

DRAFT BRAY MUNICIPAL DISTRICT LOCAL AREA PLAN 2017

APPENDIX C

STRATEGIC FLOOD RISK ASSESSMENT



WICKLOW COUNTY COUNCIL
AUGUST 2017

BRAY MUNICIPAL DISTRICT LOCAL AREA PLAN 2017

STRATEGIC FLOOD RISK ASSESSMENT

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1. BACKGROUND INFORMATION

1.1 Introduction

In accordance with the 'Planning System and Flood Risk Management: Guidelines for Planning Authorities', a Strategic Flood Risk Assessment (SFRA) of the 'Bray Municipal District Local Area Plan 2017' has been undertaken.

The '*Planning System and Flood Risk Management – Guidelines for Planning Authorities*' were issued in 2009 by the Minister for the Environment, Heritage and Local Government and the OPW under Section 28 of the Planning and Development Act 2000 (as amended). The purpose of the Flood Risk 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 Flood Risk Guidelines introduce mechanisms for the incorporation of flood risk identification, assessment and management into the planning process. Implementation of the Flood Risk Guidelines is intended to be achieved through actions at the national, regional, local authority and site-specific levels. Planning Authorities and An Bord Pleanála are required to have regard to the Flood Risk Guidelines in carrying out their functions under the Planning Acts.

The key planning principles of the Flood Risk 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 runoff;
- 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;
- 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.

Clarification of advice contained in the Flood Risk Guidelines was issued in August 2014 (Circular PL2/2014) referring to two matters. The first was to ensure planning authorities are prudent in the use the draft PFRA or CFRAM flood maps as the sole basis for deciding on planning applications, to make use of site inspections and/or knowledge of local areas, to request a site-specific flood risk assessment by an appropriately qualified engineer where appropriate and to also generally use their professional judgement in this regard.

The second matter amends the text of the guidelines to indicate that during the preparation of the development plan (or a variation of a development plan) in areas located in flood zone A and B, where the existing use zoning is classified as a "vulnerable use", the planning authority should consider if the existing use zoning of the 'vulnerable use' is still the appropriate zoning for the area. Where the planning authority considers that the existing use zoning is still appropriate, the planning authority must specify the nature and design of structural or non-structural flood risk management measures required prior to future development in such areas, in order to ensure that flood hazard and risk to the area and to other adjoining locations will not be increased, or if practicable, will be reduced. With regard to the second matter, the text amendment is noted; however where the existing use zoning is in flood zone A/B and is considered a vulnerable use, where necessary a mitigation objective has been incorporated into the local plan and/or an appropriate zoning has been applied for the existing use. Any flood risk management measures are to be considered at the development management stage.

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

The Guidelines work on a number of key principles, including:

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

1.2 Flood Risk Analysis Stages

The Flood Risk Guidelines recommend that a staged approach should be adopted when analysing flood risk; carrying out only such assessment stage as is needed for the purposes of decision-making. All stages of flood risk assessment may not be needed. This will depend on the level of risk and the potential conflict with proposed development and the scale of mitigation measures being proposed. The Flood Risk Guidelines require that 'Stage One Flood Risk Identification' is undertaken for a countywide SFRA and states that there is a probability that a 'Stage 2 Initial Flood Risk Assessment' may be needed to meet the requirements of the justification test. A Stage 3 FRA is unlikely to be required for a countywide SFRA.

A STAGED APPROACH TO FLOOD RISK ASSESSMENT
<p>Stage 1 Flood Risk Identification</p> <p>To identify whether there may be any flooding or surface water management issues related to either the area of regional planning guidelines, Development Plans and Local Area Plans or a proposed development site that may warrant further investigation at the appropriate lower level plan or planning application level. To suggest measures to be integrated into the CDP that will contribute towards both flood risk management in the county and compliance with the Flood Risk Guidelines.</p>
<p>Stage 2 Initial Flood Risk Assessment</p> <p>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 indicative 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 should be scoped.</p>
<p>Stage 3 Detailed Flood Risk Assessment</p> <p>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.</p>
<p>Source: DoEHLG The Planning System and Flood Risk Management Guidelines</p>

This SFRA document presents the findings of the following:

(a) 'Stage 1 Strategic Flood Risk Identification (FRI) for the entire plan area i.e. the Bray Municipal District area. This FRI has found that 'Stage 2' FRA is only required for the settlement of Bray and Enniskerry; and therefore this document also provides a FRA for these settlements. The Stage 1 FRI is therefore applicable particularly to the open countryside areas, the Level 6 settlement of Kilmacanogue and the Level 9 settlement/rural cluster of Kilmurray. Although flooding issues have been identified within these areas as part of this FRI, 'Stage 2' FRA for these areas is not considered necessary as these lands are not designated for significant development or zoned for specific uses.

and

(b) 'Stage 2 Flood Risk Assessment' for the settlements of Bray Town and Environs and Enniskerry¹. A Stage 2 assessment is considered appropriate as these plans provided for specific development objectives and lands zoned for a particular purpose.

¹ Please refer to the County Development Plan 2016 SFRA for the FRA of the tourism zoning at Glen of the Downs.

1.3 Definition of Flood Zones

In the 'Planning System and Flood Risk Management: Guidelines for Planning Authorities', 'Flood Zones' are used to indicate the likelihood of a flood occurring. These zones indicate a high, moderate and low risk of flooding from fluvial or coastal sources and are defined as follows:

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 1000year and 0.5% or 1 in 200 for coastal flooding).

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 areas of the plan which are not in zones A and B, hence it is not highlighted on the FRA maps.

The flood zones described above are indicative of river and coastal flooding only. They should not be used to suggest that any areas are free from flood risk, since they do not include the effects of other forms of flooding such as from groundwater or artificial drainage systems.

The indicative Flood Zone map for the plan area is included in Map No. SFRA 1 of this document.

1.4 Sources of Information

The information about flood risk that has been used in the preparation of these flood zones has been collated from a number of sources including:

- OPW Preliminary Flood Risk Assessment (PFRA). The OPW published the 'Preliminary Flood Risk Assessment' (PFRA) mapping in 2011 and published 'Areas for Further Assessment' (AFA) in 2014. The PFRAs covered the County and identified areas at risk of significant flooding and includes maps showing areas deemed to be at risk. (see Map C1) The areas deemed to be at significant risk, where the flood risk is of particular concern nationally, are identified as Areas for Further Assessment (AFAs) and more detailed assessment on the extent and degree of flood risk was undertaken in these areas, with Flood Hazard Mapping (CFRAMs) published in 2016. In Wicklow the AFAs / CFRAMs cover all or part of the following areas: Arklow, Ashford, Aughrim, Avoca, Baltinglass, Blessington, Greystones & environs, Kilcoole, Newcastle, Rathnew and Wicklow Town)
- National Coastal Protection Strategy Study - flood and coastal erosion risk maps. The predicted flood extents which were produced under the Irish Coastal Protection Strategy Study (ICPSS) are based on analysis and modeling. (see Map C1)
- 'Floodmaps.ie' – The national flood hazard mapping website operated by the Office of Public Works, where information about past flood events is recorded and made available to the public. 'Flood point' and 'flood extent' information is available on this settlement and has been noted. (see Map C4)
- OPW's Catchment Flood Risk Assessment and Management Scheme (CFRAM). There is no fluvial CFRAM mapping for Bray, however there is CFRAM Tidal AEP Event mapping (see Map C9)
- Alluvial deposits maps of the Geological Survey of Ireland – indicating areas that have flooded in the past (the source of alluvium) (see Map C2)
- Examination of the old '6 Inch' maps (see Map C3)
- Walk over survey to assess potential sources of flooding
- Discussions with local people
- Consultation with the engineering section of Wicklow County Council
- An examination of contours (see Map C2)
- Aerial photographs
- Any in-house Flood Risk Assessments of the Dargle River or assessments submitted as part of planning applications.
- River Dargle (Bray) Flood Defence Study (2007)

In preparing the Flood Zones, a precautionary approach has been applied, where necessary, to reflect uncertainties in flooding datasets and risk assessment techniques.

1.5 The River Dargle (Bray) Flood Defence Scheme

Bray has experienced severe fluvial flooding from the River Dargle. As a result of this, a flood defence study was carried out of the river between Route N11 and the sea. Mathematical and physical modelling was carried out to Office of Public Works specifications using various combinations of return periods for river flooding up to one in a hundred years and tidal events up to one in 200 years. Map C6 shows the maximum extent of flooding modeled for the 'do nothing' situation.

The Flood Defence Scheme commenced construction in 2012 and it is expected to be completed in 2017. Map C7 and C8 presents the flood modelling for the post scheme scenario. It is acknowledged that a residual risk of flooding may remain at such defended locations and thus the sequential approach and the 'Justification Test' are to be applied.

In accordance with flood risk management principles, and in order to ensure the continued development of Bray in line with its designation as a 'Metropolitan Consolidation Town', the Council is committed to the implementation of the approved River Dargle Flood Defence Scheme. This scheme will give protection to all vulnerable properties adjacent to the Dargle River and facilitate the expansion of the town centre thereby ensuring its future economic and social prosperity.

1.6 The Sequential Approach and Justification Test

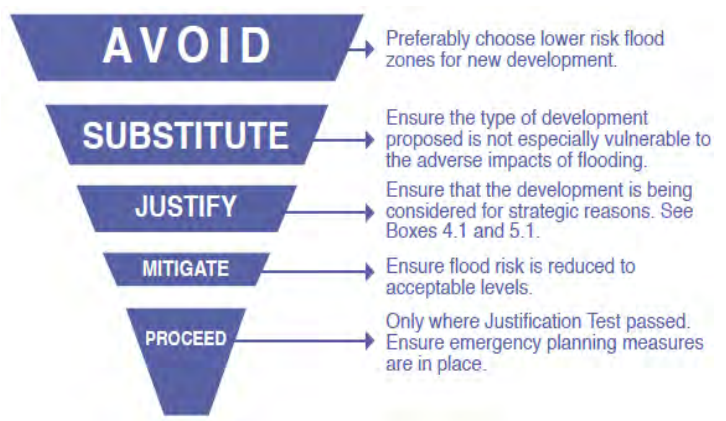
Each stage of the SFRA process aims to adopt a sequential approach to management of flood risk in the planning process. The sequential approach to flood risk management is set out in Figure 1 (Source *Planning System and Flood Risk Management Guidelines for Planning Authorities' DoEHLG/OPW 2009*). In summary, the key principles of the sequential approach include:

1. Avoid flood risk, where possible;
2. Substitute less vulnerable uses, where avoidance is not possible; and
3. Mitigate and manage the risk, where avoidance and substitution are not possible.

In other words, where possible, development in areas identified as being at flood risk should be avoided; this may necessitate de-zoning lands within the plan area. If de-zoning is not possible, then re-zoning from a higher vulnerability land use, such as residential, to a less vulnerability use, such as open space, may be required. Where re-zoning is not possible, exceptions to the development restrictions are provided for through the '**Justification Test**'. The plan-making Justification Test is used at the plan preparation and adoption stage where a planning authority needs to consider the future development of areas at a high or moderate risk of flooding, for uses or development vulnerable to flooding that would generally be inappropriate. In such cases, the planning authority must be satisfied that it can clearly demonstrate on a solid evidence base that the zoning or designation for development will satisfy the Justification Test.

Tables 1.1 and 1.2 below illustrates those types of development that would be appropriate to each flood zone and those that would be required to meet the Justification Test. Section 2.2 sets out the Justification Test for plan making. Where the planning authority considers that land should be zoned for 'inappropriate development' that

Figure 1: Sequential approach



does not meet the criteria of the Justification Test, the flooding risk should be mitigated, so that the flood risk is reduced to an acceptable level by means of land use strategies or by means of detailed proposals for the management of flood risk, as addressed in a Flood Risk Assessment.

Table 1.1: Matrix of vulnerability versus flood zones to illustrate appropriate development and that required to meet the justification test

DEVELOPMENT TYPES			
	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

Source: DoEHLG The Planning System and Flood Risk Management Guidelines

Table 1.2: Classification of vulnerability of different types of development

CLASSIFICATION OF VULNERABILITY OF DIFFERENT TYPES OF DEVELOPMENT	
Vulnerability class	Land uses and types of development which include*:
Highly vulnerable development (including essential infrastructure)	Garda, ambulance and fire stations and command centres required to be operational during flooding; Hospitals; Emergency access and egress points; Schools; Dwelling houses, student halls of residence and hostels; Residential institutions such as residential care homes, children’s homes and social services homes; Caravans and mobile home parks; Dwelling houses designed, constructed or adapted for the elderly or other people with impaired mobility; and Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less vulnerable development	Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions; Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans; Land and buildings used for agriculture and forestry; Waste treatment (except landfill and hazardous waste); Mineral working and processing; and Local transport infrastructure.
Water compatible development	Flood control infrastructure; Docks, marinas and wharves; Navigation facilities; Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; Water-based recreation and tourism (excluding sleeping accommodation); Lifeguard and coastguard stations; Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan).

Source: DoEHLG The Planning System and Flood Risk Management Guidelines

*Uses not listed here should be considered on their own merits

2. STAGE ONE STRATEGIC FLOOD RISK IDENTIFICATION (FRI)

As part of this Strategic Flood Risk Assessment, the areas comprising the Level 6 settlement of Kilmacanogue and the Level 9 'Rural Cluster' of Kilmurray, which have either no specific land use zonings or general zonings that potentially allow for a range of uses that cannot be determined at this stage of plan making, have had 'Stage One Flood Risk Identification' carried out. The sources of information used in this assessment are presented in section 1.4 above and on maps C1 to C5 and C9.

Within the Bray Municipal District Area, all areas outside of the designated settlements or specific one off zoning have been classed as the 'rural area' / the 'open countryside' in the settlement hierarchy of the County Development Plan. The County Development Plan and the Bray Municipal District Local Area Plan generally do not provide for land use zonings in this rural area and therefore, in line with the Flood Risk Guidelines, a broad (area-wide) 'Stage One Flood Risk Identification' has also been carried out.

The purpose of the 'Stage One Flood Risk Identification' is to identify whether there may be any flooding or surface water management issues related to the area and is presented in on Map SFRA 1. Where areas have been identified as being at risk from flooding or surface water management issues related to the area of proposed development, this may warrant further investigation at the planning application stage. The 'Stage One Flood Risk Identification', has been carried out for Kilmacanogue and Kilmurray and is presented in Sections 2.3 and 2.4 respectively.

2.1 Risk Identification

'Identification' is the process for deciding whether a plan or project requires a flood risk assessment and is essentially a desk-based exercise based on existing information. In order to establish whether a flood risk issue exists or may exist in the future, a range of sources have been consulted.

2.2 Indicators of Flood Risk

The primary source of information is the flood zone maps produced by the OPW (Preliminary Flood Studies, Areas for Further Assessment, CFRAM mapping – these are only available for limited areas/watercourses). Given the limitations to these maps, the Flood Risk Guidelines also recommend that flooding from other sources such as surface water systems or adjoining hillsides that are difficult to map, need to be carefully considered.

This Stage 1 FRI identifies flooding or surface water management issues in the Municipal District (outside of Bray and Enniskerry) that may warrant further investigation at planning application level. Available flood risk indicators are mapped on a Municipal District level.

Other sources of information available to be considered at the appropriate level or at planning application level, alongside the sources of information listed in section 1.4 above, include the following:

- Photography including aerial photography;
- Local knowledge;
- Regional Planning Guidelines and associated Regional Flood Risk Appraisal;
- River Basin Management Plans and associated documents;
- Alluvial soil mapping;
- Contour mapping;
- Local Authority knowledge including areas where flood risk management infrastructure and coastal protection/defence structures have been constructed.

2.3 Flood Risk Zones and Justification Test for Kilmacanogue Settlement

Plan Format

With respect to **Level 6** settlement plans, a simple zoning format is provided; the plan map indicates the boundary of the settlement plan which includes only three zones – the primary, secondary and tertiary zones. This is in recognition

of the smaller scale of this settlement and the less well defined distinction between different land uses evident in such a small town. The land use zoning objectives and the associated vision for each zone are as follows:

Primary Lands

Vision: To create a consolidated and vibrant mixed use settlement centre that is the focal point for the delivery of the retail, commercial, community and activity needs of the local population and its hinterland, and to promote this area for tourist uses and for residential use, with an animated and high quality streetscape, whilst ensuring the protection of the special character and heritage of this area.

Secondary Lands

Vision: To provide for the sustainable development of a mix of uses including residential, employment, community and recreational uses that provide for the needs of the existing settlement and that allows for the future growth of the settlement.

Tertiary Lands: Peripheral Zone

Vision: To protect and provide for agriculture and amenity in a manner that protects the physical and visual amenity of the area and demarcates the urban and rural boundary

Flood Risk Identification for Kilmacanogue Settlement (See map SFRA 2 (c))

As there are no specific land uses targeted for each of the three zones in the Kilmacanogue plan, but rather all zones are in essence 'mixed use' zones a generic approach has been undertaken, with the 3 zones being assessed and then where necessary, a specific mitigation objective has been incorporated into that plan. Where any of the lands within a Primary, Secondary or Tertiary zone include lands that are at high and/or moderate risk of flooding (Flood Zone A and/or B), the following assessments of flood risk has been undertaken for each zone within the draft plan area:

Assessment of Primary Zone within an area of high and/or moderate risk of flooding

The overall land use objective for these lands allows for a broad mix of uses including retail, commercial, social and housing that provides for the needs of the existing settlement and that allows for the future growth of the settlement. It is clear therefore that these lands are being promoted for uses that may be vulnerable to flooding that would generally be inappropriate as set out in Table 3.2 of the Guidelines. As such, the justification test is required to be applied.

Level 6 settlements are targets for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, as amended. Under the Wicklow County Development Plan, these settlements are designated 'Level 6 Rural Towns'. Under the 'Core Strategy' of the CDP, the population of the towns are targeted to grow. By 2025 the following population targets are set out in the County Development Plan: Kilmacanogue - 923

The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:

- i. Is essential to facilitate regeneration and/or expansion of the centre of the settlement;
- ii. Comprises significant previously developed and/or under-utilised lands;
- iii. Is within or adjoining the core of an established or designated settlement;
- iv. Will be essential in achieving compact or sustainable settlement growth;
- v. There are no suitable alternative lands for the particular designation or development type, in areas at lower risk of flooding within or adjoining the core of the settlement.

A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment (as part of the development plan preparation process), which demonstrates that flood risk to the development of the lands will not cause unacceptable adverse impacts elsewhere.

Having considered the criteria of the test, it is considered that the justification test is satisfied. The majority of the lands within the Primary Zone designation are currently developed for Primary Zone uses. As such, it is considered appropriate to retain this designation. With respect to any undeveloped site within this designation, these lands are identified as essential lands to facilitate the regeneration and/or expansion of the town, providing for new mixed use development in the centre, subject to the proviso that only 'less vulnerable' uses will be permitted on lands identified to be at a high or moderate risk of flooding. Flood risk can be managed at the Development Management stage, in accordance with the Level 6 Mitigation Objective and the flood risk objectives of the County Development Plan shall apply.

Assessment of Secondary Zone within an area of high and/or moderate risk of flooding

The overall land use objective for Secondary Zone allows for a broad mix of uses including residential, employment, community and recreational that provides for the needs of the existing settlement and that allows for the future growth of the settlement. It is clear therefore that these lands are being promoted for uses that may be vulnerable to flooding that would generally be inappropriate as set out in Table 3.2 of the Guidelines. As such, the justification test is required to be applied.

Level 6 settlements are targets for growth under the National Spatial Strategy, regional planning guidelines and statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, as amended. Under the Wicklow County Development Plan, these settlements are designated a Level 6 Rural Towns. Under the 'Core Strategy' of the CDP, the population of the towns are targeted to grow. By 2025 the following population targets are set out in the County Development Plan: Kilmacanogue - 923

The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:

- i. Is not essential to facilitate regeneration and/or expansion of the centre of the settlement;
- ii. Comprises significant previously developed and/or under-utilised lands;
- iii. Is not within or adjoining the core of an established or designated settlement;
- iv. Will not be essential in achieving compact or sustainable settlement growth;
- v. There are suitable alternative lands for the particular designation or development type, in areas at lower risk of flooding within or adjoining the core of the settlement.

A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development of the lands will not cause unacceptable adverse impacts elsewhere.

Having considered the criteria of the test, it is considered that the justification test would be satisfied for all the lands that are currently developed for Secondary zone uses and where lands are not developed, the justification test failed.

- Where the justification test is satisfied, it is considered appropriate to retain this designation. However those lands currently undeveloped and identified to be at a high or moderate risk of flooding would not be suitable for any vulnerable use, including housing, unless a detailed flood risk assessment is prepared at the development management stage indicating that mitigation measures could suitably overcome flood issues. The Level 6 Mitigation Objective and the flood risk objectives of the County Development Plan shall apply.
- Where the justification test failed, it is considered appropriate to retain the designation. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, the Level 6 Mitigation Objective and the flood risk objectives of the County Development Plan shall apply.

Assessment of Tertiary Zone within an area of high and/or moderate risk of flooding

The 'tertiary zone' includes lands that are at a high and moderate risk of flooding. The overall land use objective for

these lands allows for broad mix of uses including limited residential development, community and recreational uses that provide for the needs of the existing settlement and that allows for the future growth of the settlement. It is clear therefore that these lands are being promoted for uses that may be vulnerable to flooding that would generally be inappropriate as set out in Table 3.2 of the Guidelines. As such, the justification test is required to be applied.

These settlements are targets for growth under the National Spatial Strategy, regional planning guidelines, and statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, as amended. Under the Wicklow County Development Plan, these settlements are designated a Level 6 Rural Towns. Under the 'Core Strategy' of the CDP, the population of the towns are targeted to grow. By 2025 the following population targets are set out in the County Development Plan: Kilmacanogue - 923

The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:

- i. Is not essential to facilitate regeneration and/or expansion of the centre of the settlement;
- ii. Comprises significant previously developed and/or under-utilised lands;
- iii. Is not within or adjoining the core of an established or designated settlement;
- iv. Will not be essential in achieving compact or sustainable settlement growth;
- v. There are suitable alternative lands for the particular designation or development type, in areas at lower risk of flooding within or adjoining the core of the settlement.

A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development of the lands will not cause unacceptable adverse impacts elsewhere.

Having considered the criteria of the test, it is considered that the justification test would be satisfied for all the lands that are currently developed for Tertiary zone uses and the justification test would fail where lands are not developed.

- Where the justification test is satisfied, it is considered appropriate to retain this designation. However those lands currently undeveloped and identified to be at a high or moderate risk of flooding would not be suitable for any vulnerable use, including housing, unless a detailed flood risk assessment is prepared at the development management stage indicating that mitigation measures could suitably overcome flood issues. The Level 6 Mitigation Objective and the flood risk objectives of the County Development Plan shall apply.
- Where the justification test failed, it is considered appropriate to retain the designation. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, the Level 6 Mitigation Objective and the flood risk objectives of the County Development Plan shall apply.

Mitigation Objectives

In regard to the assessment of the three land use zones, the following general Level 6 Mitigation Objective has been included in the Level 6 Settlement Plan 'Introduction' of the County Development Plan and shall apply where necessary:

Flood Risk Assessment 'Level 6 Mitigation Objective'

To restrict the types of development permitted in Flood Zone A and Flood Zone B to the uses that are 'appropriate' to each flood zone, as set out in Table 3.2 of the Guidelines for Flood Risk Management (DoEHLG, 2009). The planning authority may consider proposals for development that may be vulnerable to flooding, and that would generally be inappropriate as set out in Table 3.2 of the Guidelines, subject to all of the following criteria being satisfied:

- The planning authority is satisfied that all of the criteria set out in the justification test as it applies to development management (Box 5.1 of the Guidelines) are complied with.
- The development of lands for the particular use is required to achieve the proper planning and sustainable development of the settlement, and complies with at least one of the following:
 - i. The development is located within the 'primary lands' and is essential for the achievement of the 'vision' or for the achievement of a specific objective for these lands.
 - ii. The development comprises previously developed and/or under-utilised lands/sites,
 - iii. There are no suitable alternative lands for the particular use, in areas at lower risk of flooding.

Note: The flood risk objectives and policies of the Wicklow County Development Plan shall also apply.

2.4 Flood Risk Identification (FRI) Test for Kilmurray and the Open Countryside

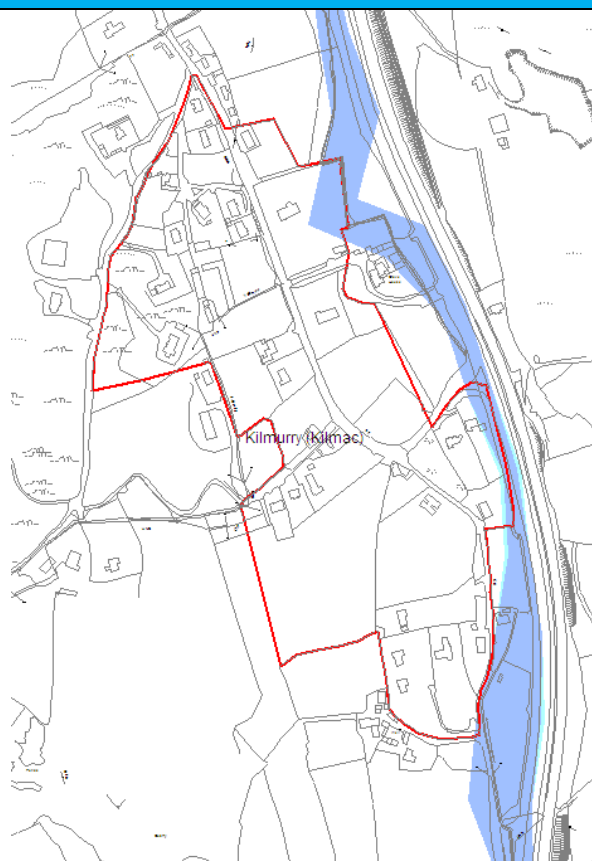
A Stage 1 Flood Risk Identification Test determines whether lands are in Flood Zone A, B or C and if so it determines what action is required of the developer and if so what action is required. The Kilmurray assessment and map is presented to follow; however please refer to map SFRA 1 for the open countryside presenting the Flood Zones A, B and C.

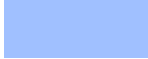
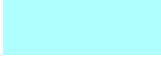

All lands within a settlement boundary fall within at least one of the flood zones A, B or C and certain actions are required when lands are within certain flood zones.

FRI TEST			
Flood Zone	Does the settlement have lands within the flood zone?	FRA Action Required?	Actions
A	YES	√ YES. The probability of flooding from rivers/watercourses and the sea is high.	Where development is proposed in flood zone A the developer shall: <ul style="list-style-type: none"> - comply with the objectives of the Wicklow County Development Plan 2016-2022, - comply with Flood Objectives FL1 to FL9 and - carry out the sequential approach in the Flood Risk Guidelines and Section 1 of this SFRA and the developer shall carry out the requirements of the sequential approach.
B	YES	√ YES. The probability of flooding from rivers/watercourses and the sea is moderate.	Where development is proposed in flood zone B the developer shall: <ul style="list-style-type: none"> - comply with the objectives of the Wicklow County Development Plan 2016-2022, - comply with Flood Objectives FL1 to FL9 and - carry out the sequential approach in the Flood Risk Guidelines and Section 1 of this SFRA and the developer shall carry out the requirements of the sequential approach.
C	YES	√ May be required. The probability of flooding from rivers/watercourses and the sea is low.	Localised flooding from sources other than rivers/watercourses and the coast can still occur and may need to be taken into account at the planning application stage. Where development is proposed in flood zone C the developer shall comply with the provisions of the Flood Risk Guidelines and the County Development Plan.

2.4 Flood Risk Identification for Kilmurray Settlement

Kilmurray (Kilmacanogue)



	Legend	FRIA TEST	ACTION REQUIRED
	Settlement boundary (red outline)		
Land within Flood Zone A		YES	√ YES
Land within Flood Zone B		YES	√ YES
Land within Flood Zone C	**No Shade** 	YES	√ May be required

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.

**The flood zones described above are indicative of river and coastal flooding only. They should not be used to suggest that any areas are free from flood risk, since they do not include the effects of other forms of flooding such as from groundwater or artificial drainage systems.

Note: Maps are not to scale

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3.1 Flood Risk Assessment

Following the guidelines, this flood risk assessment shows the zoning objectives of the plan and their typical permitted uses. In accordance with the guidelines an assessment was undertaken to determine the appropriateness of land uses (allowed by virtue of land use zoning) to each flood zone. The assessment is undertaken in accordance with Tables 3.1 and 3.2 of the guidelines and measures vulnerability to flooding of different types of development, to illustrate appropriate development that is required to meet the Justification Test. Where the zone is deemed to be appropriate no further action is required here in the FRA. Where the zone requires the Justification Test to be carried out, it is done so with any necessary mitigation measures recommended.

The Bray Municipal District Local Area Plan 2017 includes the following land use zonings:

ZONING	OBJECTIVE	DESCRIPTION
RE: Existing Residential	To protect, provide and improve residential amenities of existing residential areas	To provide for house improvements, alterations and extensions and appropriate infill residential development in accordance with principles of good design and protection of existing residential amenity. In existing residential areas, the areas of open space permitted, designated or dedicated solely to the use of the residents will normally be zoned 'RE' as they form an intrinsic part of the overall residential development; however new housing or other non-community related uses will not normally be permitted.
R-HD: New Residential – High Density	To protect, provide and improve residential amenities in a high density format.	To facilitate for the provision of high quality, high density new residential developments with excellent layout and design, well linked to the town centre and community facilities. To provide an appropriate mix of house sizes, types and tenures in order to meet household needs and to promote balanced communities.
R20: New residential	To protect, provide and improve residential amenities at a density up to 20 units/ha.	To facilitate for the provision of high quality new residential developments at appropriate densities with excellent layout and design, well linked to the town centre and community facilities. To provide an appropriate mix of house sizes, types and tenures in order to meet household needs and to promote balanced communities.
R15: New residential Low Density	To protect, provide and improve residential amenities at a lower density not exceeding 15 units/ha.	To facilitate for the provision of high quality new residential environments with excellent layout and design, reflecting the low-medium density character of the surrounding area.
R10: New residential Rural Fringe	To protect, provide and improve residential amenities at a lower density not exceeding 10 units/ha.	
R Special: Special Residential	To protect, provide and improve residential amenities in a format and a density specified in the relevant plan.	To facilitate for the provision of high quality new residential environments with excellent layout and design, reflecting the density and character of the surrounding area.
TC: Town Centre	To provide for the development and improvement of appropriate town centre uses including retail,	To develop and consolidate the existing town centres to improve vibrancy and vitality with the densification of appropriate commercial and residential developments ensuring a mix of commercial, recreational, civic, cultural, leisure, residential uses, and urban streets, while delivering a quality urban environment which

ZONING	OBJECTIVE	DESCRIPTION
	commercial, office and civic use, and to provide for 'Living Over the Shop' residential accommodation, or other ancillary residential accommodation.	will enhance the quality of life of resident, visitor and workers alike. The zone will strengthen retail provision in accordance with the County Retail Strategy, emphasise town centre conservation, ensure priority for public transport where applicable, pedestrians and cyclists while minimising the impact of private car based traffic and enhance and develop the existing centres' fabric.
VC: Village Centre	To provide for the development and improvement of appropriate village centre uses in the identified area, including retail, commercial, office and civic use, and to provide for 'Living Over the Shop' residential accommodation, or other ancillary residential accommodation.	To develop and consolidate the village centre area in an appropriate manner and to an appropriate scale given its role as a secondary or subsidiary area to the main town centre.
LSS – Local Shops & Services	To provide for small scale local neighbourhood shops and services	To facilitate the limited development of small scale local neighbourhood shops and retail services and other local service uses that meet only the retail or service needs of residents in the immediate catchment and are not of such a scale or type that would detract or draw trade from lands designated town centre.
E: Employment	To provide for the development of enterprise and employment	To facilitate the further development and improvement of existing employment areas and to facilitate opportunities for the development of new high quality employment and enterprise developments in a good quality physical environment.
E Special: Employment	To provide for the development of enterprise and employment at Kilruddery.	To provide for enterprise and employment development on the grounds of Kilruddery estate that is not strictly related to the tourism product of the estate, but is compatible with the objectives of the KD zone adjacent (see Bray Specific Local Objective SLO-1 for Kilruddery)
FI: Film Industry	To provide for film/TV production related development	To provide for the development of and expansion of the existing studios at Ardmore; development of these lands shall be strictly limited to facilities for the production of film, TV, animation etc including any directly associated spin offs such as visitor facilities; however, residential development or other non film related commercial activities are not to be permitted.
CE: Community & Education	To provide for civic, community and educational facilities	To facilitate the development of necessary community, health, religious, educational, social and civic infrastructure.
AOS: Active Open Space	To protect and enhance existing and provide for new active open space	To facilitate the further development and improvement of existing active open spaces, formal exercise areas, sports grounds, playing pitches, courts and other games areas and to facilitate opportunities for the development of new high quality active recreational areas.
OS1: Open Space	To protect and enhance existing and provide for recreational open space	To facilitate the further development and improvement of existing parks and casual play areas, to facilitate opportunities for the development of new high quality amenity open areas and to restrict developments / activities (such as the use or development of such lands for formal sports grounds for organisations that are not available for a broad range of the public) that would reduce the

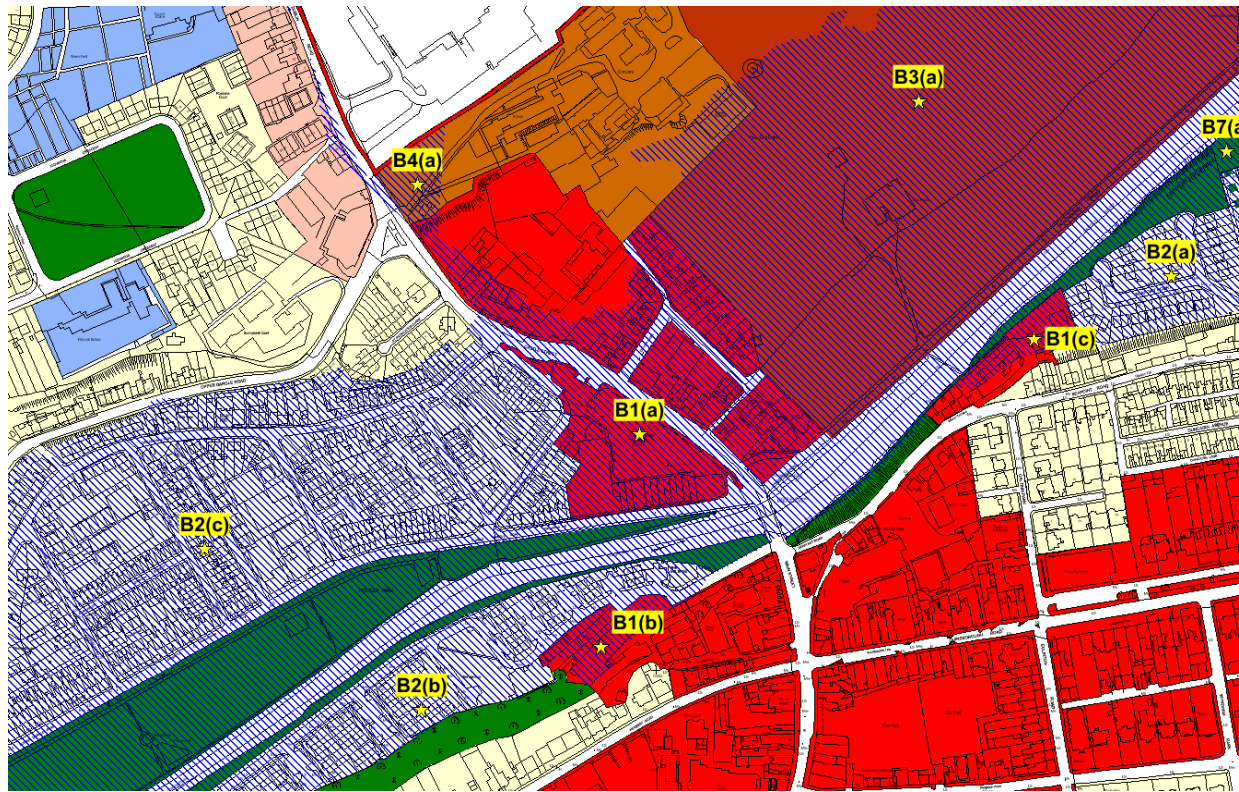
ZONING	OBJECTIVE	DESCRIPTION
		opportunities for use by the wider public.
OS2: Open Space	To protect and enhance existing open, undeveloped lands	To protect, enhance and manage existing open, undeveloped lands that comprise flood plains, buffer zones along watercourses and rivers, steep banks, green breaks between built up areas, green corridors and areas of natural biodiversity.
PU: Public Utility	To maintain lands providing services infrastructure	To allow for lands to be designated for public utilities such as waste water treatment plants, large ESB sub-stations, gasworks etc
T: Tourism	To provide for tourism related development	To provide for the sustainable development of tourism related structures, uses and infrastructure. To provide for the development of tourism facilities including accommodation of an excellent sustainable design and aesthetic quality. Tourism related office, civic and cultural and commercial development will be facilitated.
MU: Mixed Use	To provide for mixed use development	The nature of the mixed use development envisaged for any particular site is set out in the text of the plan.
SF: Bray Seafront	To provide for the development and improvement of appropriate seafront uses	To protect and enhance the character of the seafront area and to provide for mixed-use development including appropriate tourism, retail, leisure, civic and residential uses. The Seafront area shall be promoted as the primary tourist, recreational and leisure centre of Bray.
GTH: Bray Gateway & Transport Hub	To provide for the development and improvement of appropriate gateway and transport hub uses	To provide for the development and improvement of public transportation infrastructure. The area shall be developed as a gateway to the town with clear linkages to the Town Centre and the Seafront. The area is considered suitable for higher density mixed use development including retail, commercial, office, residential and civic use.
KD: Kilruddery Demesne Conservation & Tourism Zone	To protect and enhance the distinctive historical character, setting and amenity value of Kilruddery Demesne and provide for appropriate and sympathetic conservation, amenity, tourism and community uses that enhance awareness, appreciation and accessibility of the area and to resist development that would detract from its integrity and setting.	To provide for the development and improvement of Kilruddery Demesne in a manner sensitive to its long term protection and conservation; to allow for a mix of conservation, amenity, tourism and community uses strictly on the basis that such uses can be shown to enhance the estate, its amenity value and its visitor product.

3.2 Flood Risk Zones and Justification Test for Bray Town and Environs Settlement

The following is an analysis of the vulnerability of land uses on sites that fall within Flood Zone A and B, and where appropriate, the application of the Justification Test for plan making. All sites are indicated on Map SFRA 2 (a).

LAND USE ZONE: Town Centre (TC)

Site no. B1 (a), (b) and (c) Bray

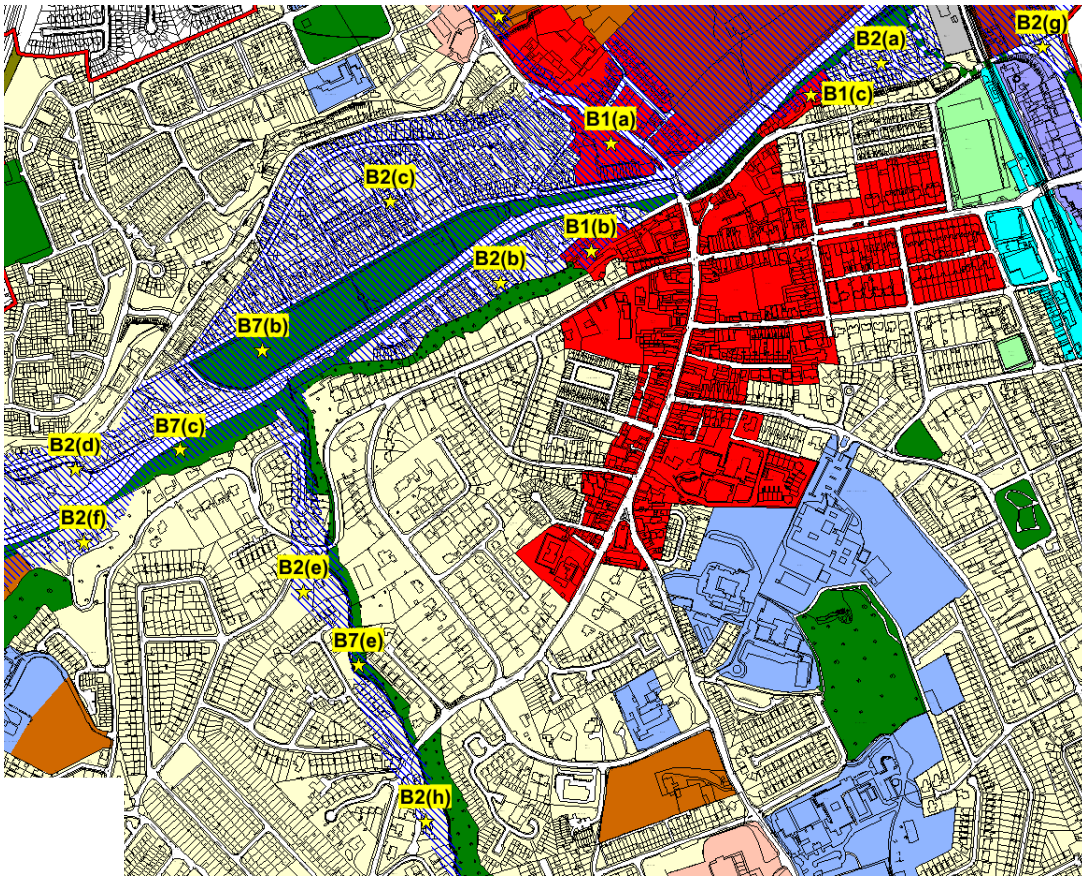


Land zoning	Town Centre
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

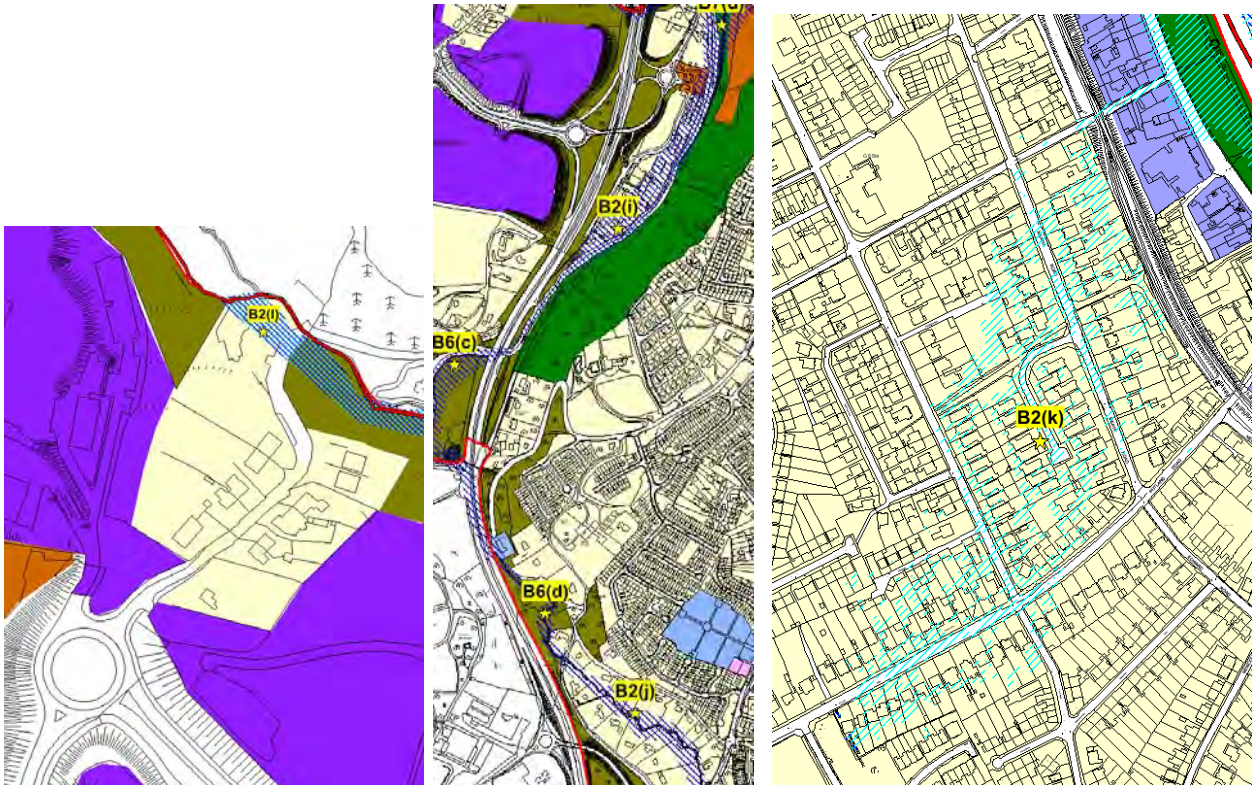
Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 –Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	Yes
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Yes
	(iv) Will be essential in achieving compact or sustainable urban growth;	Yes
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of	Assessment of flood

	the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	risk has been incorporated into the Plan SEA process.
Conclusion		
Justification test satisfied.		
Recommendation		
No further action required.		

Site no. B2 (a), (b), (c), (d), (e), (f), (g) and (h) Bray



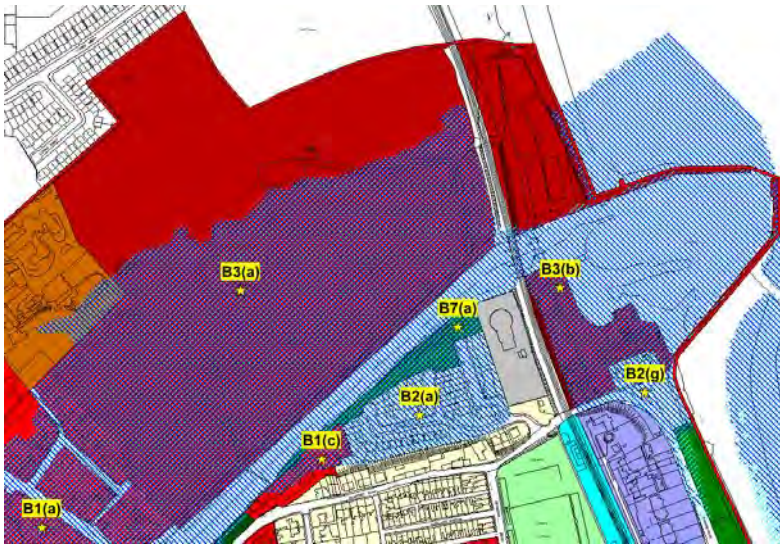
Site no. B2 (i), (j) and (k) Bray



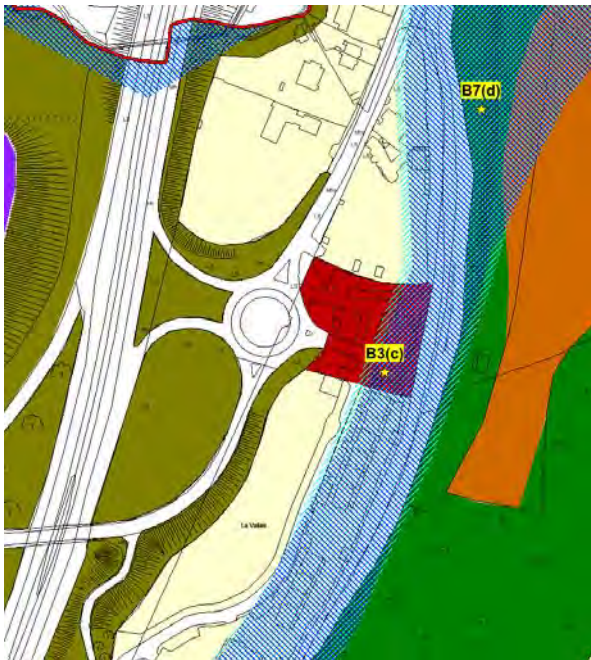
Land zoning	Existing residential
Flood Zone	A & B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 –Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	No
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	No
	(iv) Will be essential in achieving compact or sustainable urban growth;	No
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		
Justification test failed.		
Recommendation		
These lands are currently developed for permitted housing. As such, it is considered appropriate to retain the RE zoning objective. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, flood mitigation measures are required (see Section Mitigation Objectives below).		

Site no. B3 (a) and (b) Bray



Site no. B3 (c) Bray

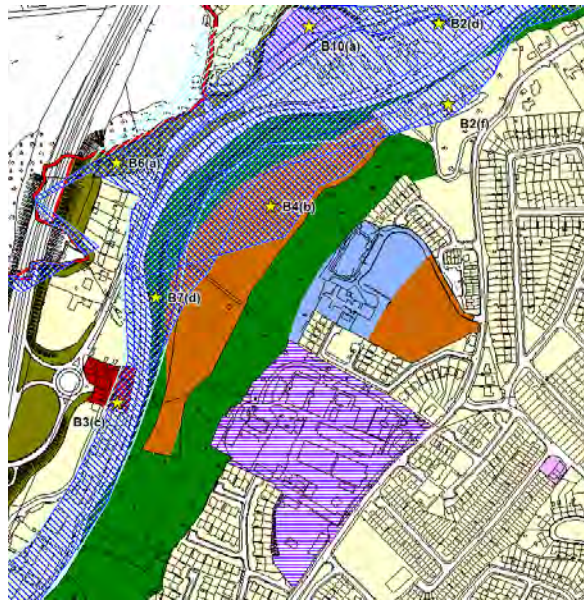
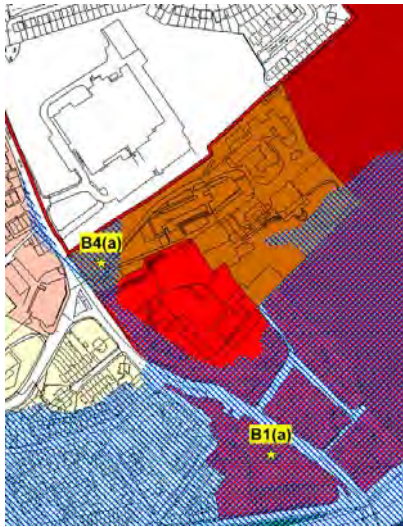


Land zoning	Mixed Use
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 –Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.

2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	Site B3 (a) - Yes Site B3 (b) - Yes Site B3 (c) - No
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Site B3 (a) - Yes Site B3 (b) - Yes Site B3 (c) - No
	(iv) Will be essential in achieving compact or sustainable urban growth;	Site B3 (a) - Yes Site B3 (b) - Yes Site B3 (c) - No
(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	Site B3 (a) - Yes Site B3 (b) and (c) - N/A - these lands are developed.	
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		
Site B3 (a) - Justification test satisfied. Site B3 (b) - Justification test satisfied. Site B3 (c) - Justification test failed.		
Recommendation		
Site B3 (a) and (b) - No further action required. Site B3 (c) - These lands are currently developed for permitted mixed use. As such, it is considered appropriate to retain the MU zoning objective. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, flood mitigation measures are required (see Section Mitigation Objectives below).		

Site no. B4 (a) and (b) Bray



Land zoning	New Residential – High Density
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 – Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	B4(a)-Yes B4(b)-No
	(ii) Comprises significant previously developed and/or under-utilised lands;	B4(a)- Yes B4(b)- No
	(iii) Is within or adjoining the core of an established or designated urban settlement;	B4(a)- Yes B4(b)- No
	(iv) Will be essential in achieving compact or sustainable urban growth;	Yes
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	B4(a) N/A - these lands are developed B4(b)Yes.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		

B4(a)- Justification test satisfied.

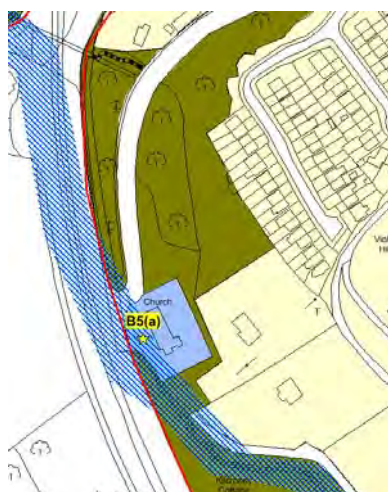
B4(b)-Justification test failed.

Recommendation

Site B4 (a) - No further action required.

Site B4 (b) – As part of the River Dargle Flood Defence Scheme these lands have had flood defence works carried out and are therefore considered to be defended. It is acknowledged that flood defences should be ignored in determining flood zones as defended areas still carry a residual risk of flooding from overtopping, failure of the defences and deterioration due to lack of maintenance; therefore should development of these lands be proposed, flood mitigation measures are required (see Section Mitigation Objectives below).

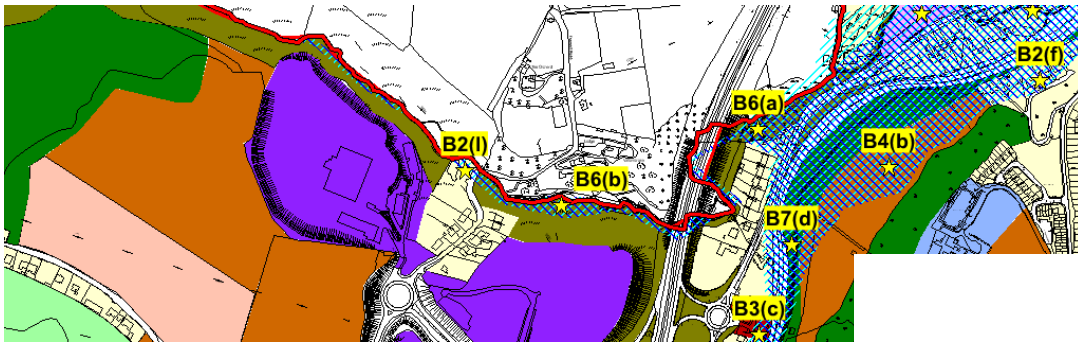
Site no. B5(a) Bray



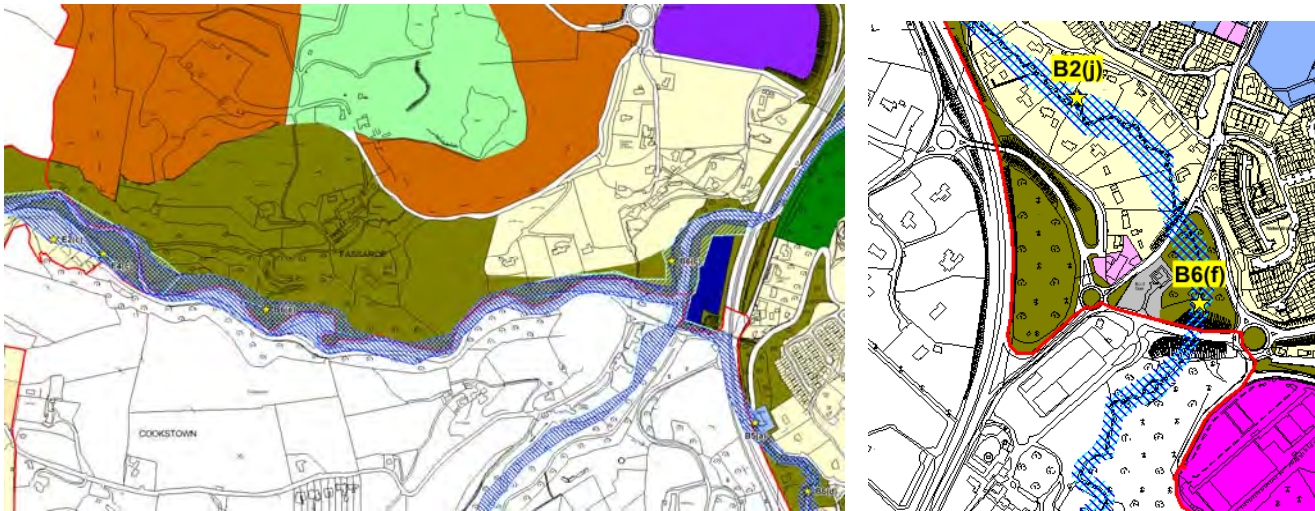
Land zoning	Community & Education
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 –Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	No
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	No
	(iv) Will be essential in achieving compact or sustainable urban growth;	No
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		
Justification test failed.		
Recommendation		
These lands are currently developed for permitted community uses. As such, it is considered appropriate to retain the CE zoning objective. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, flood mitigation measures are required (see Mitigation Objectives below).		

Site no. B6 (a) and (b) Bray



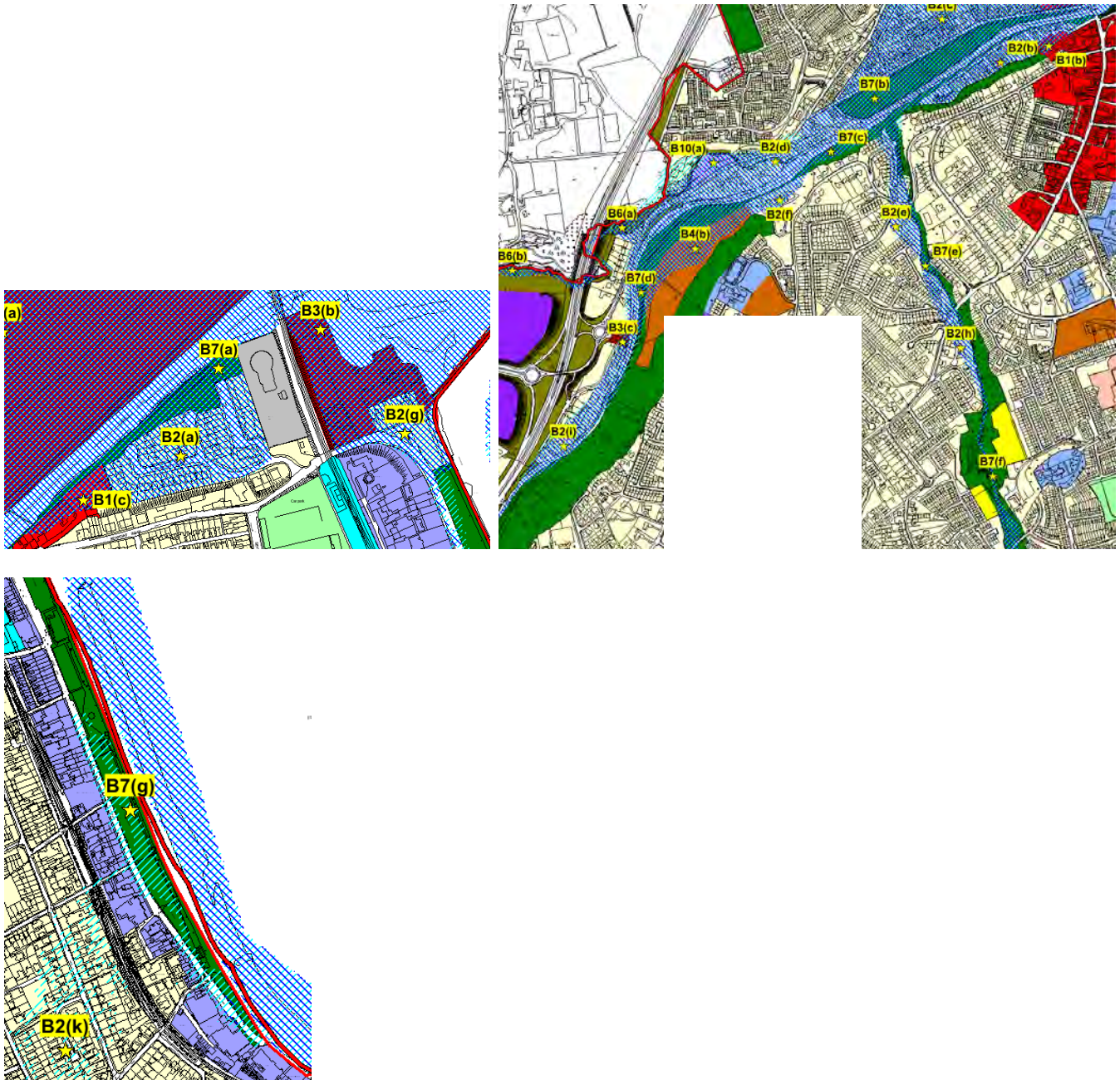
Site no. B6(c), (d), (e) and (f) Bray



Land zoning	Open Space 2
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning appropriate
Requirement for Justification Test	No

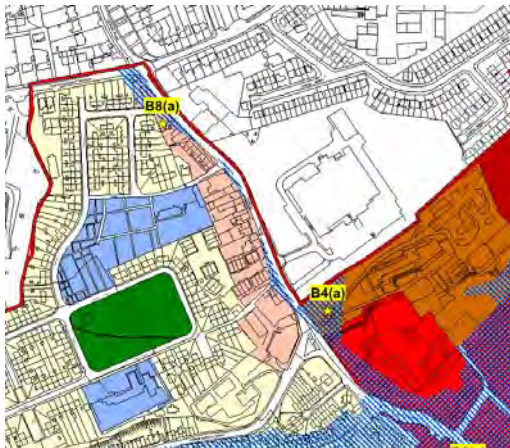
LAND USE ZONE: Open Space 1 (OS1)

Site no. B7(a), (b), (c), (d), (e), (f) and (g) Bray



Land zoning	Open Space 1
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning appropriate
Requirement for Justification Test	No

Site no. B8 (a) Bray

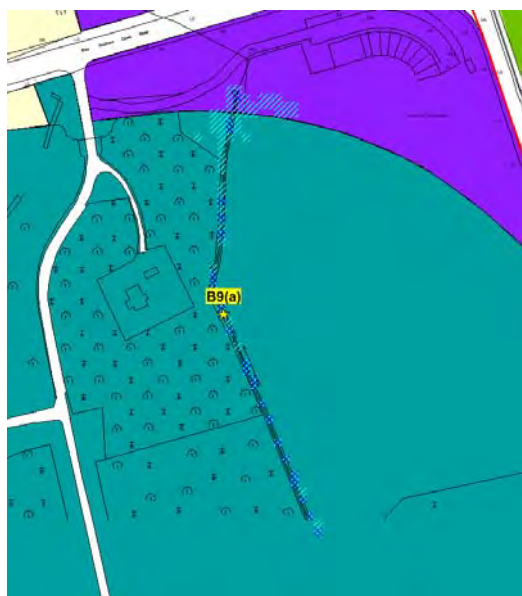


Land zoning	Neighbourhood Centre
Flood Zone	A & B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 –Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	No
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	No
	(iv) Will be essential in achieving compact or sustainable urban growth;	No
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		
Justification test failed.		
Recommendation		
These lands are currently developed for permitted neighbourhood centre. As such, it is considered appropriate to retain the NC zoning objective. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, flood mitigation measures are required (see Section Mitigation Objectives below).		

LAND USE ZONE: Kilruddery Demesne Conservation & Tourism Zone (KD)

Site no. B9 (a) Bray

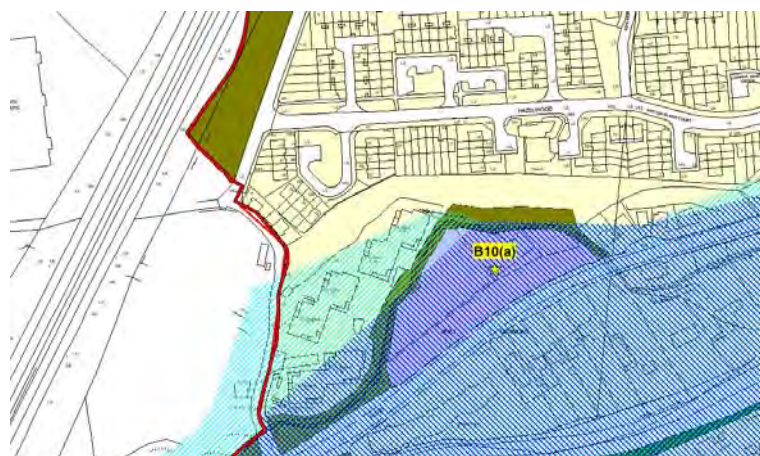


Land zoning	KD: Kilruddery Demesne Conservation & Tourism Zone
Flood Zone	B
Vulnerability of land use vs. Flood Zone	These lands are zoned for general conservation and tourism uses, of a format and location within the zone that has not yet been determined. It is possible therefore that these lands are being promoted for uses that may be vulnerable to flooding that would generally be inappropriate as set out in Table 3.2 of the Guidelines. As such, the justification test is required to be applied.
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 – Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	No
	(ii) Comprises significant previously developed and/or under-utilised lands;	No
	(iii) Is within or adjoining the core of an established or designated urban settlement;	No
	(iv) Will be essential in achieving compact or sustainable urban growth;	No
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	No
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately	Assessment of flood risk has been incorporated into

	managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	the Plan SEA process.
Conclusion		
Justification test failed.		
Recommendation		
It is considered appropriate to retain the designation given the non-specific development objectives for the area identified at a risk of flooding and the application of the flood risk mitigation objectives of the County Development Plan and this LAP.		

Site no. B10 (a) Bray



Land zoning	Local Shops and Services
Flood Zone	A & B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 –Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	No
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	No
	(iv) Will be essential in achieving compact or sustainable urban growth;	No
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		
Justification test failed.		
Recommendation		
These lands are currently developed for permitted local shops and services. As such, it is considered appropriate to retain the LSS zoning objective. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, flood mitigation measures are required (see Section Mitigation Objectives below).		

LAND USE ZONE: Bray Seafront (SF)

Site no. B11 (a) Bray

Land zoning	Bray Seafront
Flood Zone	B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

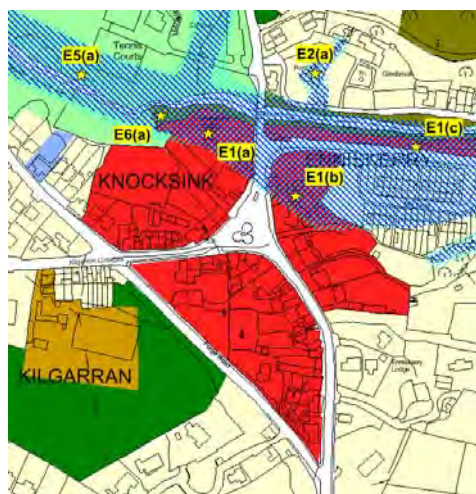
Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Bray is designated a 'Level 1 –Consolidation Town' within the metropolitan area of Dublin. Under the 'core strategy' of the CDP, the population of Bray town and environs is targeted to grow to 40,000. It is prioritised to accommodate a significant amount of population growth, to be a strong active town that is economically vibrant with high quality transport links to larger towns/cities.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	Yes
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Yes
	(iv) Will be essential in achieving compact or sustainable urban growth;	Yes
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		
Justification test satisfied.		
Recommendation		
No further action required.		

3.3 Flood Risk Zones and Justification Test for Enniskerry

The following is an analysis of the vulnerability of land uses on sites that fall within Flood Zone A and B, and where appropriate, the application of the Justification Test for plan making. All sites are indicated on Map SFRA 2 (b).

LAND USE ZONE: Town Centre (TC)

Site no. E1(a), (b) and (c) Enniskerry

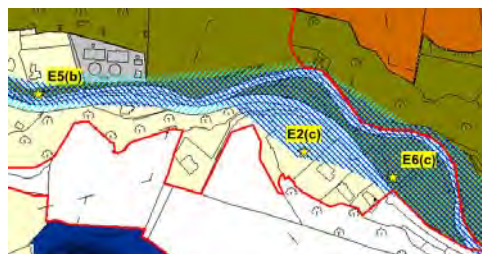
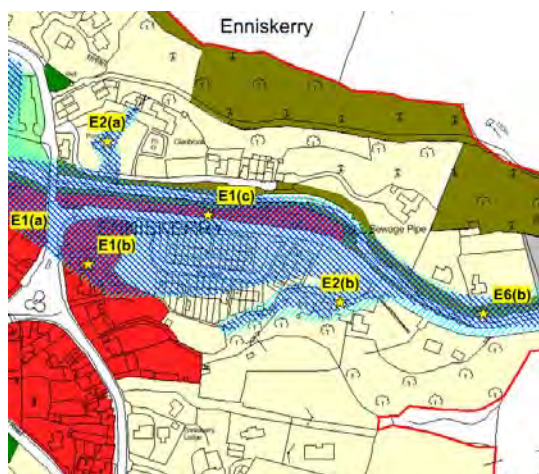


Land zoning	Town Centre
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Enniskerry is designated a 'Level 5 –Small Growth Town'. Under the 'core strategy' of the CDP, the population of Enniskerry is targeted to grow to 2,401.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	Yes
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	Yes
	(iv) Will be essential in achieving compact or sustainable urban growth;	Yes
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		
Justification test satisfied.		
Recommendation		
No further action required.		

LAND USE ZONE: Existing Residential (RE)

Site no. E2 (a), (b) and (c) Enniskerry



Land zoning	Existing residential
Flood Zone	A & B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Enniskerry is designated a 'Level 5 –Small Growth Town'. Under the 'core strategy' of the CDP, the population of Enniskerry is targeted to grow to 2,401.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	No
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	No
	(iv) Will be essential in achieving compact or sustainable urban growth;	No
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.

Conclusion

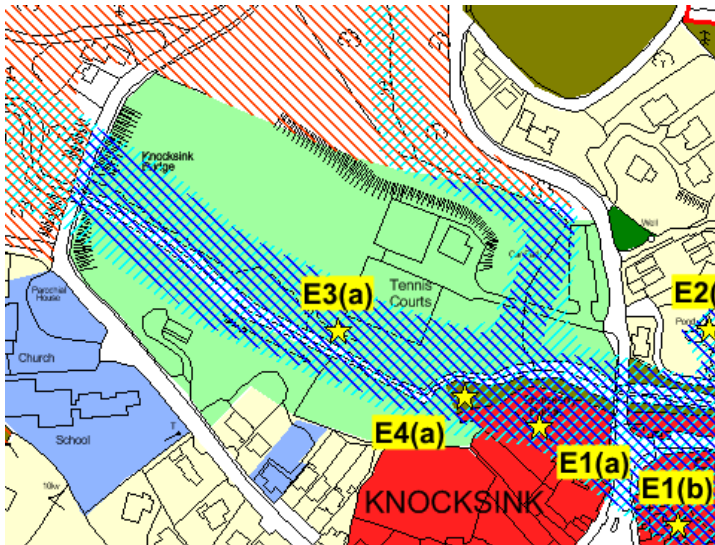
Justification test failed.

Recommendation

These lands are currently developed for permitted housing. As such, it is considered appropriate to retain the RE zoning objective. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, flood mitigation measures are required (see Section Mitigation Objectives below).

LAND USE ZONE: Active Open Space (AOS)

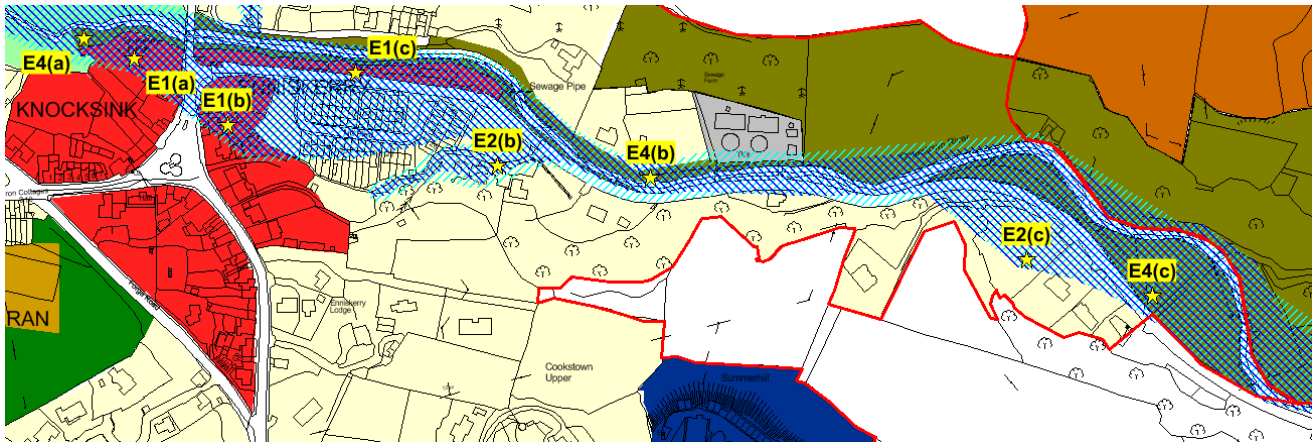
Site no. E3(a) and (b) Enniskerry



Land zoning	Active Open Space
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning appropriate
Requirement for Justification Test	No

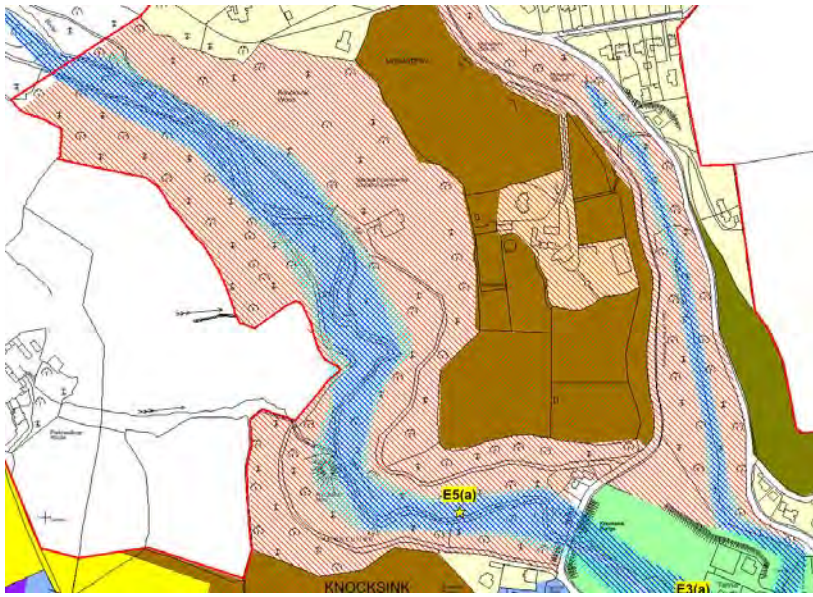
LAND USE ZONE: Open Space 2 (OS2)

Site no. E4(a) and (b) Enniskerry



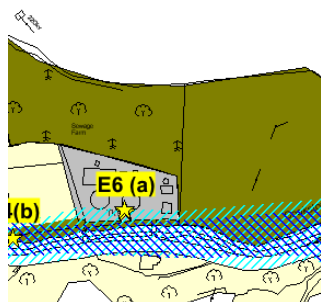
Land zoning	Open Space 2
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning appropriate
Requirement for Justification Test	No

Site no. E5 (a) Enniskerry



Land zoning	Conservation Area
Flood Zone	A and B
Vulnerability of land use vs. Flood Zone	Land use zoning appropriate
Requirement for Justification Test	No

Site no. E6 (a) Enniskerry



Land zoning	Public Utility
Flood Zone	A & B
Vulnerability of land use vs. Flood Zone	Land use zoning not appropriate
Requirement for Justification Test	Yes

Justification Test		
1	The urban settlement is targeted for growth under the National Spatial Strategy, regional planning guidelines, statutory plans as defined above or under the Planning Guidelines or Planning Directives provisions of the Planning and Development Act 2000, (as amended.)	Under the Wicklow County Development Plan 2010-2016, Enniskerry is designated a 'Level 5 –Small Growth Town'. Under the 'core strategy' of the CDP, the population of Enniskerry is targeted to grow to 2,401.
2	The zoning or designation of the lands for the particular use or development type is required to achieve the proper and sustainable planning of the urban settlement and in particular:	
	(i) Is essential to facilitate regeneration and/or expansion of the centre of the urban settlement;	No
	(ii) Comprises significant previously developed and/or under-utilised lands;	Yes
	(iii) Is within or adjoining the core of an established or designated urban settlement;	No
	(iv) Will be essential in achieving compact or sustainable urban growth;	No
	(v) There are no suitable alternative lands for the particular use or development type, in areas at lower risk of flooding within or adjoining the core of the urban settlement.	N/A - these lands are developed.
3	A flood risk assessment to an appropriate level of detail has been carried out as part of the Strategic Environmental Assessment as part of the development plan preparation process, which demonstrates that flood risk to the development can be adequately managed and the use or development of the lands will not cause unacceptable adverse impacts elsewhere.	Assessment of flood risk has been incorporated into the Plan SEA process.
Conclusion		
Justification test failed.		
Recommendation		
These lands are currently developed for permitted public utility. As such, it is considered appropriate to retain the PU zoning objective. Applications for minor development (e.g. extensions) are unlikely to raise significant flooding issues. Should expansion of existing uses be proposed, flood mitigation measures are required (see Section Mitigation Objectives below).		

3.4 Mitigation Objectives

In order to properly manage flood risk, the following mitigation objectives are included in the County Development Plan 2016-2022; the Bray Municipal District LAP is a subsidiary plan to the County Development Plan, and these objectives will apply in the Bray MD area:

- FL1** To prepare new or update existing flood risk assessments and flood zone maps for all zoned lands within the County as part of the review process for Local Area Plans, zoning variations and Town Plans, where considered necessary.
- FL2** To implement the 'Guidelines on the Planning System and Flood Risk Management' (DoEHLG/OPW, 2009).
- FL3** The zoning of land that has been identified as being at a high or moderate flood risk (flood zone A or B) shall be in accordance with the requirements of the Flood Risk Guidelines and in particular the 'justification test for development plans' (as set out in Section 4.23 and Box 4.1 of the guidelines).
- FL4** Applications for new developments or significant alterations/extension to existing developments in a flood risk area shall comply with the following:
- Follow the 'sequential approach' as set out in the Flood Risk Guidelines.
 - Flood risk assessments will be required with all planning applications proposed in areas identified as having a flood risk, to ensure that the development itself is not at risk of flooding and the development does not increase the flood risk in the relevant catchment (both up and down stream of the application site).
 - Where a development is proposed in an area identified as being at low or no risk of flooding, where the planning authority is of the opinion that flood risk may arise or new information has come to light that may alter the flood designation of the land, an appropriate flood risk assessment may be required to be submitted by an applicant for planning permission.
 - Restrict the types of development permitted in Flood Zone A and Flood Zone B to that are 'appropriate' to each flood zone, as set out in Table 3.2 of the guidelines for Flood Risk Management (DEHLG/OPW, 2009).
 - Developments that are an 'inappropriate' use for a flood zone area, as set out in Table 3.2 of the guidelines, will not be permitted, except where a proposal complies with the 'Justification Test for Development Management', as set out in Box 5.1 of the Guidelines.
 - Flood Risk Assessments shall be in accordance with the requirements set out in the Guidelines.
 - Generally a Flood Impact Assessment will be required with all significant developments and a certificate (from a competent person stating that the development will not contribute to flooding within the relevant catchment) will be required with all small developments of areas of 1 hectare or less.
- FL5** To prohibit development in river flood plains or other areas known to provide natural attenuation for floodwaters except where the development can clearly be justified with the Flood Risk Guidelines 'Justification test'.
- FL6** To limit or break up large areas of hard surfacing in new developments and to require all surface car parks to integrate permeability measures such as permeable paving.
- FL7** Excessive hard surfacing shall not be permitted for new, or extensions to, residential or commercial developments and all applications will be required to show that sustainable drainage techniques have been employed in the design of the development.
- FL8** To require all new developments to include proposals to deal with rain and surface water collected on site and where deemed necessary, to integrate attenuation and SUDS measures.
- FL9** For developments adjacent to all watercourses of a significant conveyance capacity or where it is necessary to maintain the ecological or environmental quality of the watercourse, any structures (including hard landscaping) must be set back from the edge of the watercourse to allow access for channel clearing/maintenance / vegetation. A minimum setback of up to 10m (or other width, as determined by the Council) will be required either side depending on the width of the watercourse.

Bray Municipal District Strategic Flood Risk Assessment

Please read below the disclaimer and limitations associated with this assessment to avoid incorrect interpretation of the information and data provided.

Wicklow County Council makes no representations, warranties or undertakings about any of the information provided in this assessment and associated maps including, without limitations, on its accuracy, completeness, quality or fitness for any particular purpose. To the fullest extent permitted by applicable law Wicklow County Council nor any of its members, offices, associates, consultants, employees, affiliates, servants, agents or other representatives shall be liable for loss or damage arising out of, or in connection with, the use of, or the inability to use, the information provided in this assessment including but not limited to, indirect or consequential loss or damages, loss of data, income, profit, or opportunity, loss of, or damages to, property and claims of third parties, even if Wicklow County Council has been advised of the possibility of such loss or damages, or such loss or damages were reasonably foreseeable. Wicklow County Council reserves the right to change the content and / or presentation of any of the information provided in this report at their sole discretion, including these notes and disclaimer. This disclaimer, guidance notes and conditions of use shall be governed by, and construed in accordance with, the laws of the Republic Of Ireland. If any provision of this disclaimer, guidance notes and conditions of use shall be unlawful, void or for any reason unenforceable, that provision shall be deemed severable and shall not affect the validity and enforceability of the remaining provisions.

This SFRA is based on information from the sources outlined in Section 1.2 of this report. The following notes on Uncertainty and Best Available Information are attached to these studies,

UNCERTAINTY

Although great care and modern, widely-accepted methods have been used in the preparation of this assessment there is inevitably a range of inherent uncertainties and assumptions made during the estimation of design flows and the construction of flood models.

BEST AVAILABLE INFORMATION

There has been a wide range of datasets utilised in the production of this plan which are constantly changing and subsequently the analysis of these datasets is only correct at the time of assessment.

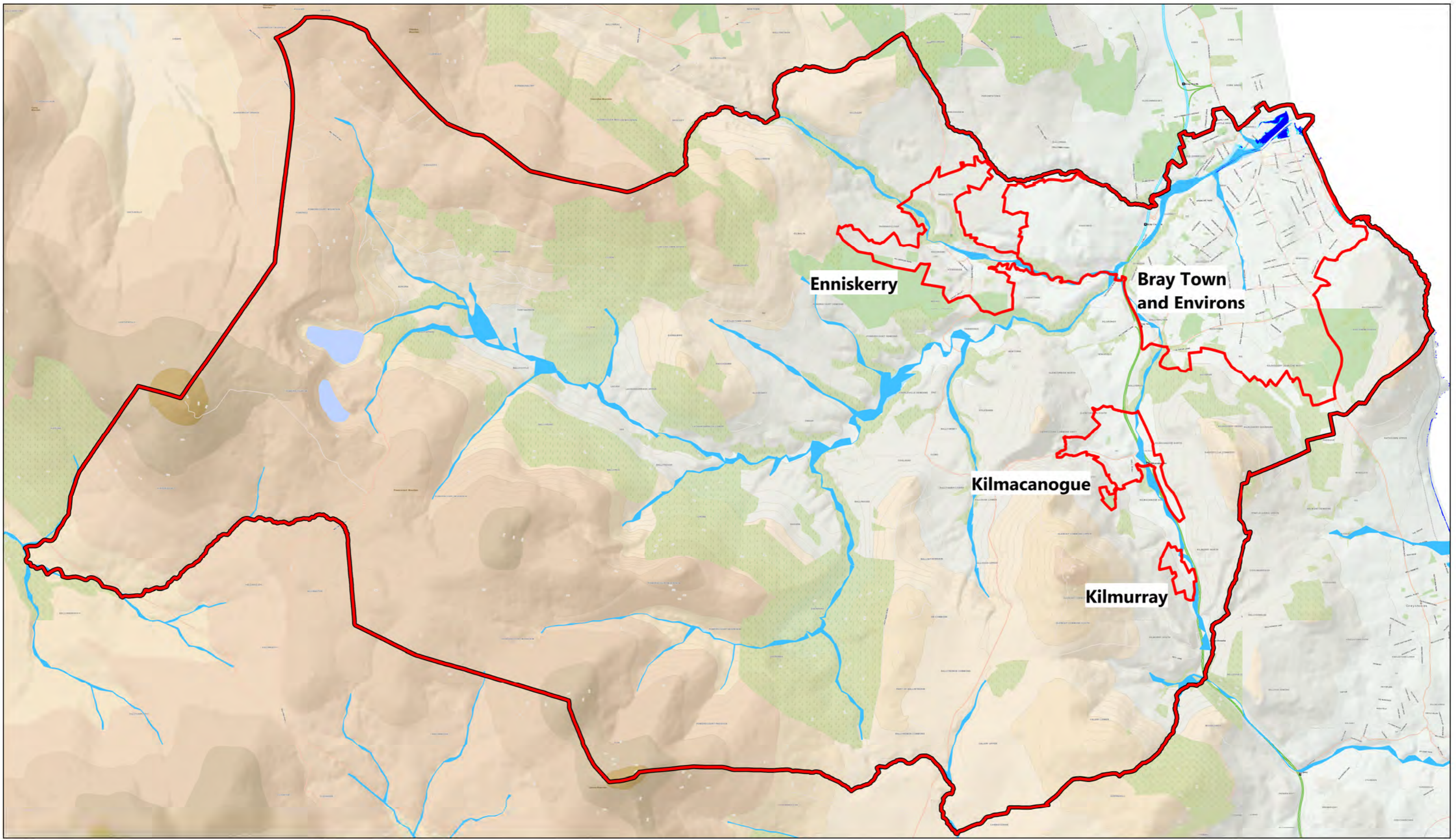
It is important to note that compliance with the requirements of 'The Planning System and Flood Risk Management-Guidelines for Planning Authorities' is a work in progress and is currently based on emerging and incomplete data as well as estimates of the locations and likelihood of flooding. As a result, this Strategic Flood Risk Assessment was based on available information at the time of assessment.

All information in relation to flood risk may be substantially altered in light of future data, new methodologies and/or analysis. As a result, all landowners and developers are advised that Wicklow County Council 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, including professional advice, to assess the vulnerability to flooding of lands in which they have an interest prior to making planning or development decisions.

5. BACKGROUND INFORMATION SOURCES

The following maps illustrate some of the background data sources.

Source	Flood Map No.
OPW Preliminary Flood Risk Assessment (PFRA)	C1
National Coastal Protection Strategy Study	C1
Contours	C2
Alluvial deposits	C2
Six Inch Mapping	C3
Flood extends in Bray (www.floodmaps.ie)	C4
Flood points (www.floodmaps.ie)	C5
River Dargle (Bray) Flood Defence Scheme 2007 Pre-scheme flood scenario	C6
River Dargle (Bray) Flood Defence Scheme 2007 Post-scheme flood scenario	C7
River Dargle (Bray) Flood Defence Scheme 2007 Post-scheme flood scenario – The Slang design Level	C8
CFRAM (July 2016)	C9



WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

BACKGROUND DATA SOURCES

Title: Flood Map
Map No. : C1

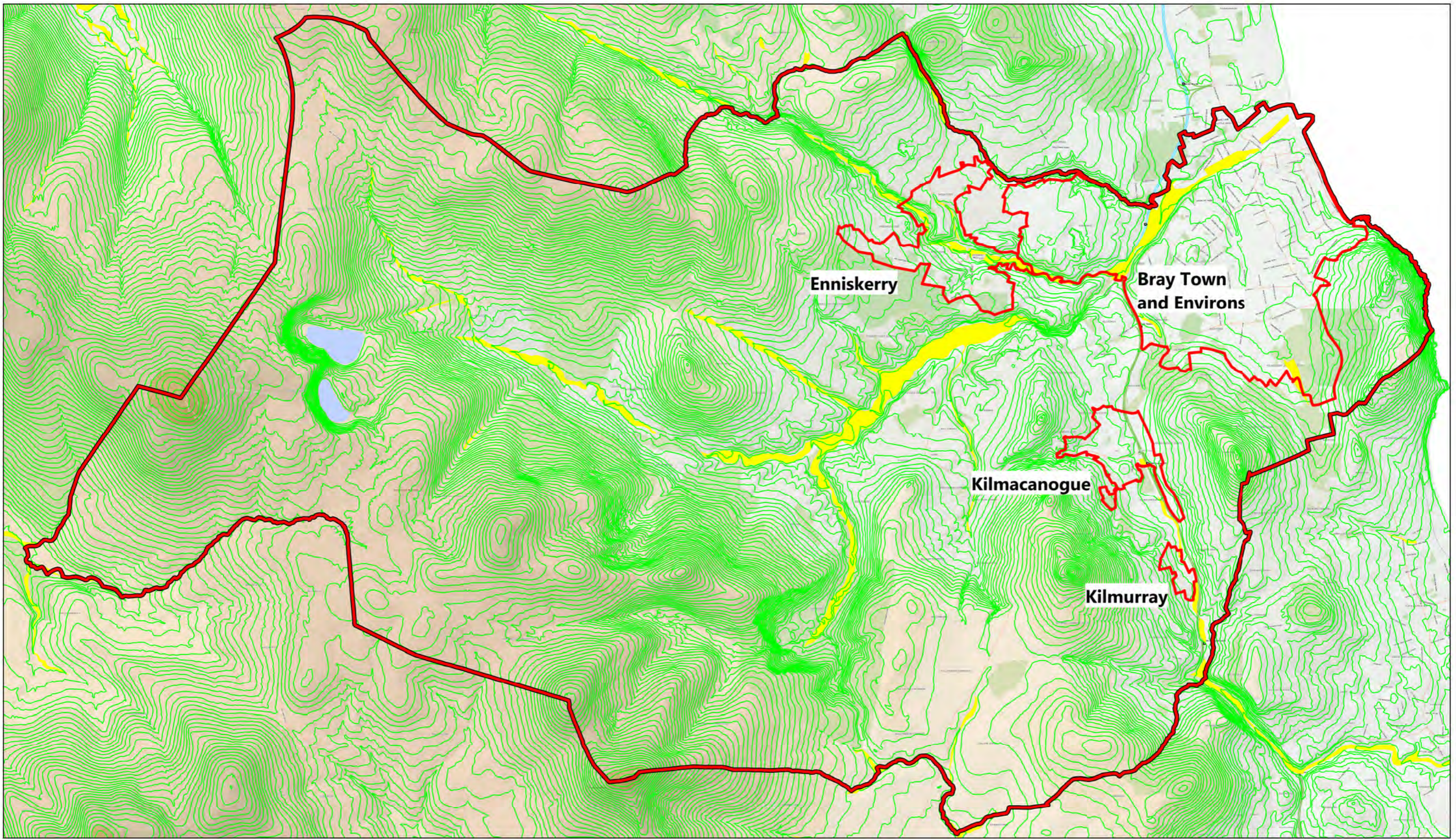
-  Municipal District Boundary
-  Settlement Boundary
-  PFRA Zone A
-  PFRA Zone B
-  Coastal Flooding Zone A
-  Coastal Flooding Zone A



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WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

BACKGROUND DATA SOURCES

Title: Flood Map
Map No. : C2

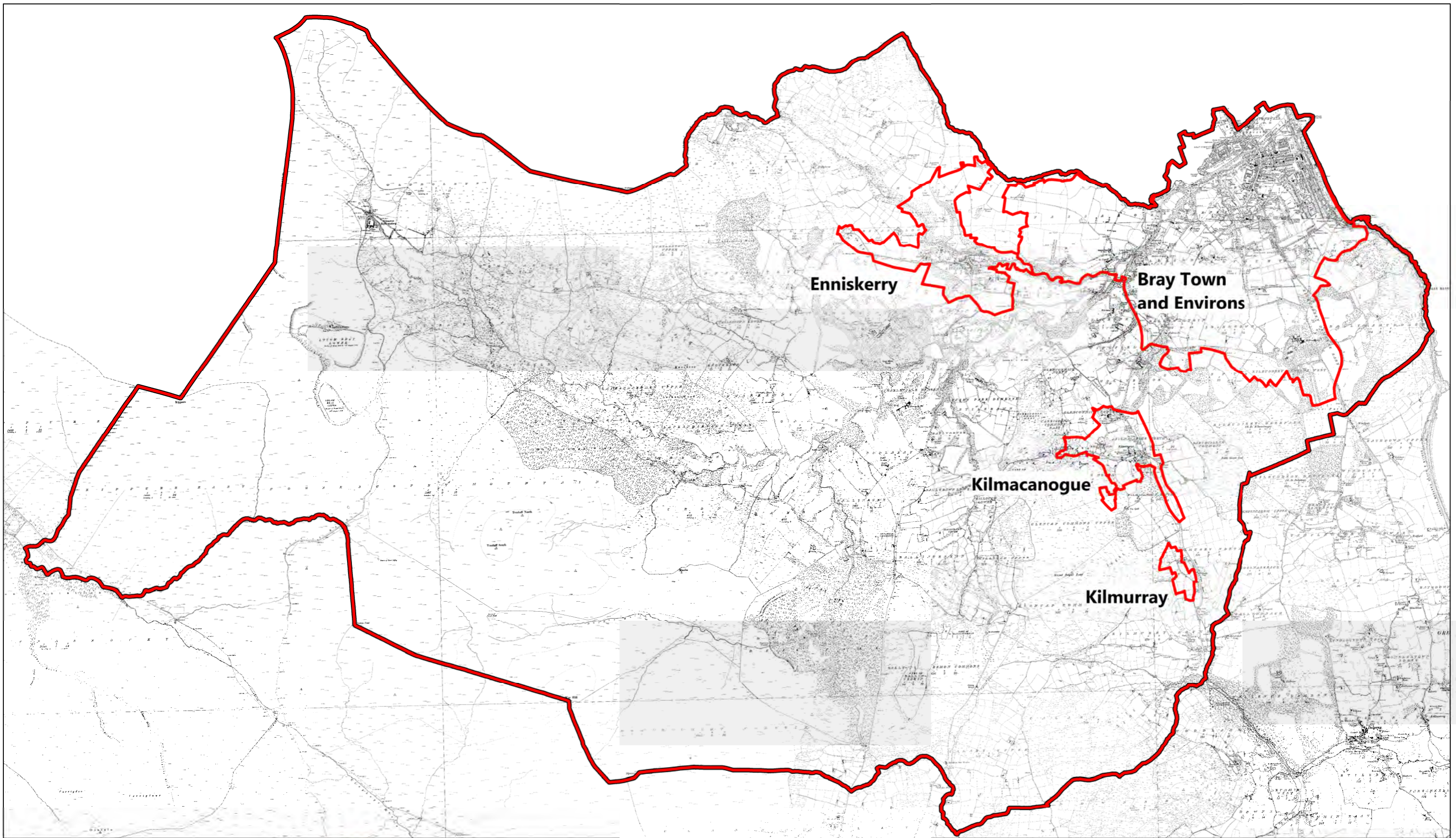
-  Municipal District Boundary
-  Settlement Boundary
-  Contours
-  Alluvial Soils



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WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

BACKGROUND DATA SOURCES

Title: Flood Map
Map No. : C3

-  Municipal District Boundary
-  Settlement Boundary

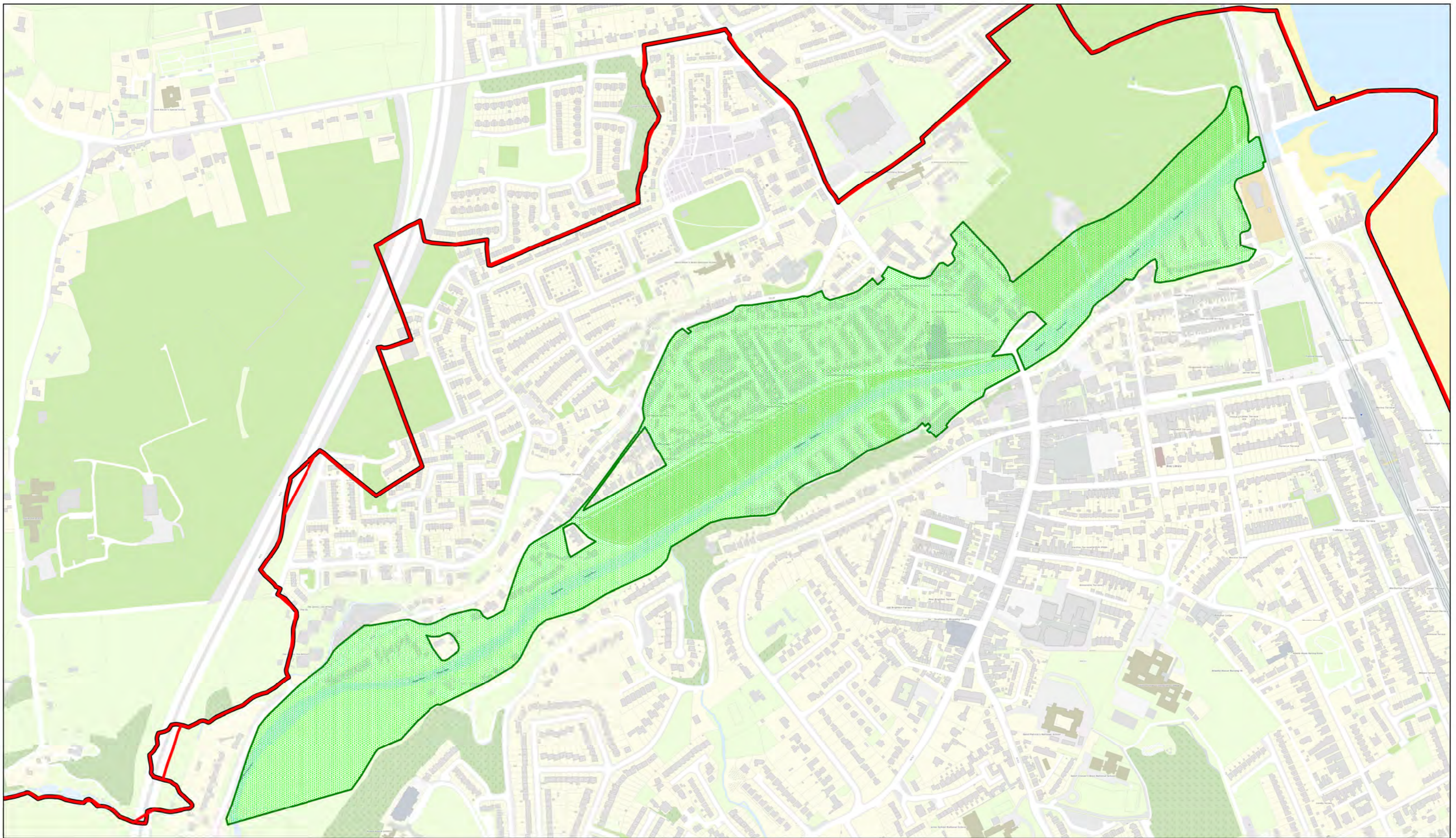
Six inch mapping



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




WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

BACKGROUND DATA SOURCES

Title: Flood Map
Map No. : C4

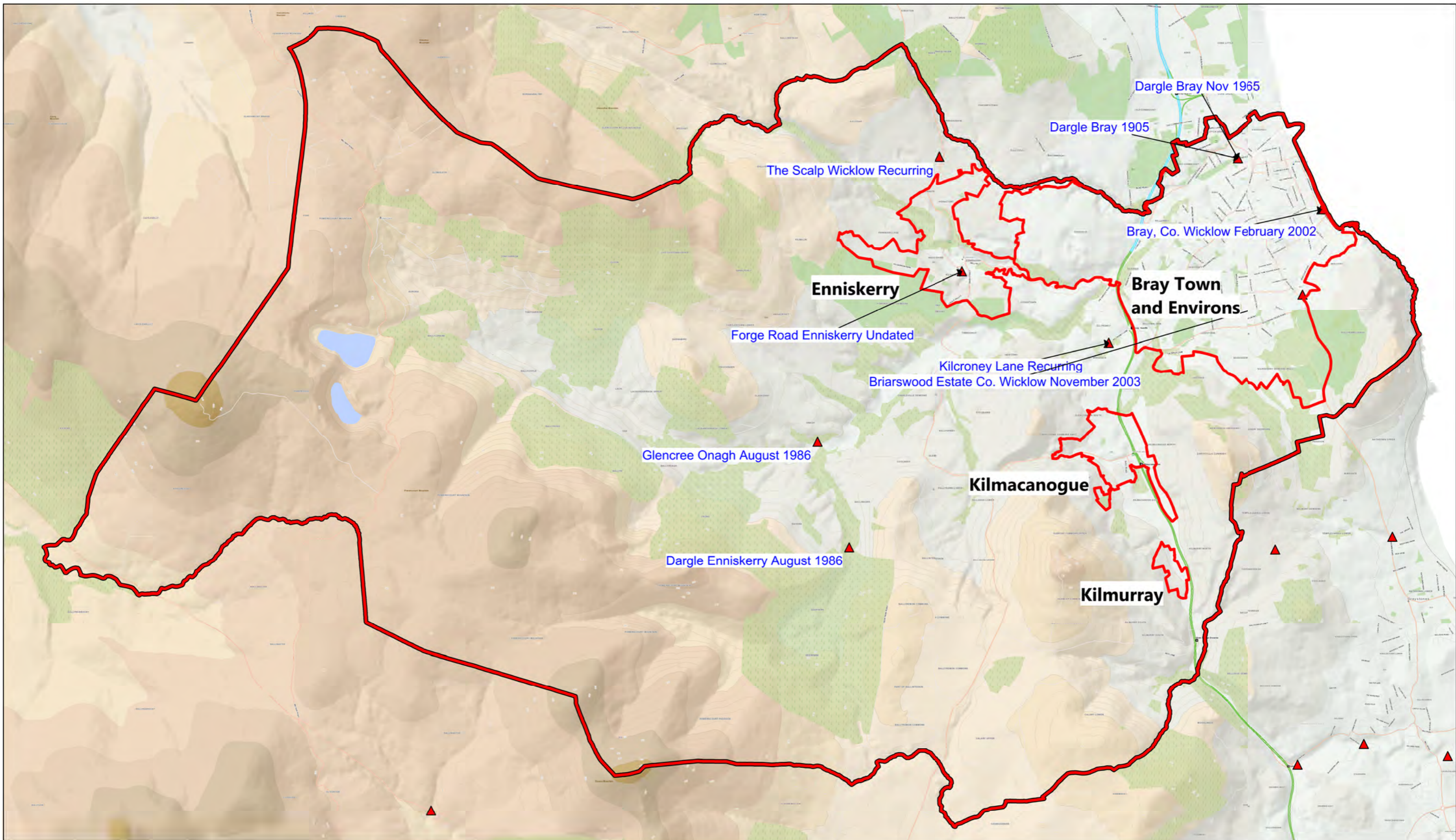
-  Municipal District Boundary
-  Settlement Boundary
-  Flood Events from www.floodmaps.ie
-  Flood extents



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





WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

BACKGROUND DATA SOURCES

Title: Flood Map
Map No. : C5

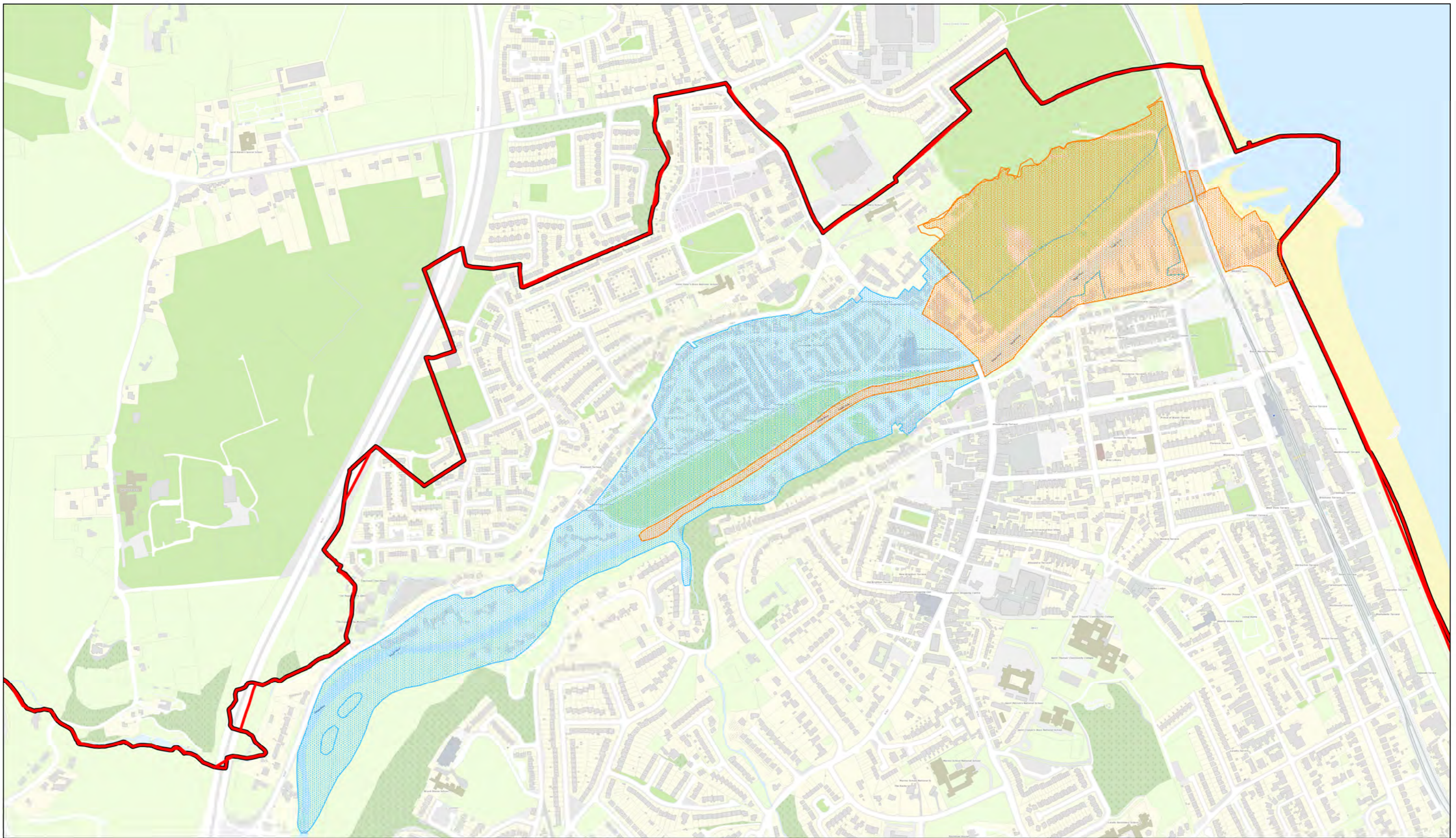
-  Municipal District Boundary
-  Settlement Boundary
-  Flood Events from www.floodmaps.ie
-  Flood points



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WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

BACKGROUND DATA SOURCES

**Title: Flood Map
Map No. : C6**

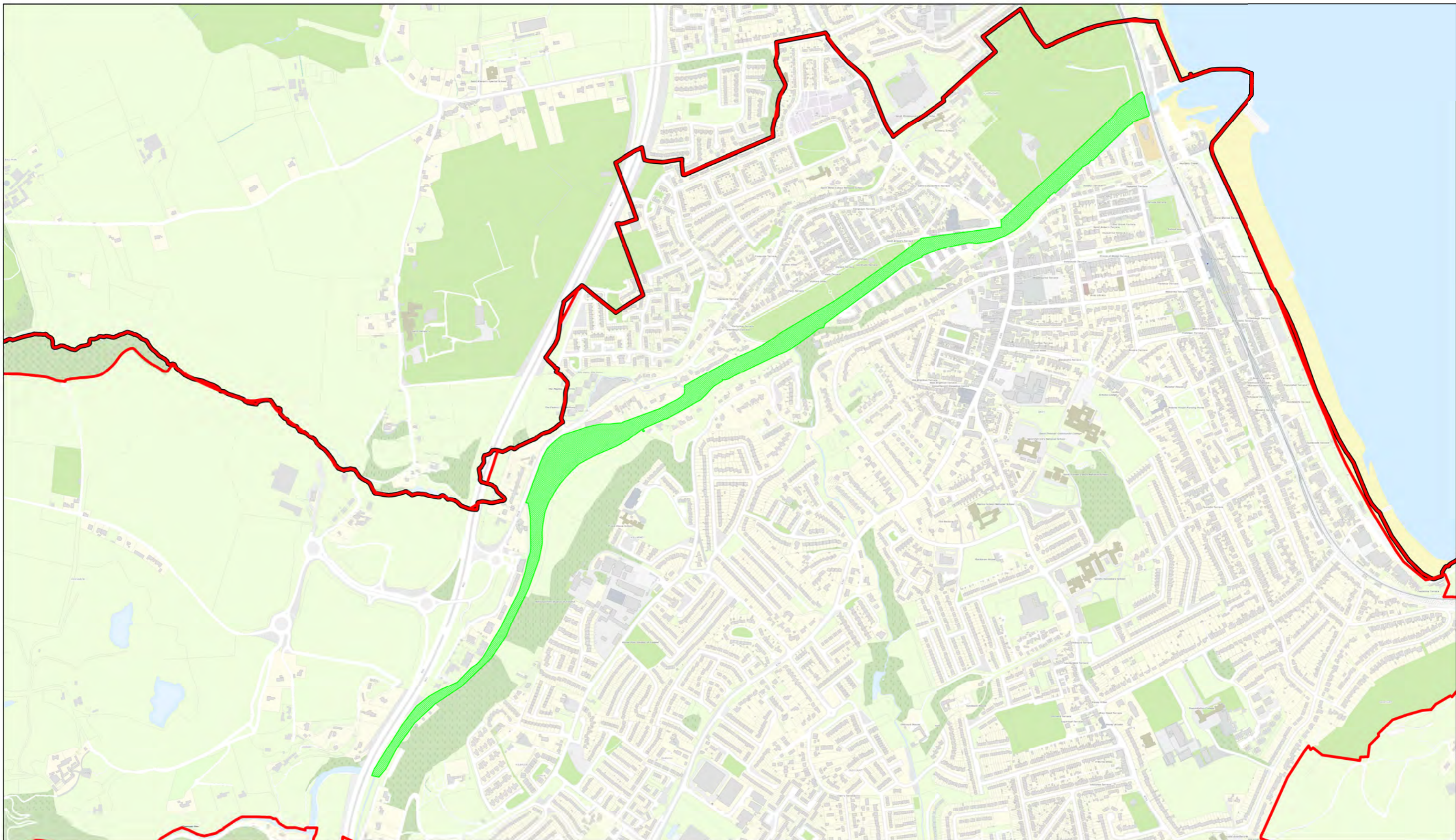
-  Municipal District Boundary
-  Settlement Boundary
-  River Dargle (Bray) Flood Defence Scheme, 2007
Pre-scheme flood scenario
-  Potential river flooding
-  Potential tidal flooding



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





WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

BACKGROUND DATA SOURCES

**Title: Flood Map
Map No. : C7**

-  Municipal District Boundary
-  Settlement Boundary
-  River Dargle (Bray) Flood Defence Scheme, 2007
-  Post-scheme flood scenario
-  Potential flooding



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





WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

BACKGROUND DATA SOURCES

Title: Flood Map
Map No. : C8

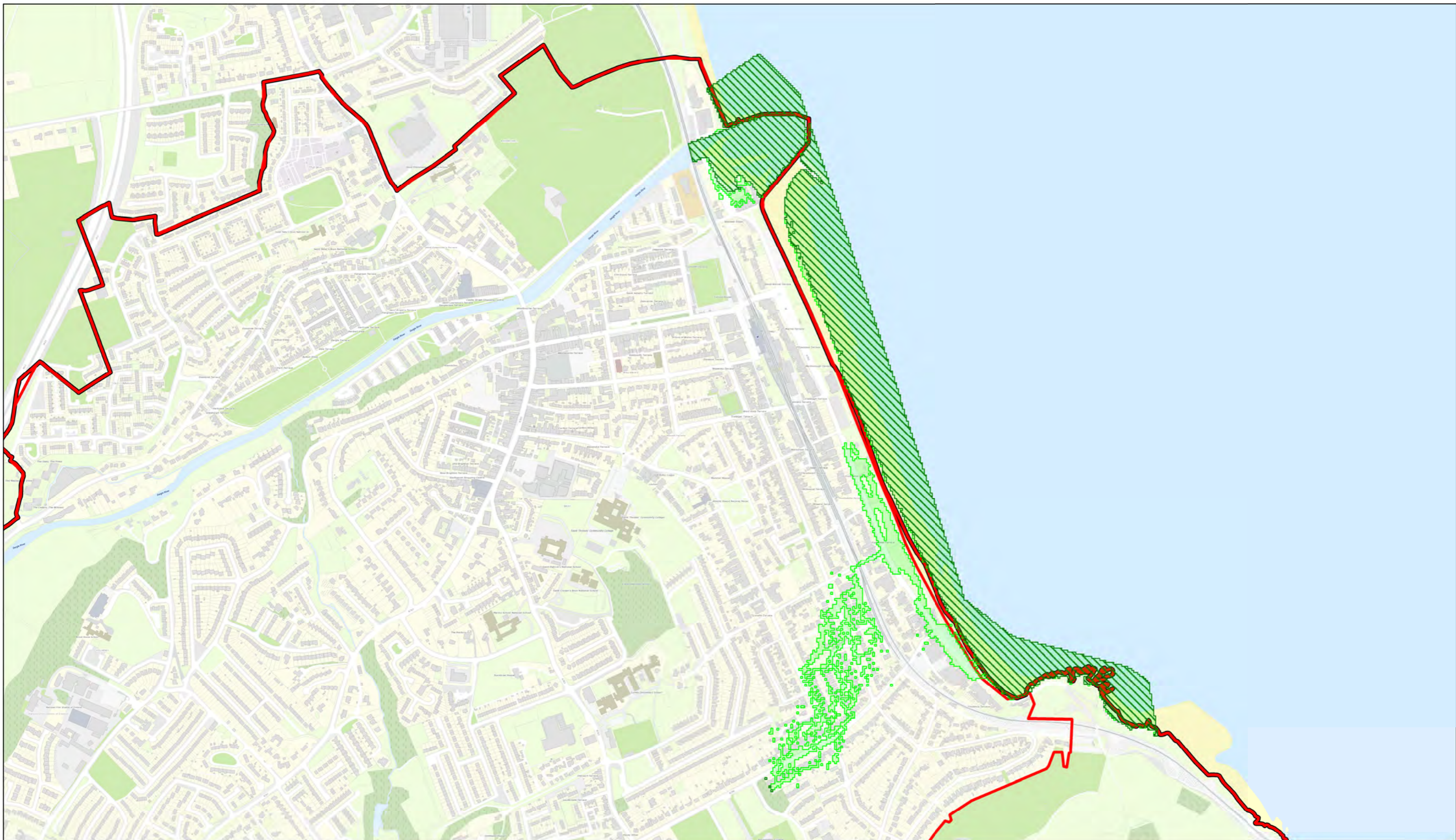
-  Municipal District Boundary
-  Settlement Boundary
-  River Dargle (Bray) Flood Defence Scheme
-  Post-scheme flood scenario – The Slang design level



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WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**


BACKGROUND DATA SOURCES


Title: Flood Map
Map No. : C9

 Municipal District Boundary

 Settlement Boundary

CFRAM mapping (July 2016)

 Flood Zone A

 Flood Zone B



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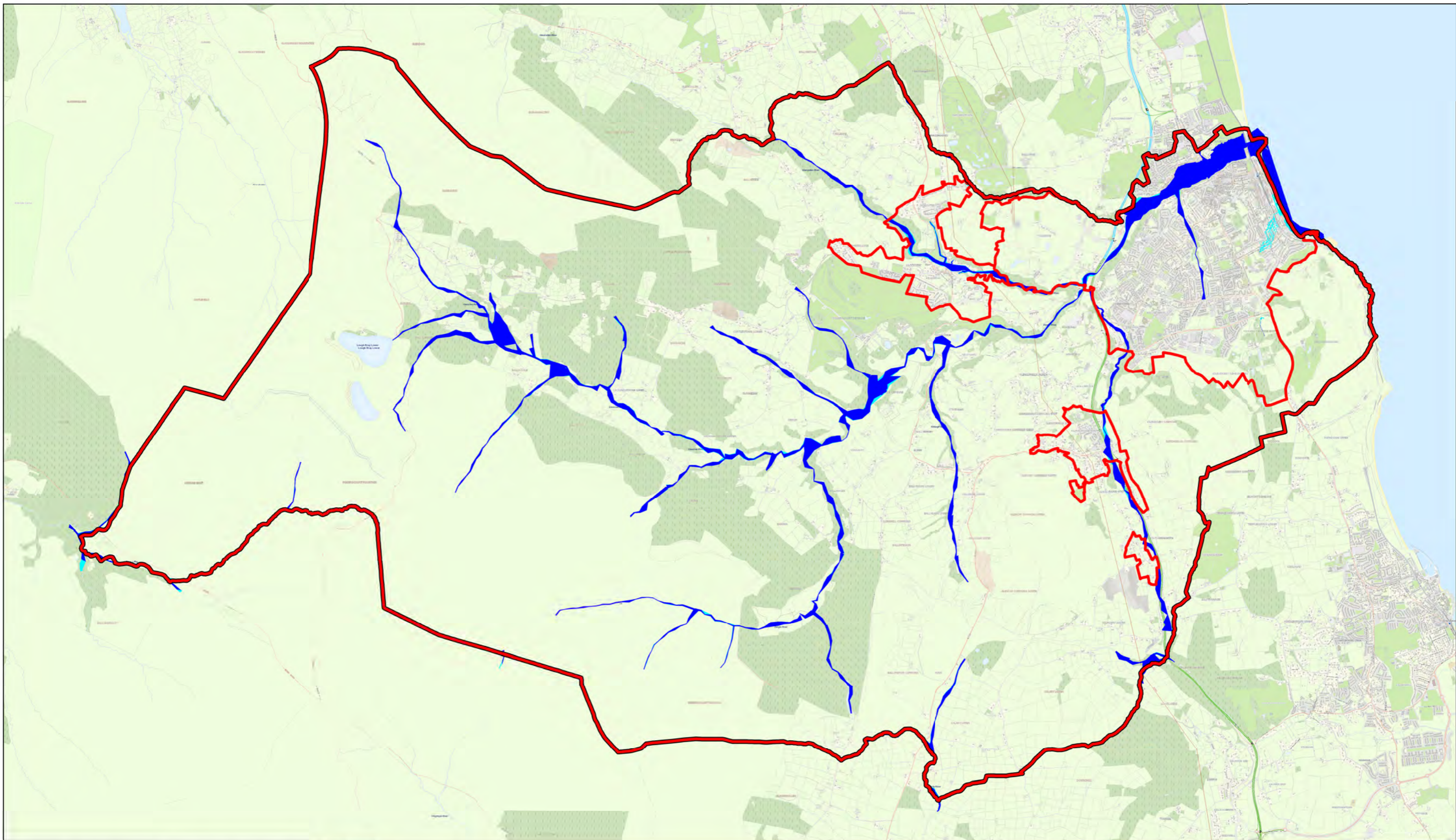
Maps are not to scale

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6. MAPPING

The following maps illustrate the Strategic Flood Risk Assessment for Bray Municipal District LAP 2017.

Flood Map No.	
SFRA 1	Indicative Flood Zones for Bray Municipal District
SFRA 2 (a)	Strategic Flood Risk Assessment - Site Assessment for Bray Town and Environs
SFRA 2 (b)	Strategic Flood Risk Assessment - Site Assessment for Enniskerry
SFRA 2 (c)	Strategic Flood Risk Assessment – Flood Zones for Kilmacanogue







WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

STRATEGIC FLOOD RISK ASSESSMENT

**Title: Indicative Flood Zones
Map No. : SFRA1**

-  Municipal District Boundary
-  Settlement Boundary
-  FLOOD ZONE A: High probability of flooding
-  FLOOD ZONE B: Moderate probability of flooding

DISCLAIMER

These Indicative Flood Zones were based on information available at the time of drafting and amending this plan. Any new data and analysis carried out after this date has not been integrated into this map but should be used in conjunction with this map for development proposals. All information may be substantially altered in light of future data and analysis.

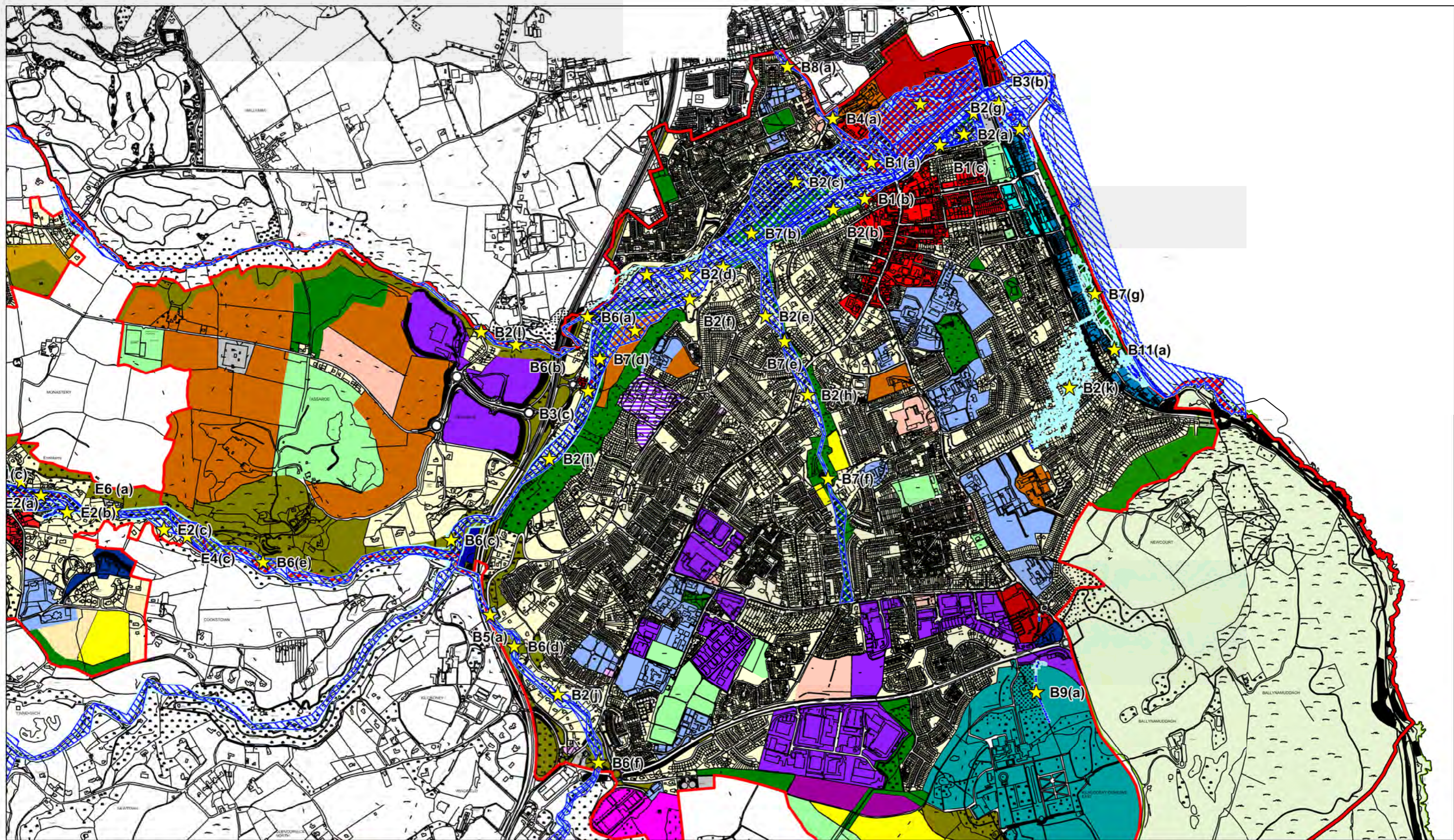
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WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

DRAFT

STRATEGIC FLOOD RISK ASSESSMENT SITES

Title: Bray Town and Environs
Map No. : SFRA2 (a)

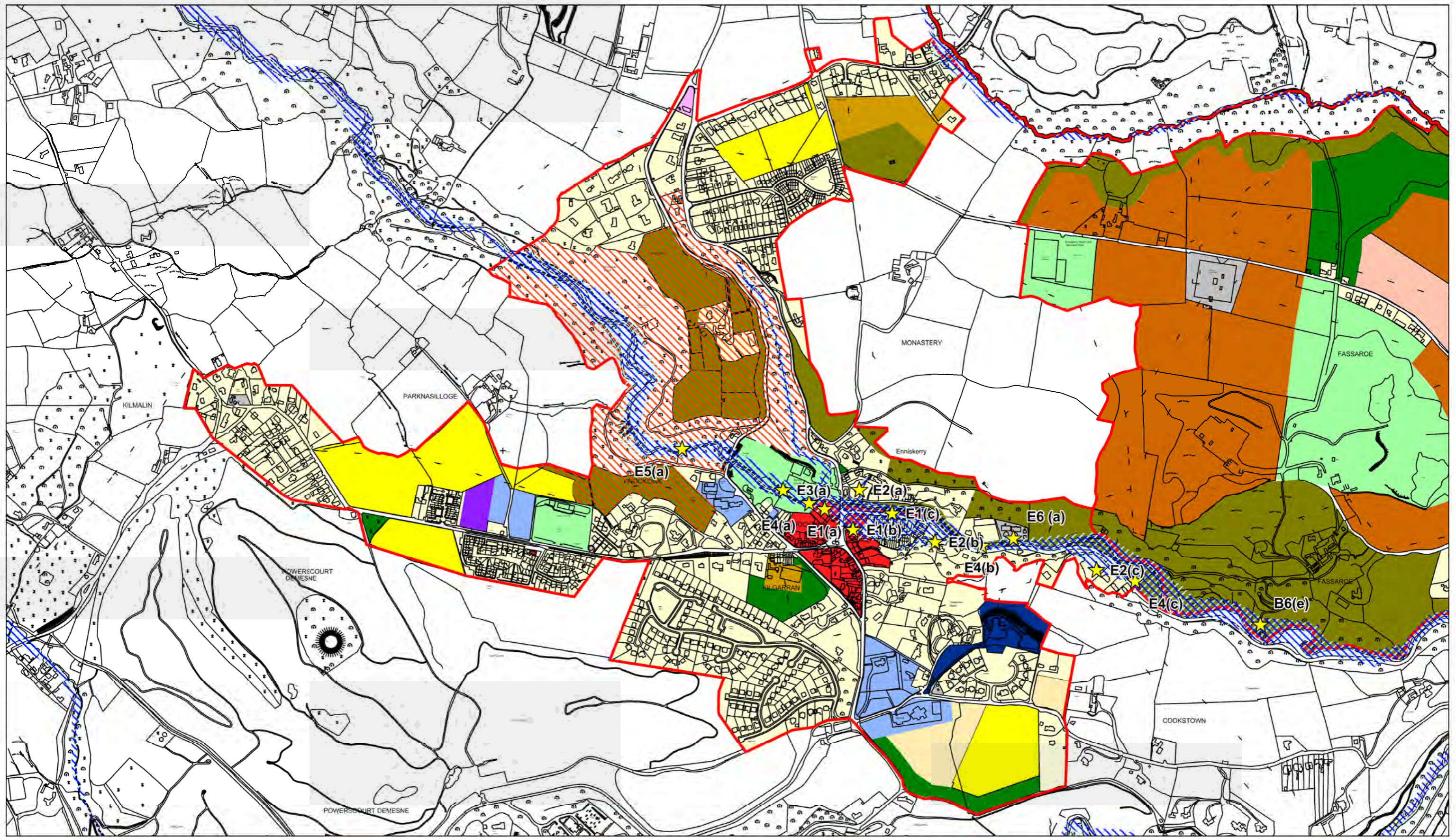
	Municipal District Boundary		TC Town Centre		AOS Active Open Space		FLOOD ZONE A
	Settlement Boundary		VC Village Centre		OS1 Open Space		FLOOD ZONE B
	RE Existing Residential		LSS Local Shops & Services		OS2 Open Space		SITES
	R-HD New Residential		E Employment		SF Bray Seafront		
	R20 New Residential		E Special Employment		GTH Bray Gateway & Transport Hub		
	R15 New Residential		FI Film Industry		KD Kilruddery Demesne Conservation & Tourism Zone		
	R10 New Residential		T Tourism		PU Public Utility		Conservation Area
	R Special New Residential		MU Mixed Use		CE Community & Education		Bray Head SAAO



Wicklow County Council
Planning Department

Maps are not to scale

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WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022

**Bray Municipal District
Local Area Plan
2017**

DRAFT

STRATEGIC FLOOD RISK ASSESSMENT SITES

**Title: Enniskerry
Map No. : SFRA2 (b)**

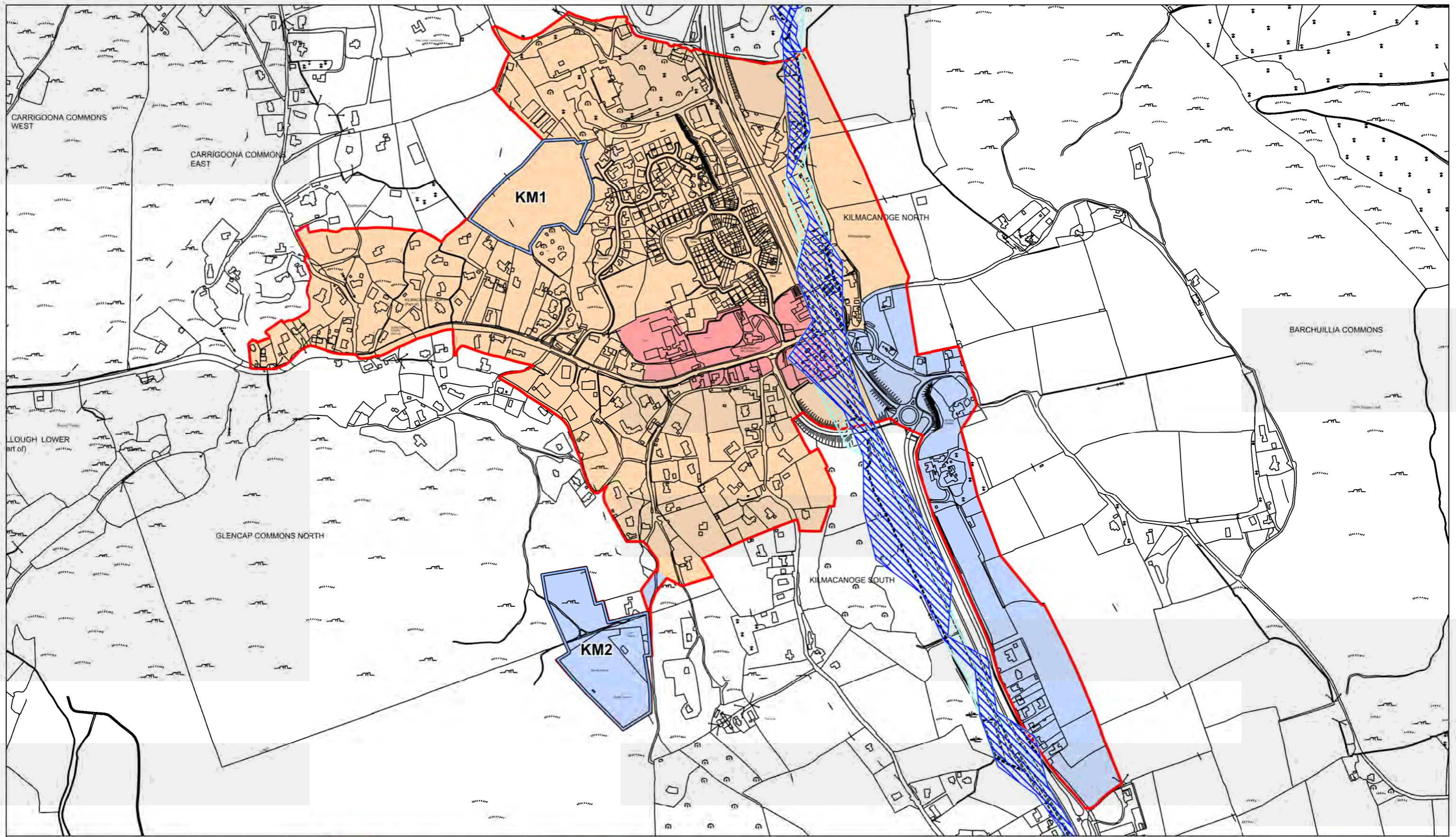
	Municipal District Boundary		TC Town Centre		AOS Active Open Space		FLOOD ZONE A
	Settlement Boundary		VC Village Centre		OS1 Open Space		FLOOD ZONE B
	RE Existing Residential		LSS Local Shops & Services		OS2 Open Space		SITES
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WICKLOW COUNTY DEVELOPMENT PLAN 2016-2022





**Bray Municipal District
Local Area Plan
2017**



DRAFT

STRATEGIC FLOOD RISK ASSESSMENT

Title: Kilmacanogue
Map No. : SFRA2 (c)

 Municipal District Boundary
 Settlement Boundary

 Primary Development Area
 Secondary Development Area
 Tertiary Development Area
 Plan Objectives Boundary

 FLOOD ZONE A
 FLOOD ZONE B



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