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Flood Risk Assessment

Large-scale Residential Development (LRD) Proposed amendments to a previously permitted Residential Development under Reg. Ref. 06/6101 (PL 27.227704) and subsequent amendment permissions.

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October 2023

Notice

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Revision	Purpose Description	Originated	Checked	Reviewed	Authorised	Date

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1.0 INTRODUCTION

A Flood Risk Assessment was undertaken for the proposed sites following the guidelines given in The Planning System and Flood Risk Management document published by the Office of Public Works (OPW) and the Department of the Environment Heritage and Local Government (DEHLG) in 2009. The following items detail the subject report structure, objectives, general qualifications, and conditions of use.

This Flood Risk Assessment is referred to site 4, site 6 and site 8. These sites are part of the Large Housing Development (LHD) at Newtownmountkennedy in Co. Wicklow, currently under construction. The residential development of 861 units was granted permission by Wicklow County Council and An Bord Pleanala (ABP) under Reference 06/6101 and 27.227704 respectively.

The proposed development comprises:

a) An increase of 6 no. residential units to the overall number of residential units permitted under (WCC Reg Ref. 06/6101 / ABP Reg. Ref. PL27.227704 extended by WCC Reg. Ref. 18/381 and further amendment application WCC Reg. Ref. 17/135, WCC Reg. Ref. 17/740 and WCC Reg Ref. 22/556) now providing a total of 751 no. residential units.

b) Amending Estate 4 from previously permitted 85 no. houses, and creche to provide 87 no. dwellings.

c) Amending Estate 6 from previously permitted 83 no. apartments, 5 commercial units and 3 community units to 48 no. dwellings.

d) Amending Estate 8 from previously permitted 36 no. houses to 75 no. dwellings.

e) Re-location of the childcare facility previously permitted in Estate 4 to the Community and Educational zoned lands, and the re-design of same from previously permitted c. 249.03sqm to c.655sqm

f) Re-location of 3 no. community rooms (totalling c. 400sqm) previously permitted in Estate 6 and the provision of 1 no. two storey community facility (c. 400sqm) on the Community and Educational zoned lands.

g) The total provision of 514 no. car parking spaces to include 24 no. EV spaces and 145 no. bicycle parking spaces.

h) Minor amendments to internal residential access roads and cyclist/pedestrian paths within the amended Estates 4, 6 and 8.

i) Minor amendments to the previously permitted open space to now provide c. 9,218 sqm Public Open Space & c. 1,226 sqm Communal Open Space

All associated site development works to include services provision, infrastructural and drainage works, provision of 3 no. substations, bin stores, bicycle stores, car parking, public lighting, landscaping, open space and boundary treatment works.

This planning application is accompanied by a Natura Impact Statement. The planning application is available for public viewing at the following website: www.MonalinLRD.ie

1.1 TERMS OF REFERENCE

POGA Consulting Engineers were engaged by BBA Architects to carry out Flood Risk Assessment (FRA) to the site 4, site 6 and site 8, located at Newtownmountkennedy, County Wicklow.

The surroundings of the subject lands were not identified as an area at risk of significant flooding by the OPW, which means it was not included in the Areas for Further Assessment (AFA) of the Catchment Flood Risk Assessment and Management (CFRAM) study. Therefore, the information available regarding the subject sites is from the Preliminary Flood Risk Assessment done in 2011 as part of the same study.

In 2022, Wicklow County Council prepared a Strategic Flood Risk Assessment (SFRA) as part of the County Development Plan for 2022 - 2028. The Newtownmountkennedy was referenced in the document (SFRA) in Sections Five and Appendices A; Addendum I section 3; Addendum II section 2 & section 4.

This document has been heavily referenced when producing this report. This report should be read in conjunction with POGA Consulting Engineers drawings and all other Consultants' reports and drawings. The engineering drainage design philosophy is outlined below, and detailed calculations are in the context of this report.

1.2 FLOOD RISK ASSESSMENT OBJECTIVES

A site-specific flood risk assessment was undertaken to assess all types of flood risk for a new development. This requires identification of the sources of flood risk, the effects of climate change on the flood risk, the impact of the proposed development, the effectiveness of flood mitigation and management measures, and the residual risks that remain.

This assessment endeavours to identify the potential risks from sources including coastal, fluvial, pluvial flooding from public sewers and groundwater. It also quantifies the risks to the subject site from these sources into the following categories; very low, low, medium, high, and very high.

As previously stated, this flood risk assessment has been conducted in accordance with the criteria set out by the Planning System and Flood Risk Management Guidelines for Planning Authorities. Furthermore, the proposed site will be assessed under the Strategic Flood Risk Assessment (SFRA) completed by Wicklow County Council.

1.3 GENERAL QUALIFICATIONS AND CONDITIONS OF USE

The subject report is intended to be an accurate and unbiased account of the site flooding risks. It has been compiled based on information received from the following sources:

- Available drainage record drawings.
- Strategic Flood Risk Assessment (SFRA) by JBA Consulting as part of the Wicklow County Development Plan 2022-2028
- OPW Preliminary Flood Risk Assessment indicative flood maps.
- 'Floodmaps.ie' – The national flood hazard mapping website operated by the Office of Public Works (OPW), where information about past flood events is recorded and made.
- 'Floodinfo.ie'– The interactive website operated by the Office of Public Works (OPW), where printable maps of the communities included in the "Areas for Further Assessment" are made available.
- 'Gis.epa.ie' – Environment & wellbeing mapping website operated by Environmental Protection Agency (EPA).
- 'Gsi.ie' – Geological Survey Ireland is the national earth science knowledge centre operated by the Department of Communications, Climate Action and Environment.
- Internet based search into local flooding.

This report is based on the above information and prepared for the purpose of satisfying a condition of compliance to the local authority on these particular sites only. The risk categorised above are based on the judgement and experience for the Engineer carrying out the assessment and may be based on information or documentation supplied by others.

Moreover, the report is intended for the sole use of DRES Properties/Gilkerry Ventures Ltd, and their elected agents and advisors and, further, solely for the purpose for which it was originally commissioned. It may not be assigned or copied to third parties or relied upon by third parties.

2.0 SITE BACKGROUND

A description of the subject sites topography, location and geology is provided in this section, as well as information about existing drainage networks and watercourses that occur in the surrounding areas.

2.1 SITE DESCRIPTION

The overall site is approximately 7.7 Hectares in size, and it is located to the west of Newtownmountkennedy, County Wicklow. Predominantly agricultural lands bound the sites to the West, and part of the new developments to the east and south. The site is bounded to the north by R772 road, to the east by the town of Newtownmountkennedy and to the south by the R765 Roundwood Road.

There is a stream, part of the Newtownmountkennedy River, running in the lowest point of the valley, in the south of estate 4 and north of the estate 6 and 8.

Regarding topographic information, the sites generally slopes in two directions: from the east to the west with levels of approximately 100m AOD to the east and 126 AOD to the west; and also slopes gently from South and North towards the central valley. In relation to the site geology, records in the Geological Survey of Ireland (SGI) website indicates that the subsoil within the site and surround area consists of Greywacke & quartzite. The underlying bedrock is classified as the Bray Head Formation and the associated groundwater vulnerability classification varies as “moderate”, “high” and “extreme” as shown on Figure 2.1 below. This would indicate an overburden depth of 5-10m at the site according to the table presented in Figure 2.2.

- Estate 4 – Vulnerability category is moderate with subsoil permeability classified as low.
- Estate 6- Vulnerability category varies. On the west of the site classified as H “High” and E“extreme” on the east side.
- Estate 8 – Vulnerability category is moderate with subsoil permeability classified as low.

In addition, the Geological Survey of Ireland (GSI) was consulted in relation to the presence and classification of aquifers in the area. In the vicinity sites, the GSI classifies the aquifer as a Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones. However, it worth to mention that the site is approximately 400m distance to the west from an aquifer classified as Locally important gravel aquifer by GSI.

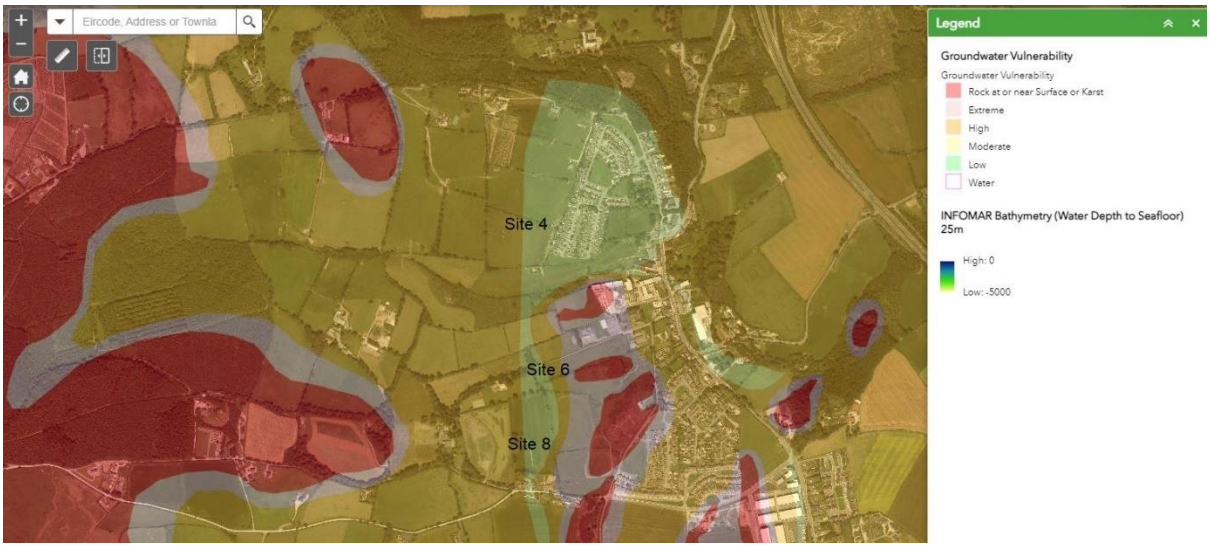


Figure 2.1 - Groundwater Vulnerability (Extract from www.gsi.ie)

Depth to rock	Hydrogeological Requirements for Vulnerability Categories Diffuse recharge			Point Recharge	Unsaturated Zone
	high permeability (sand/gravel)	Moderate permeability (sandy subsoil)	low permeability (clayey subsoil, clay, peat)	(swallow holes, losing streams)	(sand & gravel aquifers only)
0–3 m	Extreme	Extreme	Extreme	Extreme (30 m radius)	Extreme
3–5 m	High	High	High	N/A	High
5–10 m	High	High	Moderate	N/A	High
>10 m	High	Moderate	Low	N/A	High

i N/A = not applicable.
ii Release point of contaminants is assumed to be 1–2 m below ground surface.
iii Permeability classifications relate to the engineering behaviour as described by BS 5930.
iv Outcrop and shallow subsoil (i.e. generally <1.0 m) areas are shown as a sub-category of extreme vulnerability.

(amended from Deakin and Daly (1999) and DELG/EPA/GSI (1999))

Figure 2.2 - Depth to rock versus Vulnerability Categories (Extract from www.gsi.ie)

2.2 SITE DRAINAGE

This section outlines the existing drainage networks and proposal in the vicinity of the subject estates 4, 6 and 8.

2.2.1 Surface Water

The existing surface water network of the sites are part of the Large Housing Development (LHD) scheme in Newtownmountkennedy. It is proposed to intercept, treat, and attenuate the surface water runoff of the subject estates 4, 6 and 8 using SuDS techniques such as,permeable paving, green roofs, swales and then attenuation the remaining runoff using pond& attenuation tanks.

Estate 4 surface runoff will connect into the existing ø675mm surface water network constructed as part of the estates 3 and 5, and outfalls to the under-construction attenuation pond on South-West of the site, as granted under parent permission.

Estate 8 is proposed to connect the surface runoff into the existing ø300mm pipe constructed as part of the estate 5. This site outfalls to the under-construction attenuation pond, on the North-West of the site.

Estate 6 surface runoff is proposed to be intercepted into a new proposal attenuation tank within the site, and then outfalls into the existing ø300mm surface water pipe constructed as earlier stages of the development.

The attenuation pond mentioned above is part of the LHD and is currently under construction. The pond is designed to store the 1:100 year storm event plus 20% for climate change, and it is designed to meet the demands of earlier phases and estates 4 & 8. Refer to Fig. 2.2.1 below.

Figure 2.2.1 - Attenuation Pond (under construction)

All surface systems are designed to conform to Sustainable Urban Drainage Systems (SUDS) in accordance with the Greater Dublin Strategic Drainage Study. Refer to POGA Drainage drawings reference 22008-332, 22008-334, 22008-531, 22008-631.

2.2.2 Wastewater

The wastewater from estate 4 is proposed to be discharged, into the existing ø300mm wastewater network constructed as part of the estate 5 within the development. This outfall to existing network at Fishers Junction.

The wastewater from estate 8 is proposed to discharges into an existing ø375mm sewer,constructed as part of the estate 2 & 5. This also outfall to existing network at Fishers Junction.

The wastewater from estate 6 is proposed to be connected into an existing ø225mm and to a ø375mm that runs under an existing road in the development and in turn outfalls to the existing network on the Roundwood Road.

The wastewater effluent generated by the development will drain by gravity system before discharging into Irish Water gravity sewer system located in on the main street of the town which in turn discharges into a pumping station located at the old treatment works in the town. The pumping station will discharge the foul effluent via a rising main to a wastewater treatment plant located in Greystones, Co. Wicklow. There is a wastewater treatment plant proposed at Leabeg, Newcastle, Co. Wicklow and when this becomes operational foul effluent will be directed to this plant for treatment.

The proposed wastewater layout is as per POGA Consulting Engineers drawing reference 22008-332, 22008-334, 22008-531, 22008-631.

2.3 EXISTING WATERCOURSES

The site is located within the Ovoca-Vartry Water Framework Directive (WFD) Catchment and Hydrometric Area 10, within the Sub catchment Newcastle [Wicklow]_Sc_010, Sub Catchment ID 10_1 (www.gis.epa.ie).

There are 2 No. waterbodies surrounding the subject sites running from the West to the East. The closest stream to estate 4 which is running between the estates 4 and 6 & 8, and it is the lowest point of the valley, is Glendarragh. Please see fig. 2.3 below for reference.

The second steam is the Altidore Stream, located approx. 525m to the North and approx. 535m to North-East of estate 4, and runs from North-West to South-East. Glendarragh stream and Altidore meet at approx. 523m to the west of the sites.

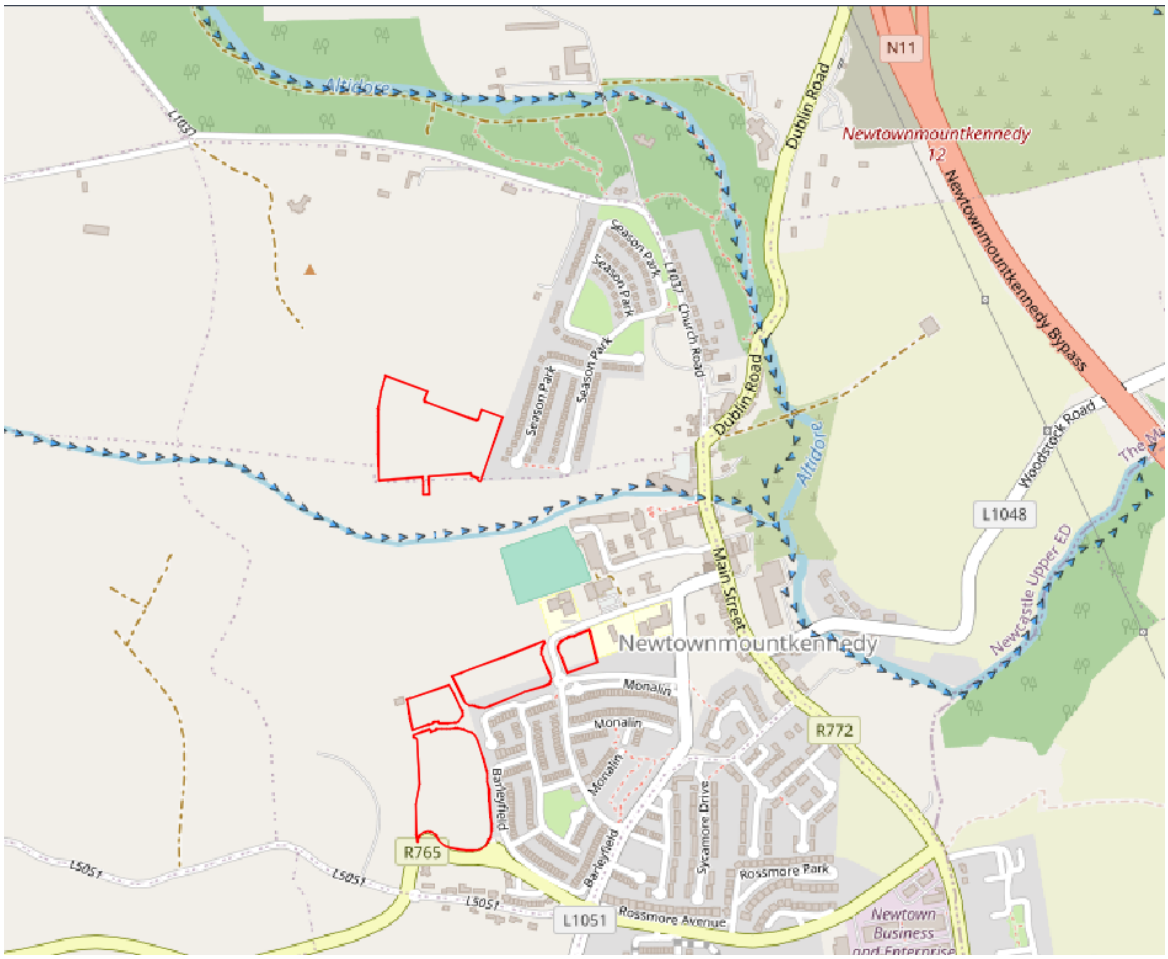


Figure 2.3 - Existing Waterbodies (Extract from www.gis.epa.ie)

3.0 FLOOD RISK ASSESMENT

Any developer is obliged to carry out the sequential approach of the Flood Risk Guidelines for a proposed development, as per shown in Figure 3.1. If the proposed development is located in a Flood Zone C, the justification test is not required. However, it is still required that flood risks are assessed, and a surface water management strategy is provided.

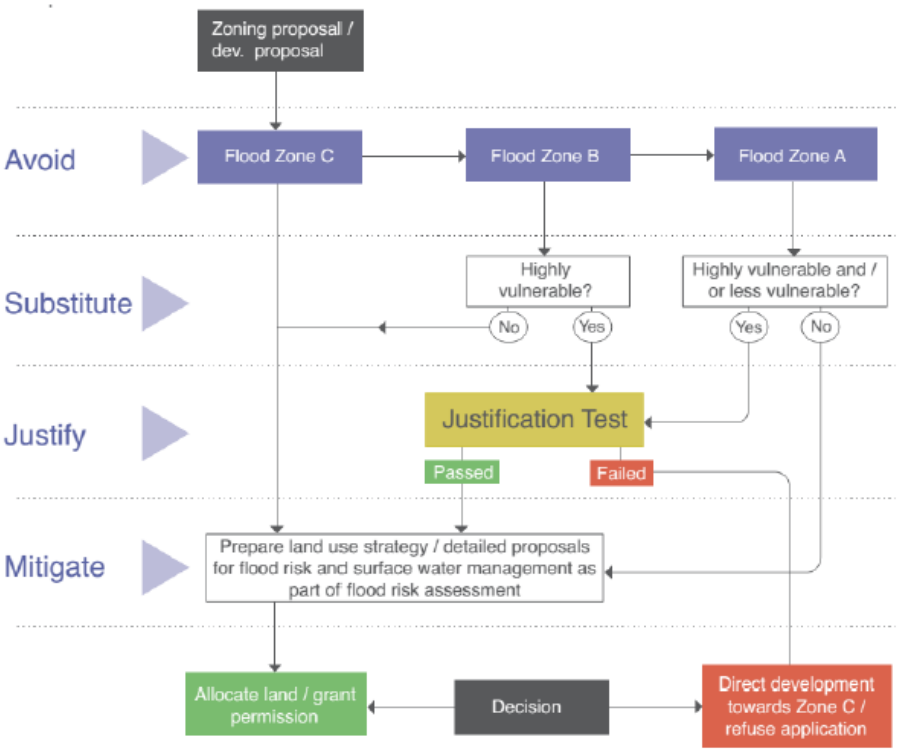


Figure 3.1 – Sequential Approach from Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009

This section identifies the vulnerability class of the developments in regard to its use and geographical location. It reviews historic and predictive flood information in order to assess the potential flood risks to the subject site and the necessary mitigation measures.

3.1 VULNERABITILY REGARDING USE OF LAND

Table 3.1 of the OPW Guidelines on the Planning System and Flood Risk Management 2009 categorises buildings, irrespective of location, based on end use. Note, this is independent of particular risk factors associated with the sites. Highly vulnerable developments include dwellings, so it is clear that this development lies within this category.

3.2 VULNERABILITY REGARDING GEOGRAPHICAL LOCATION

The geographical location of a site affects its vulnerability to flood sources. These sources are wide-ranging as shown in Figure 3.2.

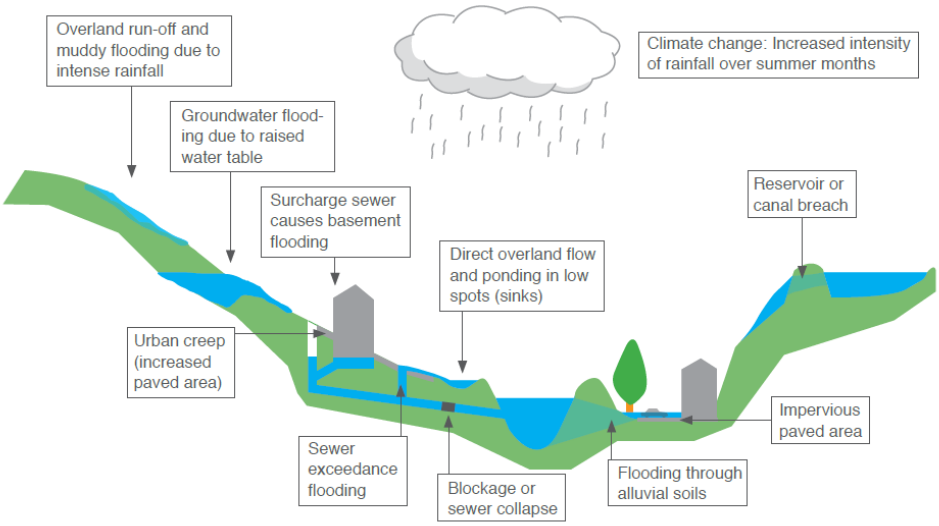


Figure 3.2 - Potential Sources of flooding

The OPW document sets out geographical areas within which the likelihood of flooding is within a particular range, and this may be used as a key tool in flood risk appraisal for river and coastal flooding:

Flood Zone A includes lands where the probability of flooding from coastal or river flooding is highest i.e., greater than 1% or 1 in 100 for stream/river flooding and greater than greater than 0.5% or 1 in 200 for coastal flooding.

Flood Zone B includes lands where the probability of flooding from coastal or river flooding is moderate i.e., between 0.1% or 1 in 1000 and 0.5% or 1 in 200 for coastal and between 0.1% or 1 in 1000 and 1% a 1 in 100 for stream/river 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 or B.

It is necessary to consider that the flood zones are indicative of coastal and river flooding only. They should not, on their own, 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 pluvial and groundwater flooding. However, they can be used to gain an appreciation into whether the site is at particular risk of a serious flood event and whether the site is suitable for vulnerable housing development. Please refer to Appendix A for Indicative Flood Zones.

Wicklow County Council and JBA Consulting Engineers has completed a Strategic Flood Risk Assessment (SFRA) as part of the Development Plan 2022-2028, dated 12th September 2022. The Strategic Flood Risk Assessment (SFRA) has classified the Newtownmountkennedy as Level 4 “Self-Sustaining Towns” in accordance with the settlement typology set out in the

Regional Spatial and Economic Strategy (RSES) and Highly Vulnerable, as it is a residential development. Under part 2, Section 5 of the SFRA, it states the areas falling with Flood Zone A and B are largely designated for water compatible forestry (1) and open space (2) in middle of Newtownmountkennedy along the main river and its tributary. The extents of Flood Zone A and B cover a small part of the town centre, and a very small area of existing residential development (colored in red). Refer to Figure 3.3.

Therefore, it is clear the other areas are outside these flood zones, deemed to be in Flood Zone C. No fluvial or tidal flood risk was identified. Under SFRA Part 3, section 3 – Level 4 Settlements, states the subject estate 8 is also under zone C. Refer to Figure 3.4.

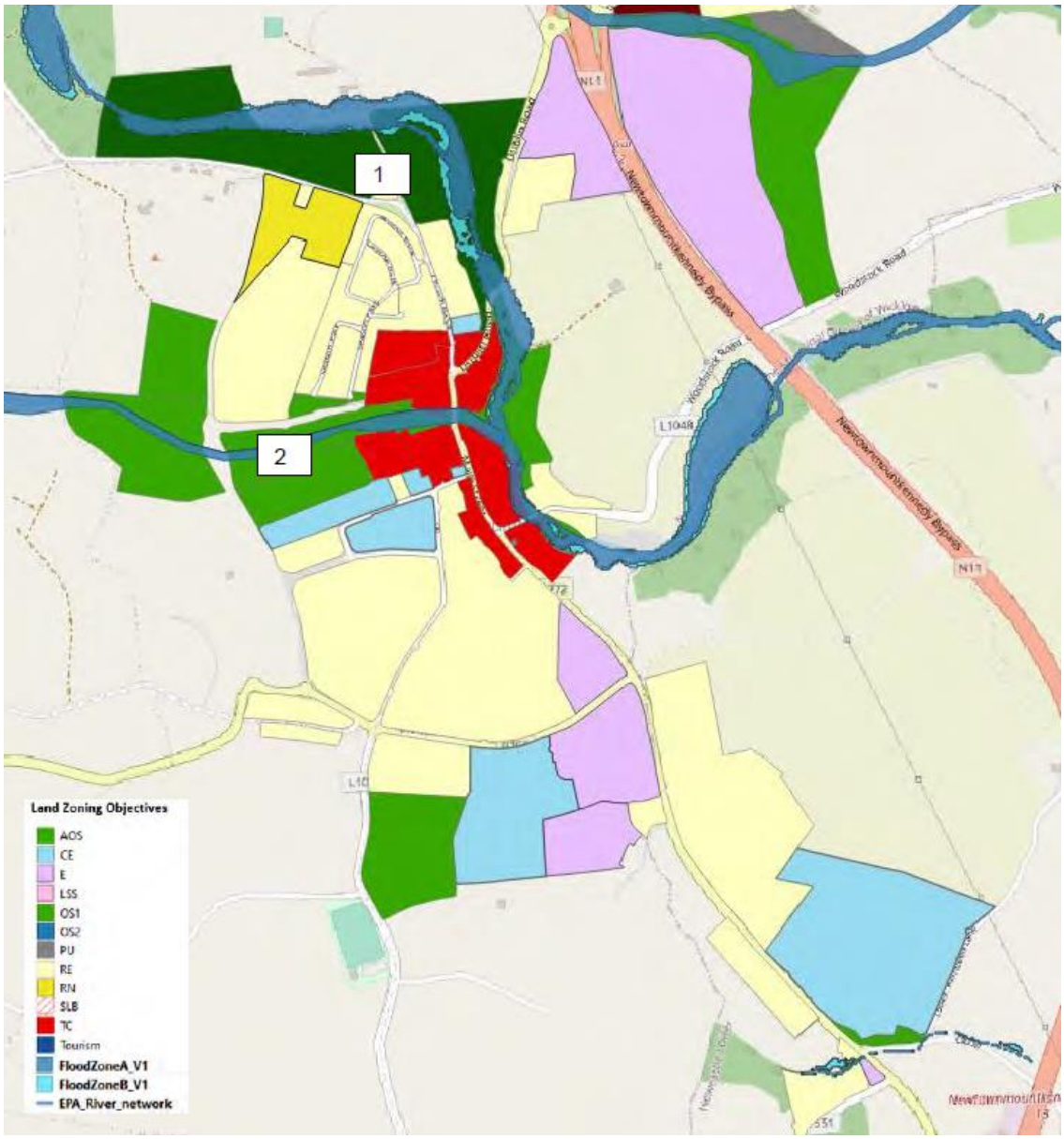


Figure 3.3 – Land Use Zoning Maps Overlaid with Flood Zones. Wicklow County Council Strategic Flood Risk Assessment.

Newtownmountkennedy

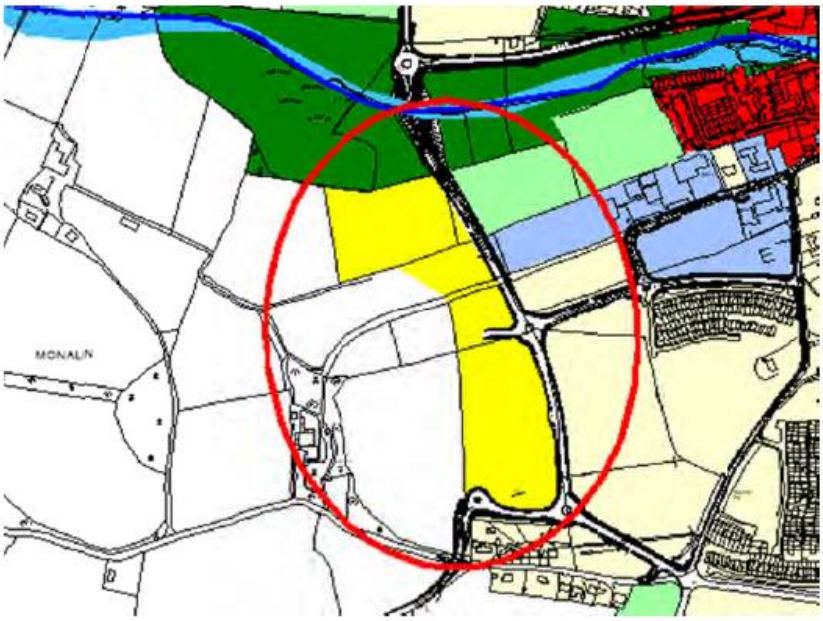
Area 1

Flood Zone A

Flood Zone B

EPA River Network

Area under assessment



Land zoning	R-N (New Residential)
Flood Zone	C
Development Type	Highly vulnerable
Requirement for Justification Test	No

Figure 3.4 – Level 4 Settlements. Wicklow County Council Strategic Flood Risk Assessment.

Since the subject sites are identified as “Highly Vulnerable” and “Appropriate” in Flood Zone C, a justification test for this project is not required as per Sequential Approach shown in Figure 3.4 previously.

3.2.1 Fluvial

River flooding occurs when the capacity of a watercourse is exceeded or the channel is blocked or restricted, and excess water spills out from the channel onto adjacent low-lying area.

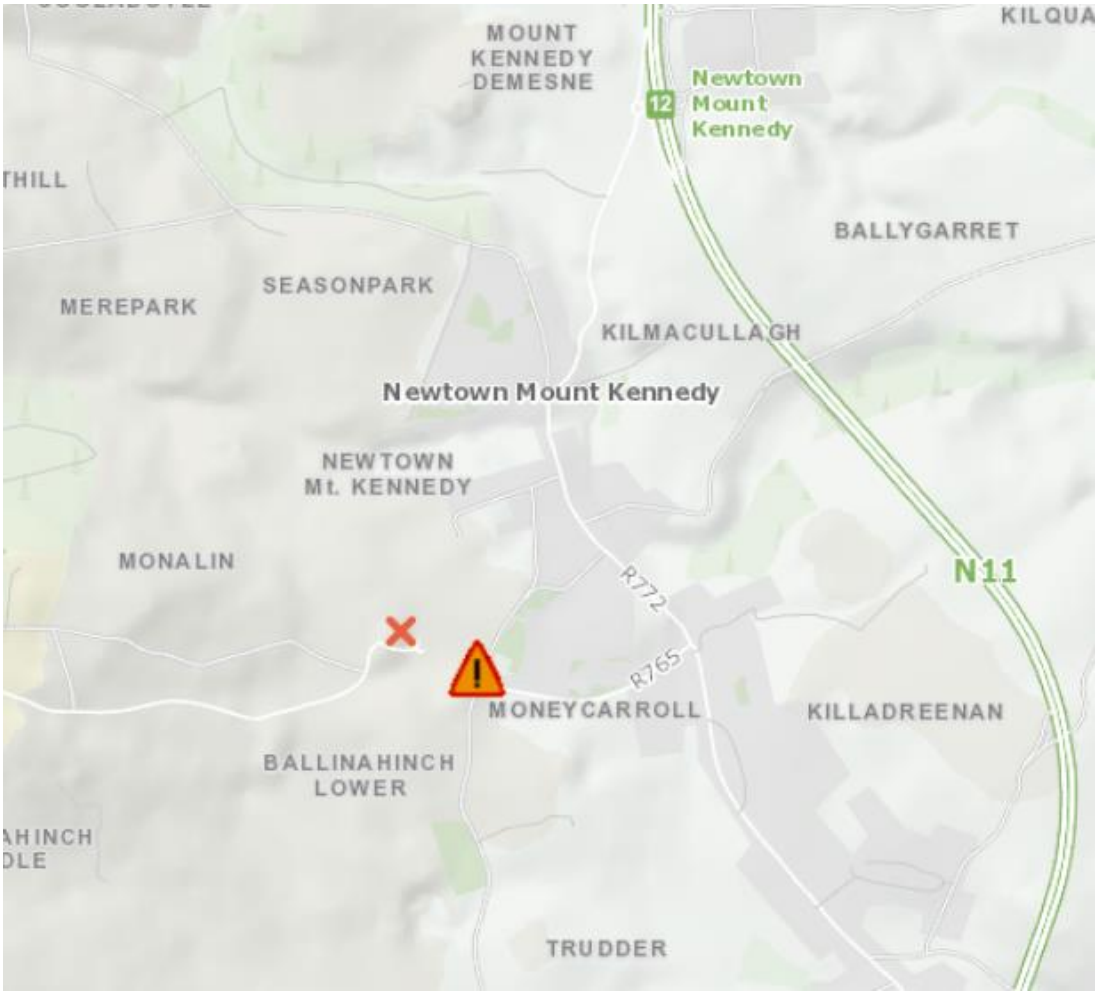


Figure 3.5 – Recorded Flood Events (Extract from www.floodinfo.ie)

Historic flooding information was collected from OPW National Flood Hazard Mapping for the subject developments and its immediate surroundings. Figure 3.5 shows a single record of flood event, approx. 230m from proposed estate 8. Refer to Appendix B for the Past Flood Events Report. Flooding occurred in October 2005 in townland Monalin, Newtownmountkennedy.
Considering the presence of the 2 No. watercourses close of the site, however, road and fields were flooded due to blocked culvert, and remedial works have been carried out.

Analysing this historic information, the predictive Strategic Flood Risk Assessment by Wicklow County Council that states there was no fluvial flood risk identified, and the sites are in Flood Zone C, it is therefore the opinion of POGA Consulting Engineers that the risk of fluvial flooding on this site is low.

3.2.2 Coastal

Coastal flooding is caused by higher sea levels that normal, largely as a result of storm surges, resulting in the sea overflowing onto the land. Coastal flooding is influenced by the following factors which can work in tandem:

- High tide level
- Low barometer pressure made worse by high winds
- Wave action dependent on wind speeds and direction, local topography, and exposure.

Floodinfo.ie shows Past Flood Hazard Maps information about places that may be at risk from flooding. The website allows the user to view reports, photographs, newspaper articles, and other information about reported floods.

The coastal maps for the area of the subject estates 4, 6 and 8 in the townland of Newtownmountkennedy was not included in the Areas for Further Assessment (AFA) of the same program, which indicates it is not considered to be at risk of significant flooding by OPW.
Refer to Figure 3.6 for the closest areas to the subject sites which have been further assessed and for most up to date River & Coastal Flood Extents mapping. Tidal flooding was also assessed under the SRFA study of the Wicklow County Council development plan 2022-2028. According to the study, no tidal flood risk was identified on the area. Also, in the case of the subject sites, the coast is approx. 5.2 km to the East of the sites, over 100m higher than the sea level. It is the opinion of POGA that the risk of coastal flooding is low.

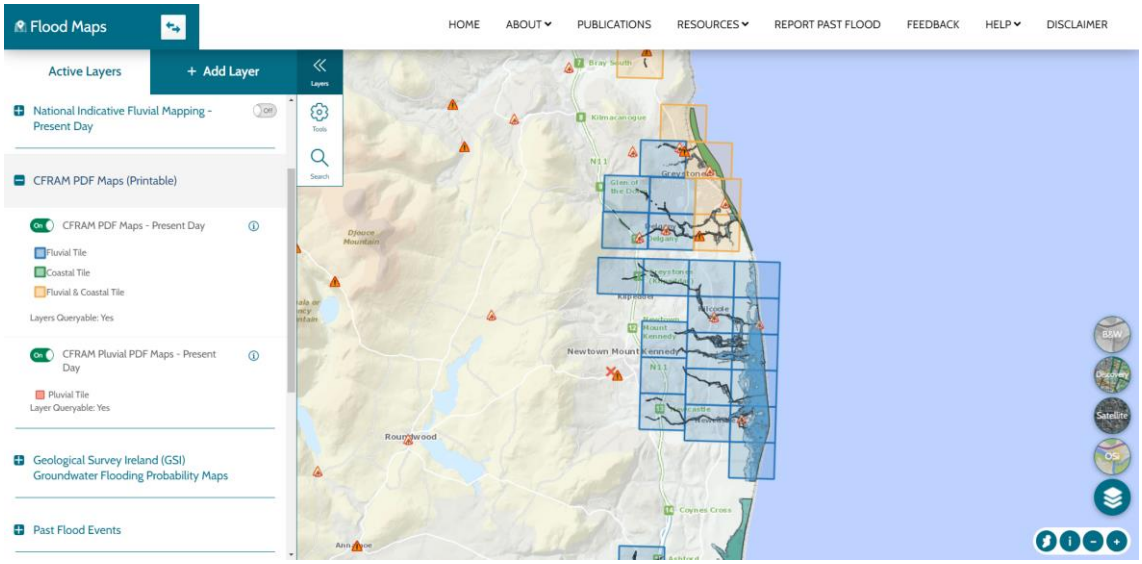


Figure 3.6 – Extract from www.floodinfo.ie

3.2.3 Pluvial

Overland flow occurs when the amount of rainfall exceeds the infiltration capacity of the ground to absorb it. This excess water flows overland ponding in natural hollows. According to the OPW National Flood Hazard Mapping there are no recorded instances of pluvial flooding within or directly adjacent to the site. In addition, the OPW Preliminary Flood Risk Assessment (PFRA) map provided in Appendix C shows the subject sites are not located in the 1% AEP Pluvial Flood Extent. Considering the location of the 3 No. sites and the topography of the fields, the flow running from the rainwater is unlikely to be concentrated in the sites. It deems the natural water flow would be running down towards the centre of the valley, to the existing stream.

Regarding the increase of the hardstanding area due to the new developments, it would potentially intensify the water run-off from the sites. To minimize the potential increase of the run-off, and consequently, the flood risk to neighbouring properties, mitigation measures have been proposed in the form of SuDS techniques. These include permeable paved areas, and new attenuation tanks to estate 6, as per POGA Consulting Engineers' drawings. The proposed wastewater layout is as per POGA Consulting Engineers drawings reference 22008-332, 22008-334, 22008-531, 22008-631, submitted as part of the planning. It is our opinion that the risk of pluvial flooding on this site is low.

3.2.4 Flooding from public sewers

Flooding resulting when flow entering a drainage system exceeds its discharge capacity and the system becomes blocked and/or cannot discharge due to a high-water level in the receiving watercourse or outfall.

As mentioned under the section 3.2.1 of this report, there is a single flooding event recorded close to the estate 8, in the townland of Monalin, Newtownmountkennedy dated October 2015.
Please refer to appendix 5.2 for the Flood Report and Minutes of Meeting, that state the flood occurred due to a blocked culvert and remedial works have already been carried out. No records have been stated since then. Additionally, the new developments and its proposed drainage system are being designed to take and attenuate the additional flow, avoiding overloading the existing systems and improving the overall outflow. A minimum pipe size of ø225mm will be adopted for the surface water to help prevent any blockages.

The flows from the surface water system discharge into attenuated pond, designed to store 1:100-year storm event plus 20% for climate change.

Each site will have at least 2 points of wastewater connection with the existing network. As with all underground infrastructure, some periodic maintenance is required. In our opinion the residual risk of flooding from public sewers therefore is deemed to be low.

3.2.5 Groundwater

Groundwater flooding occurs when the level of water stored in the ground rises as a result of prolonged rainfall to meet the ground surface and flows out over it. When the capacity of this underground reservoir is exceeded. Groundwater flooding tends to be very local and results from interactions of site-specific factors such as tidal variations.

There is no history of groundwater flooding in the area according to the OPW National Flood Hazard Mapping. The OPW PFRA was also reviewed and did not indicate groundwater flooding at the site or surrounding areas. The SFRA by JBA Consulting Engineers on behalf of WCC does not include groundwater flood risks, and the interactive website "www.floodinfo.ie" operated by the OPW doesn't have any information related to this matter as well. The Geological Survey Ireland website (gsi.ie) has available an interactive map for groundwater flood, however no flood is shown in Newtownmountkennedy town and surrounding areas. Refer to figure 3.7.

In conclusion, there is a lack of updated information in regard to the groundwater depth and geological materials under the subject development lands, but due to the fact there is no history of flood events we would believe the risk of groundwater flooding is low.

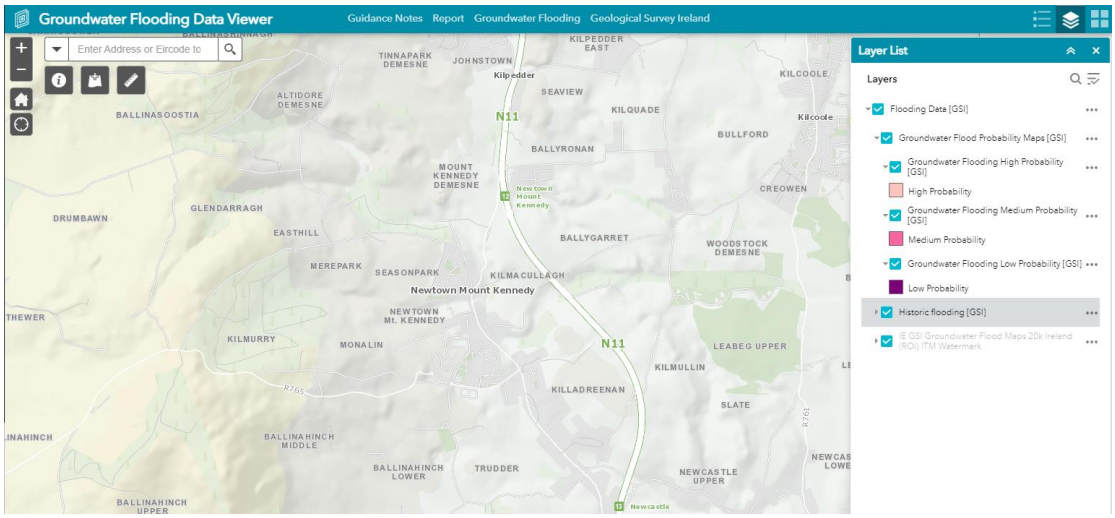


Figure 3.7 – Extract from www.gsi.ie

4.0 CONCLUSIONS

All sources and predictive maps indicate that the development under proposed estates 4, 6, and 8 in Newtownmountkennedy is classed as ”Zone C” in accordance with the Guidelines on the Planning System and Flood Risk Management 2009, “Flood Zone C covers all areas of the plan which are not in zones A or B.” A development in this zone is appropriate from a flood risk perspective. Additionally, historical information was reviewed, and no flood events were recorded within the subject sites, including pluvial, fluvial, coastal, and groundwater vulnerability. Based on the information and data available, it is our opinion that estates 4, 6,and 8 are suitable for development and we would consider these sites has an overall low risk of flooding.

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Checked by;

Paul Moran
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Enclosed:
Appendix A – Newtownmountkennedy Indicative Flood Zones
Appendix B – Past Flood Events
Appendix C – CFRAM Mapping

APPENDICES

5.1 APPENDIX A

Newtownmountkennedy Indicative Flood Zones

Newtownmountkennedy Town Plan

Map No. 3

Indicative Flood Zones

WICKLOW
ENDLESS OPPORTUNITIES

Legend

- Settlement Boundary
- Flood Zone A: High probability of flooding

  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: Moderate probability of flooding

  Where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding)

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.

Full Disclaimer is included in SFRA

WICKLOW COUNTY DEVELOPMENT PLAN 2022-2028

Wicklow County Council
Planning Department

Scale 1:11,000 @ A3

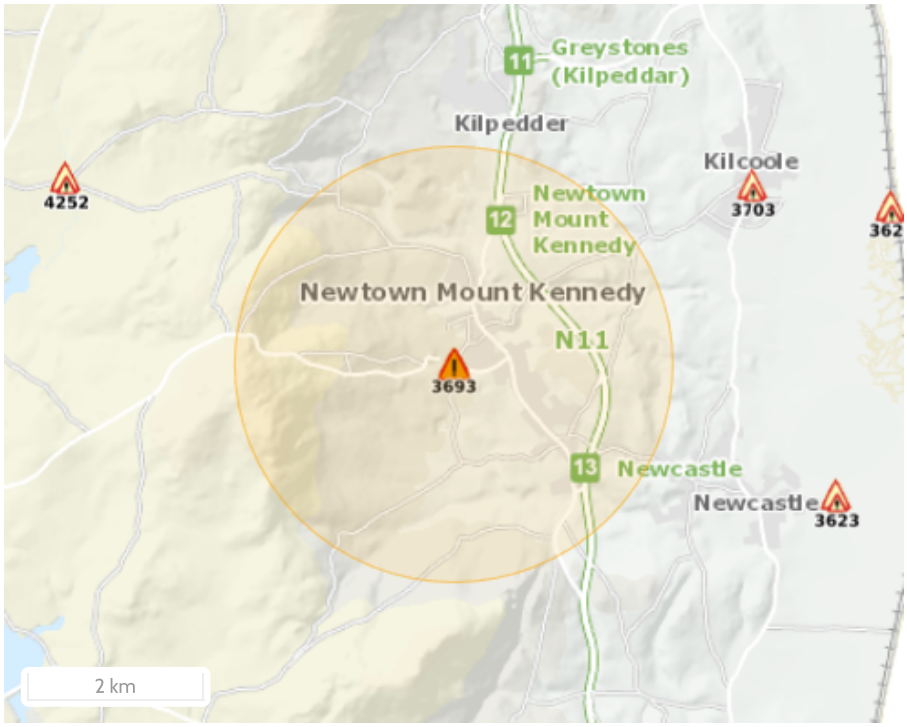
5.2 APPENDIX B

Past Flood Events

Past Flood Event Local Area Summary Report

Report Produced: **5/10/2023 14:28**

This Past Flood Event Summary Report summarises all past flood events within 2.5 kilometres of the map centre.



Map Legend

- Single Flood Event
- Recurring Flood Event
- Past Flood Event Extents
- Drainage Districts Benefited Lands*
- Land Commission Benefited Lands*
- Arterial Drainage Schemes Benefited Lands*

* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained on Floodinfo.ie

1 Results

	Name (Flood_ID)	Start Date	Event Location
1.	Monalin, Newtownmountkennedy Oct 2005 (ID-3693)	30/09/2005	Approximate Point

Additional Information: Reports (2) Press Archive (0)

MINUTES OF MEETING

Reference:	**P4D403A – F310 – 036 – 004 – 2600**	**Page 1 of 2**
Project No.:	**P4D403A**	
Project Title:	**OPW Flood Hazard Mapping Programme**	
Purpose of Meeting:	**Data Collection Meeting No 8 – Wicklow County Council**	
Participating:	**Senior Executive Engineer Greystones Region**	**Wicklow CC**
	General Services Supervisors x 2	**Wicklow CC**
	Search Manager	**ESBI**
Venue:	**Wicklow Council Offices, Greystones.**	
Date of Meeting:	**12/01/2006**	
Copies to:	**File**	
Compiled by:	**Search Manager**	
Status:	**Final**	
Approved for ESBI:	**Search Manager**	
Approved for Wicklow County Council	**Senior Executive Engineer**	
Date:	**13/01/2006**	

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Website: www.esbi.ie

A copy of a Report ‘Greystones Sewerage Scheme, Stage 2 - Phase2, Storm Water Review’, Three Trouts Stream.’ was provided.

Locations prone to flooding in the area of responsibility of the Senior Executive Engineer Greystones Region are as follows:-(identified on 1:50,000 Discovery Series Map 56)

80. Greystones Harbour
    High tide in combination with heavy rain floods road between Railway Bridge and Public House. Occurs on average twice a year. Road passable. [Flood ID 3692]

81. Monalin, Newtownmountkennedy
    Road and fields flooded in October 2005 due to blocked culvert. Remedial works have been carried out. [Flood ID 3693]

82. Greystones Park & Ride Car park
    High tide in combination with heavy rain causes flooding of car park to depth of 150mm. Approx. once a year. Flooding recedes with tide. [Flood ID 3701]

83. Glenair, Delgany
    Land floods when the Three Trout Stream overflows its banks. Flooded twice in last four years. New construction in progress. [Flood ID 3702]

84. Beachdale Estate/Meadowbrook, Kilcoole
    Properties flood to doors when bridge blocks. [Flood ID 3703]

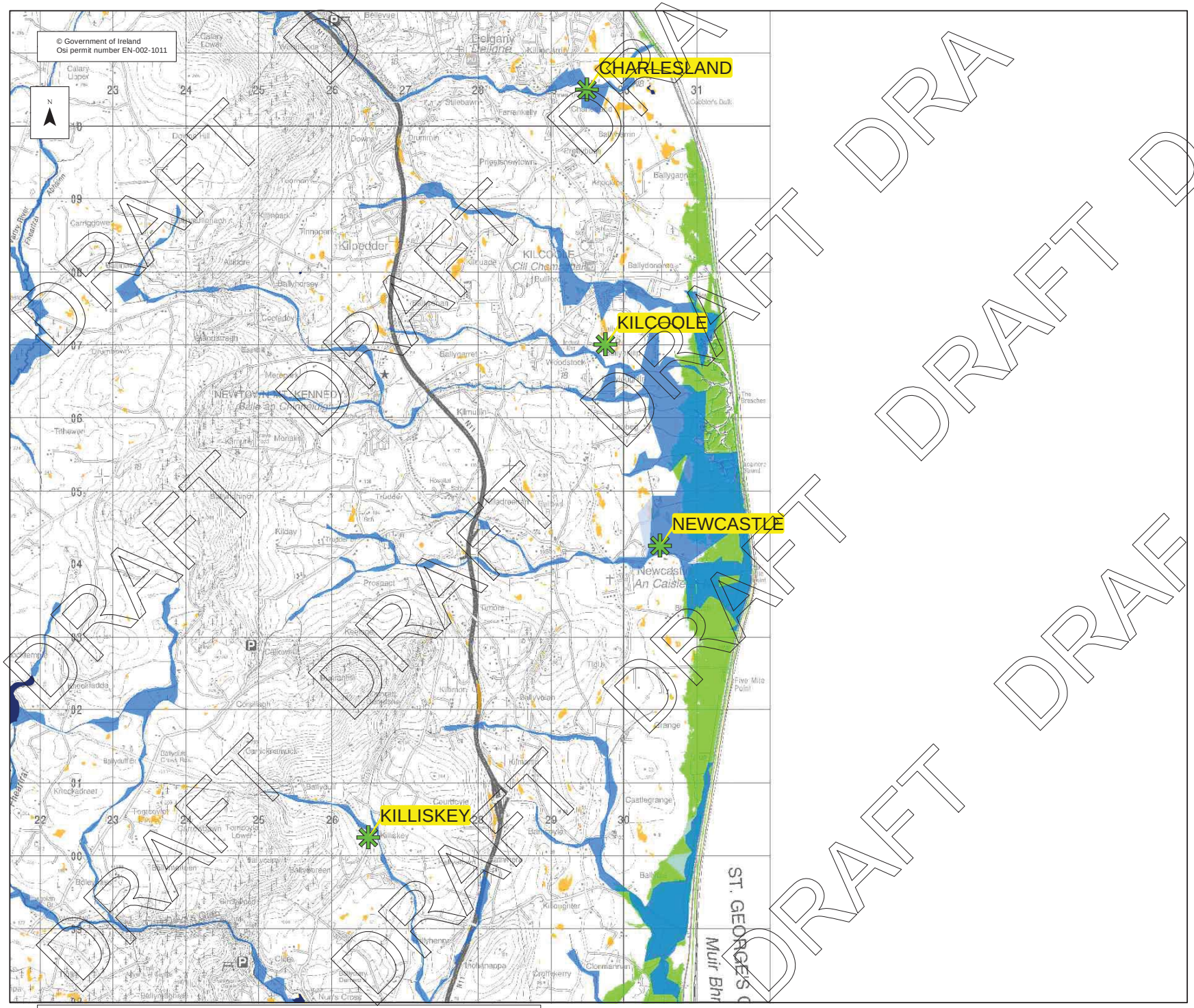
85. Maguires Field, The Scalp
    Road (to depth of 100mm) and lands on both sides flood after heavy rain. Once or twice a year. [Flood ID 3704]

86. Kilcroney Lane
    One property floods to door after heavy rain. [Flood ID 3705]

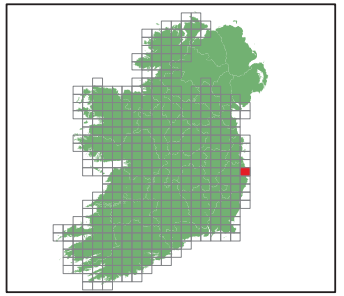
87. Forge Road, Enniskerry.
    Basement of house on Forge Road badly flooded twice about eight years ago. [Flood ID 3706]

5.3 APPENDIX C

CFRAM Mapping



Location Plan :



Legend:

Flood Extents

- Fluvial - Indicative 1% AEP (100-yr) Event
- Fluvial - Extreme Event
- Coastal - Indicative 0.5% AEP (200-yr) Event
- Coastal - Extreme Event
- Pluvial - Indicative 1% AEP (100-yr) Event
- Pluvial - Extreme Event
- Groundwater Flood Extents
- Lakes / Turloughs

PFRA Outcomes

- Probable Area for Further Assesment
- Possible Area for Further Assesment

Important User Note:

The flood extents shown on these maps are based on broad-scale simple analysis and may not be accurate for a specific location. Information on the purpose, development and limitations of these maps is available in the relevant reports (see www.cfram.ie). Users should seek professional advice if they intend to rely on the maps in any way.

If you believe that the maps are inaccurate in some way please forward full details by contacting the OPW (refer to PFRA Information leaflets or 'Have Your Say' on www.cfram.ie).

Office of Public Works
Jonathon Swift Street
Trim
Co Meath
Ireland

Project :
PRELIMINARY FLOOD RISK ASSESMENT (PFRA)

Map :
PFRA Indicative extents and outcomes
- Draft for Consultation

Figure By : PJW Date : July2011

Checked By : MA Date : July 2011

Figure No. : 2019 / MAP / 205 / A

Revision 0

Drawing Scale : 1:50,000 Plot Scale : 1:1 @ A3