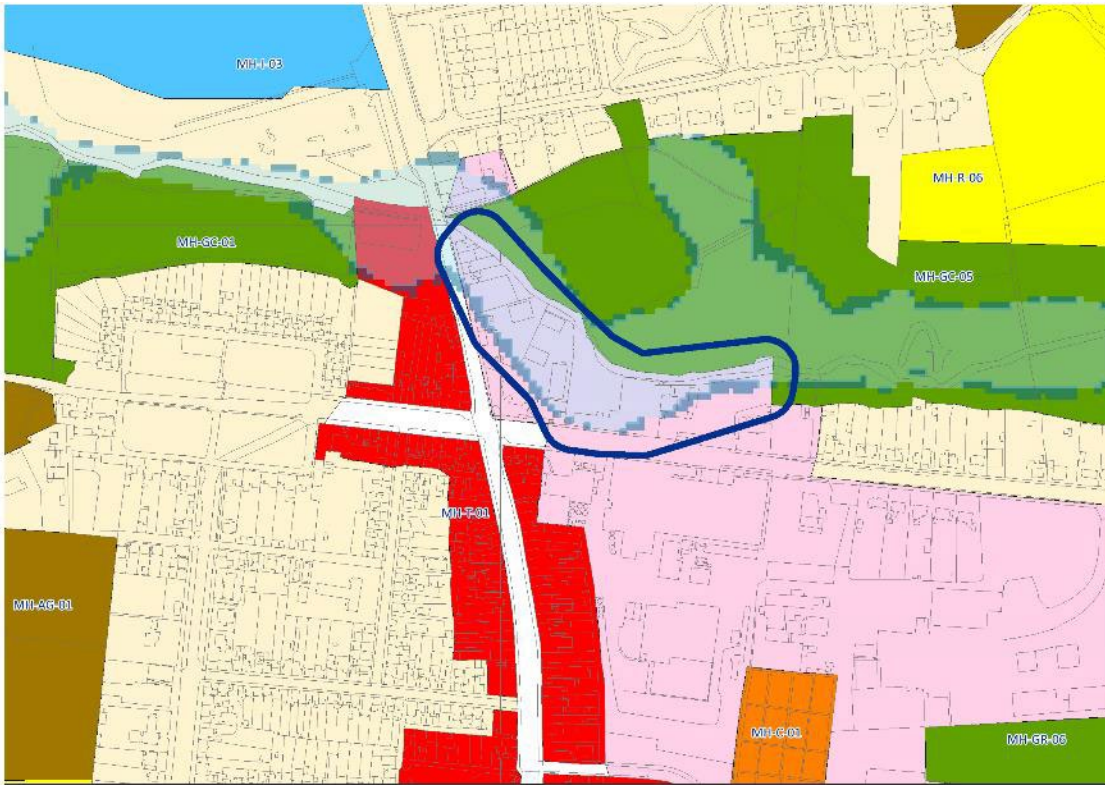


Figure 5: Indicative map of Existing Mixed / General Business / Industrial lands south of MH-GC-05, Mitchelstown

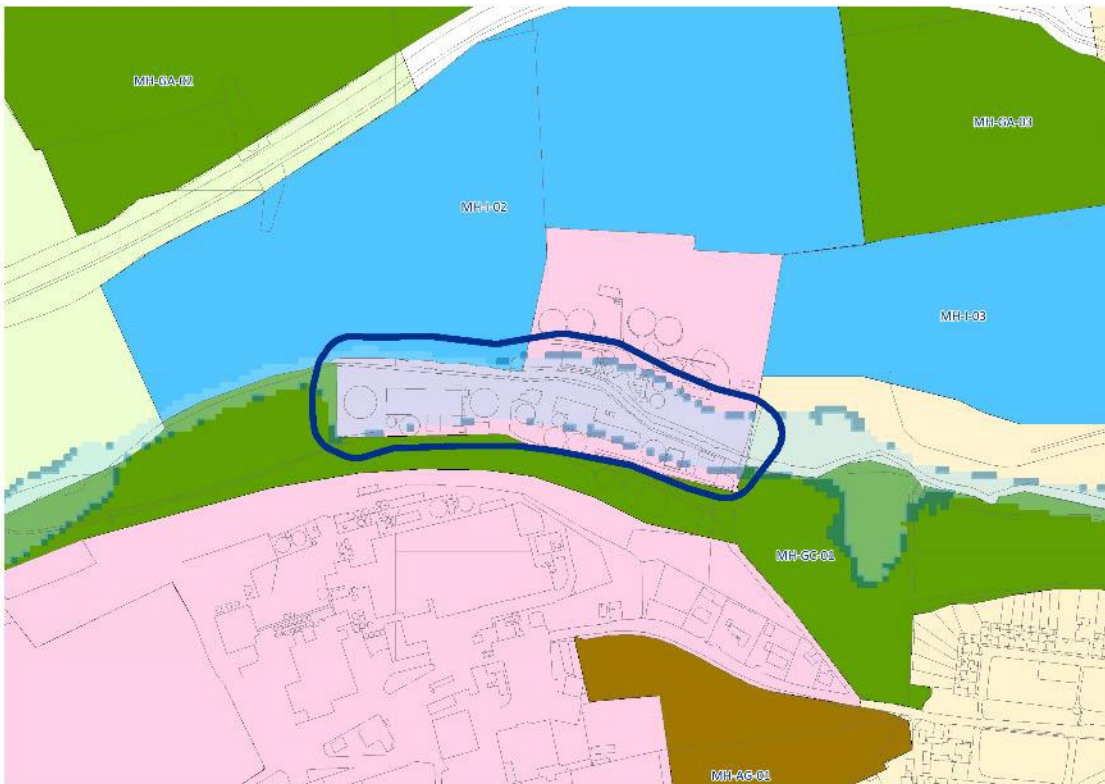


Figure 6: Indicative map of Existing Mixed / General Business / Industrial lands south of MH-I-02, Mitchelstown

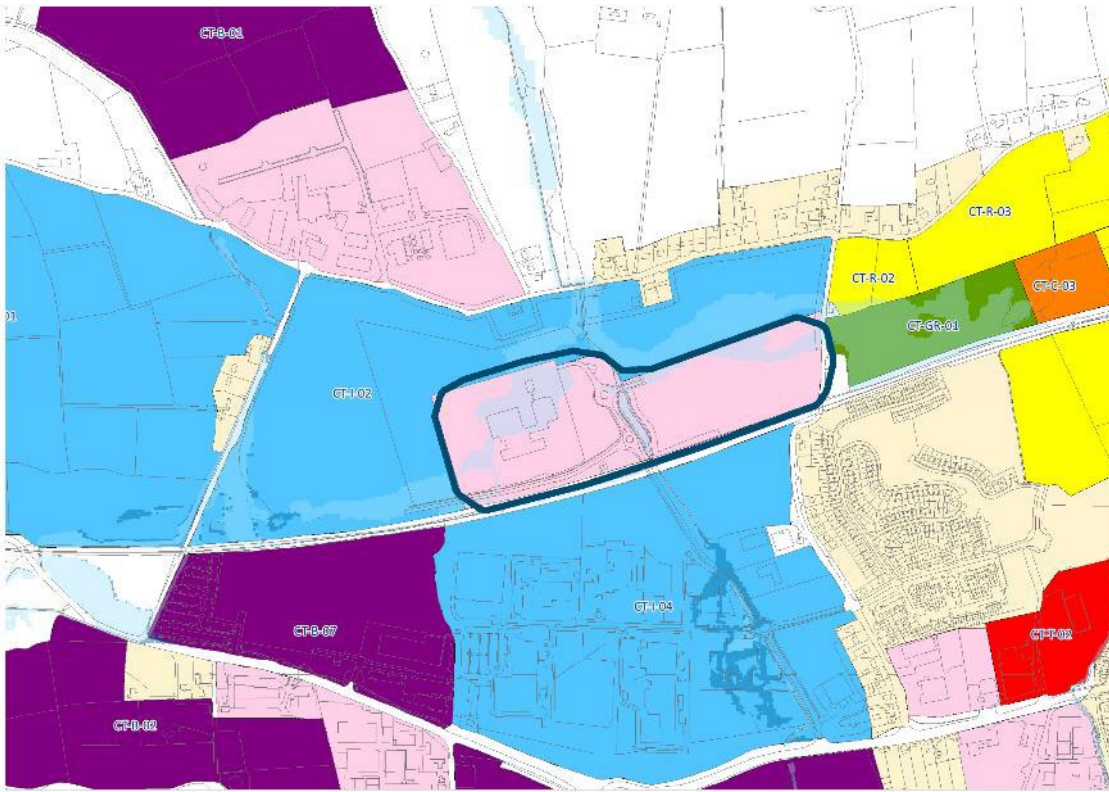


Figure 7: Indicative map of Existing Mixed / General Business / Industrial lands south of CT-I-02 (Stryker Site), Carrigtwohill

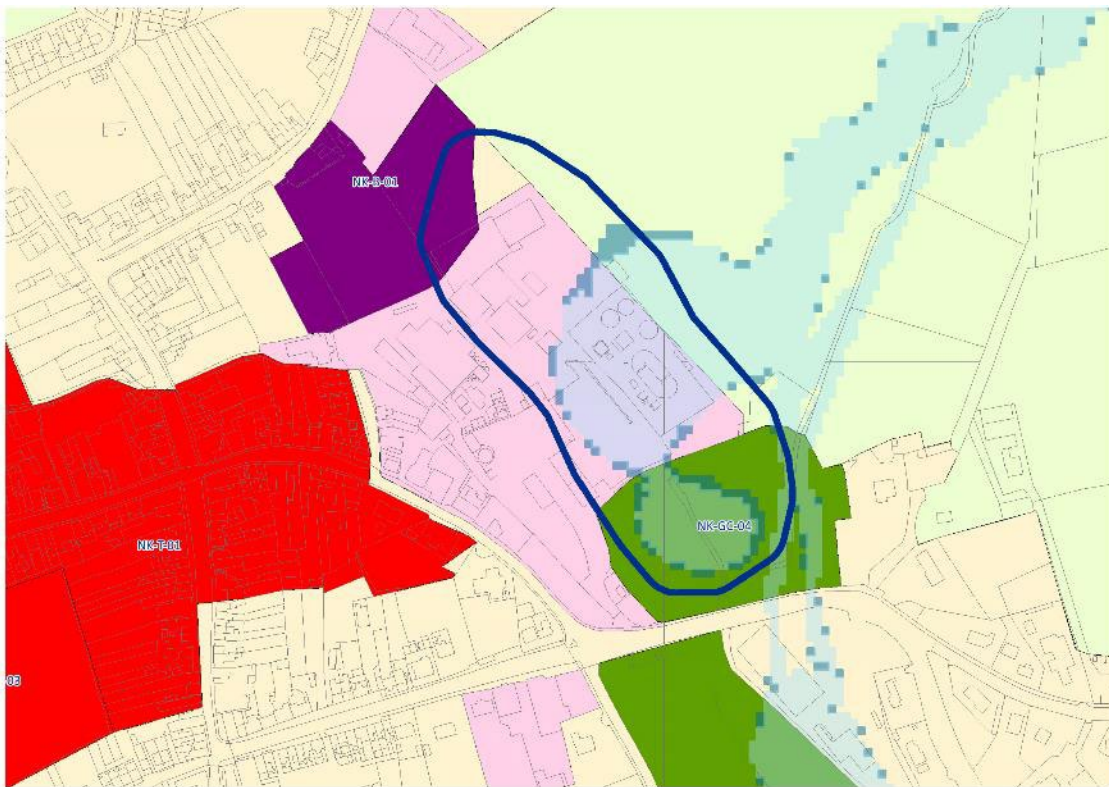


Figure 8: Indicative map of Existing Mixed / General Business / Industrial lands south of NK-B-01, Newmarket

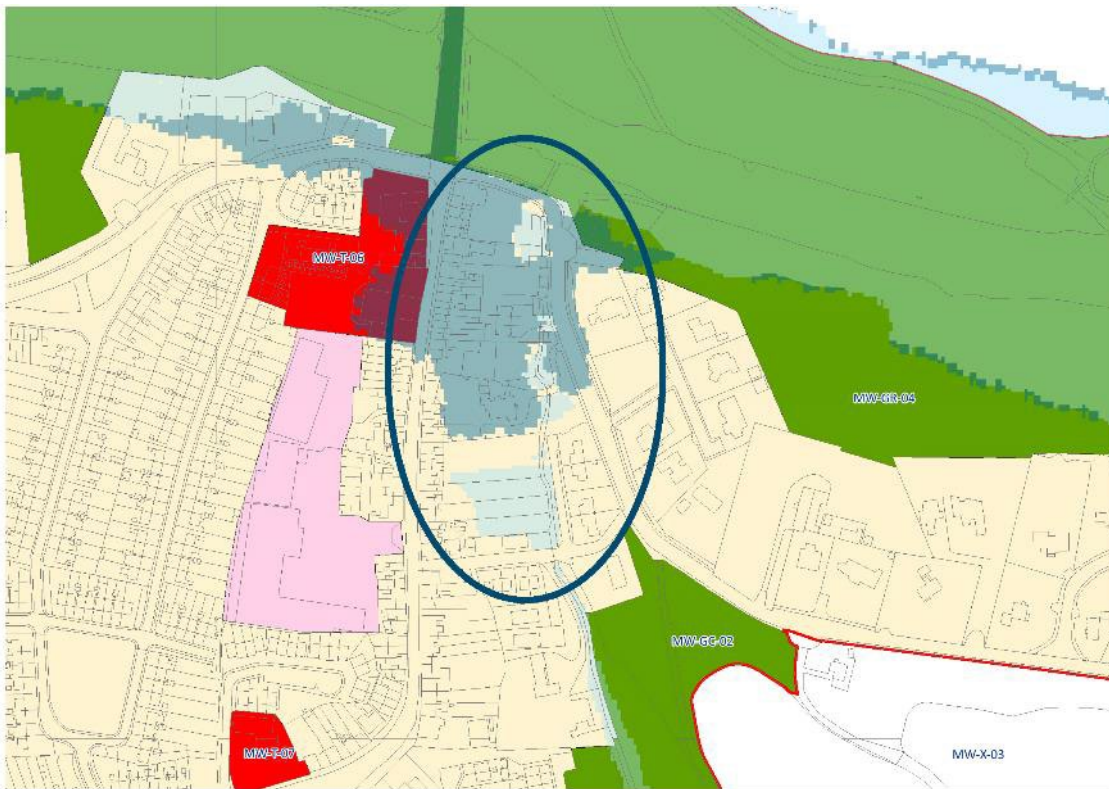
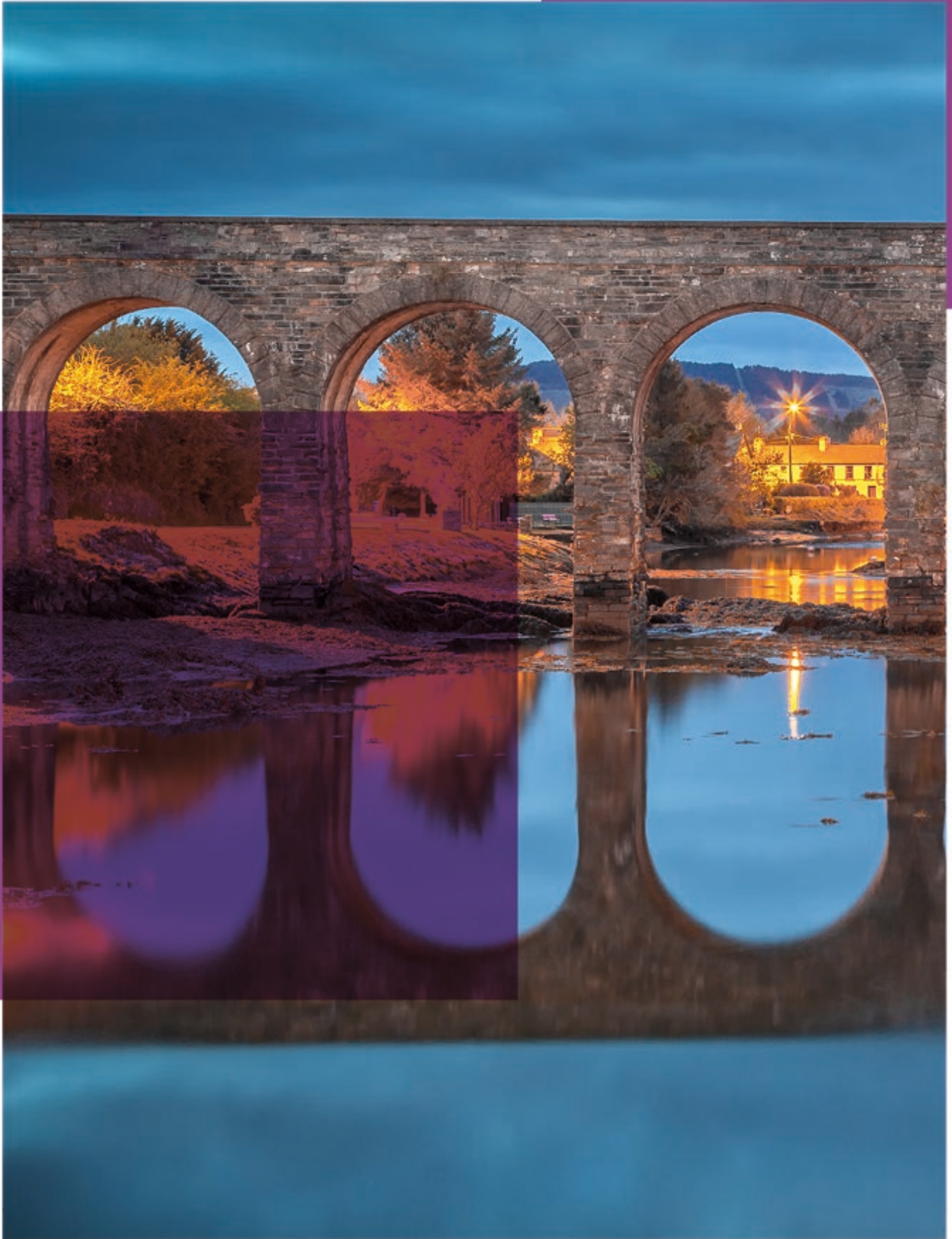


Figure 9: Indicative map of Existing Residential/Mixed Residential and Other Uses west of MW-T-06 and including Regeneration site MW-RA-05, Mallow



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