



Magee Barracks, Kildare

Planning Application

Flood Risk Assessment

May 2019

GARLAND
Concepts Realised

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Description of change	Originator	Rev	Approval	Date
Initial Release	CR	1st	KR	30/05/2019

1. INTRODUCTION

1.1. Background

GARLAND Consulting Engineers has prepared this Site Specific Flood Risk Assessment (FRA) to demonstrate that the proposal to develop the site of the former Magee Barracks in Kildare Town for housing and commercial uses, is in full compliance with the requirements of “The Planning System & Flood Management Guidelines” published by the Department of Environment, Heritage and Local Government in November 2009.

1.2. Flood Risk Management Guidelines

“The Planning System and Flood Risk Management Guidelines” (hereafter referred to as FRM Guidelines) was published by the government in November 2009. The core principle of the guidelines is to adopt a risk based sequential approach to managing flood risk and to avoid new development in areas that are at risk. The guidelines sets out the following description of flood risk zones;

Flood Zone A (High Probability)

- Subject to flooding in the 1 in 100 year return period storm event – rivers;
- Subject to flooding in the 1 in 200 for year return period event – coastal/ tidal areas.

Flood Zone B (Moderate Probability)

- Subject to flooding in the 1 in 1000 year return period storm event – rivers;
- Subject to flooding in the 1 in 1000 for year return period event – coastal/ tidal areas.

Flood Zone C (Low Probability)

- Subject to flooding only for events storm greater than the 1 in 1000 year return period.

The guidelines set out the different types of development appropriate to each zone, as shown in Table 1.1. Housing is considered highly vulnerable development while commercial uses are considered less vulnerable development and therefore is considered “Appropriate” for location in Flood Zone C without the need for a justification test.

	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

Table 1.1 – Development in Flood Zones

Exceptions to the restriction of development are provided for through the use of the Justification Test as noted in the Table 1.1, whereby the planning need and the sustainable management of flood risk must be demonstrated for a new development. This recognises that there is need for new development in existing towns and urban centres that lie within flood risk zones and that the avoidance of all new development in these areas would be unsustainable.

2. REVIEW OF POTENTIAL FLOOD RISK

2.1. Data Sources

In the case of this development, we have reviewed the main sources of potential flood risk to determine the Flood Risk Zoning applicable to this development. The site extent reviewed as part of this flood risk assessment is shown in Figure 2.1, but note that this not necessarily reflect the red line boundary for the planning application. All potential flood risks and sources of flood water have been considered. In establishing extent of the flood risk, a number of sources of information have been considered, including;

- The OPW Flood Hazard Mapping website,
- The OPW CFRAMS Study and Flood Risk Mapping;
- The Kildare County Development Plan 2017-2023 Strategic Flood Risk Assessment Report;
- Office of Public Works (OPW) Preliminary Ground Water Flood Hazard Map for Ireland (2010);
- Local and historical information, including 6” (refer to Figure 2.2) and 25” mapping for the site.
- Kildare Town Local Area Plan Flood Risk Policies.



Figure 2.1 – Aerial View of Former Magee Barracks Site subject to this FRA

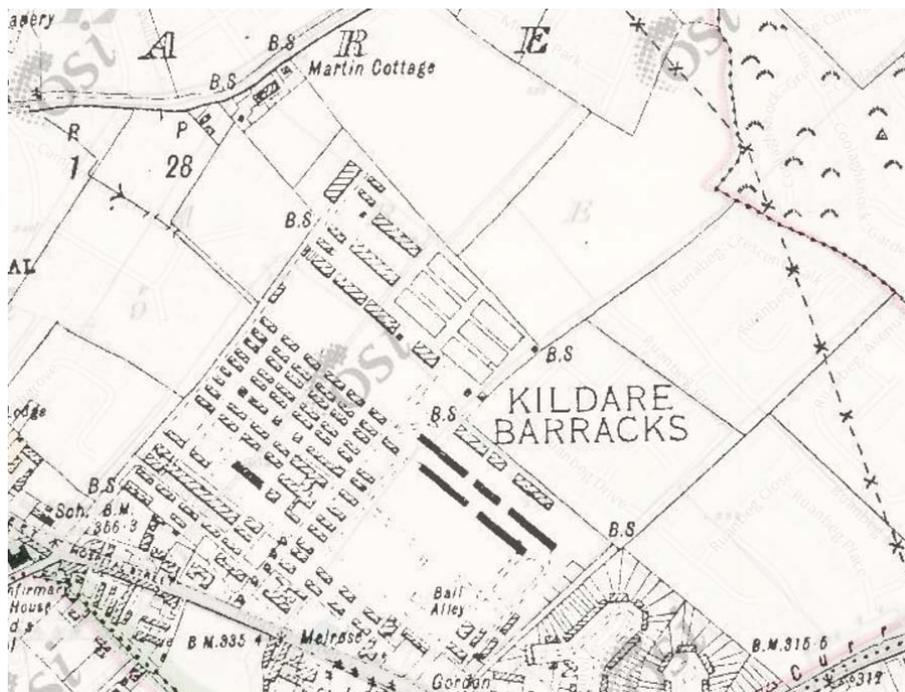


Figure 2.2 – Historical 6" Cassini Map (1837-1842)

2.2. Fluvial Flood Risk

Fluvial Flooding is the result of a watercourse (river, stream etc.) exceeding its capacity and excess water spilling out onto the adjacent floodplain. Figure 2.1 from the Kildare County Development Plan 2017-2023 Strategic Flood Risk Assessment Report below indicates the watercourses in the county. In Kildare town and surrounds, there are no watercourses identified. The nearest channels, tributaries of the River Barrow, are located to the south of the M7 Motorway.

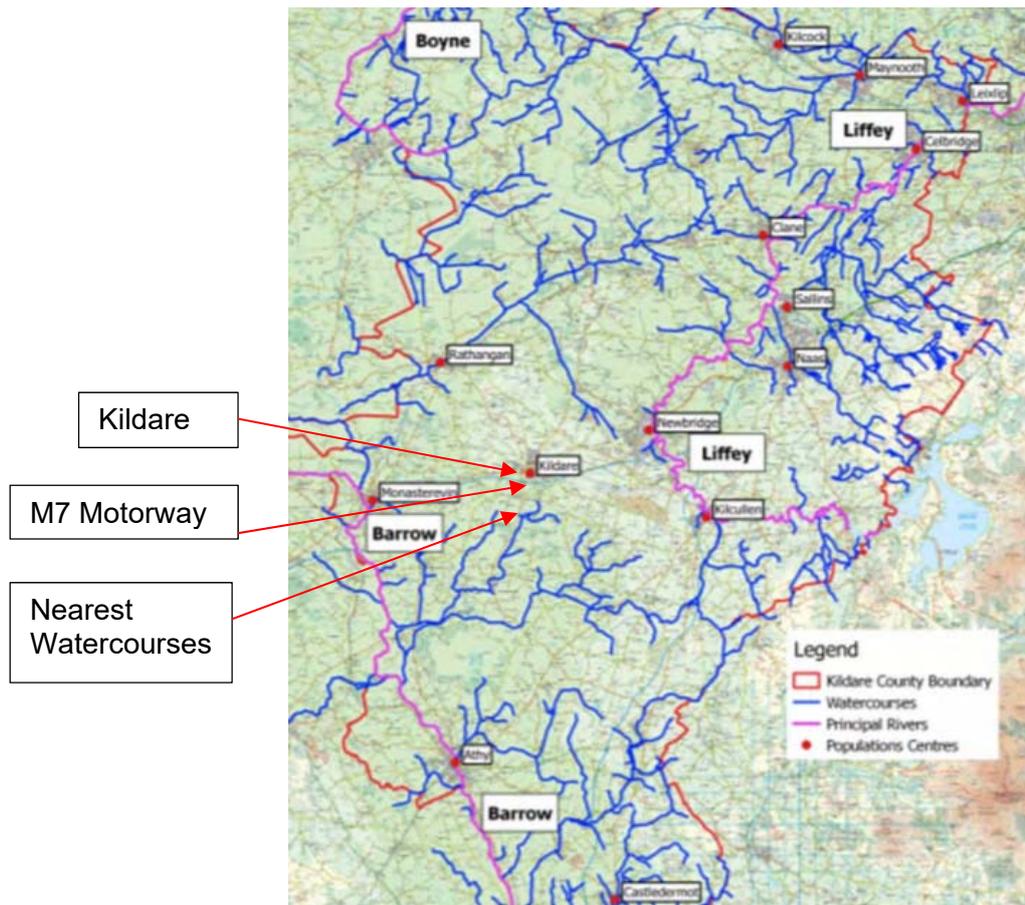


Figure 2.1 – Watercourses in Kildare County

Due to the absence of watercourses, the OPW CFRAMS study did not consider the town an area of fluvial flood risk and no detailed CFRAMS flood risk mapping were therefore prepared for the town. The preliminary OPW flood risk mapping for the town confirms this, with an extract from the relevant map provided in Figure 2.2 overleaf. In addition to this, the OPW Flood Hazard Mapping has no records of flooding at this site.

We are therefore fully satisfied that the site of the proposed development is not located in a fluvial flood plain and can be considered to be located in Flood Zone C (low risk) as it pertains to fluvial flooding.

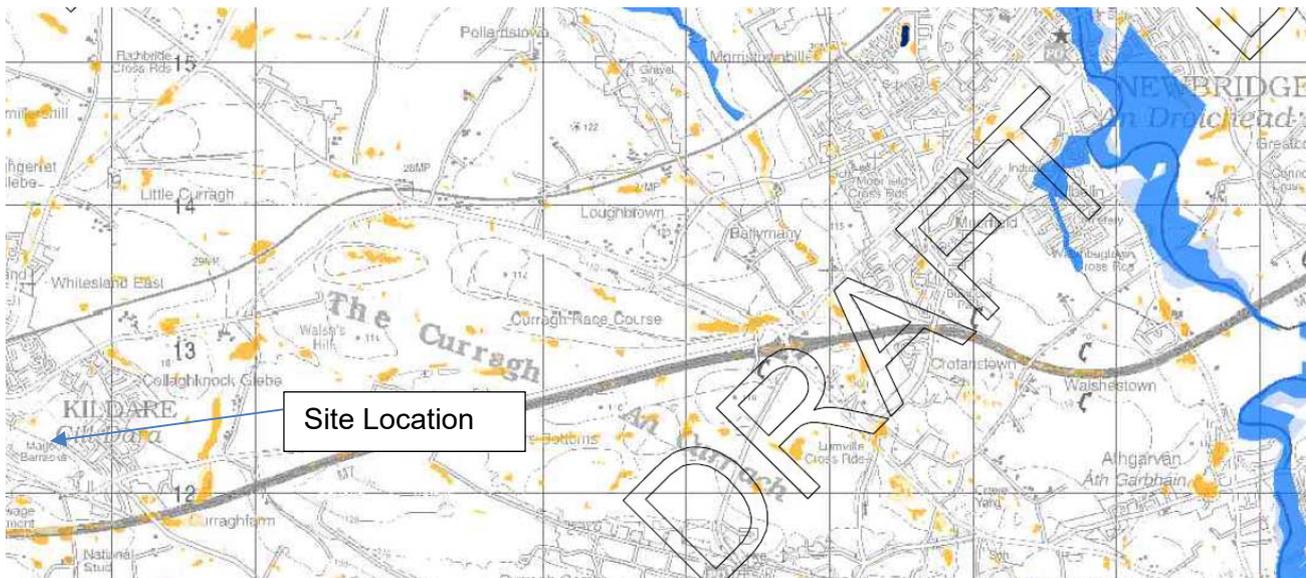


Figure 2.2 OPW Preliminary Flood Risk Mapping

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 Assessment
- ✱ Possible Area for Further Assessment

Office of Public Works
Jonathon Swift Street
Trim
Co Meath
Ireland



Project :
PRELIMINARY FLOOD RISK ASSESSMENT (PFRA)

Map :
**PFRA Indicative extents and outcomes
- Draft for Consultation**

Figure By : PJW Date : July 2011
Checked By : MA Date : July 2011

Figure No. : 2019 / MAP / 219 / A	Revision 0
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Drawing Scale : 1:50,000 Plot Scale : 1:1 @ A3

2.3. Pluvial/ Storm Water Flood Risk

Pluvial flooding is the result of rainfall-generated overland flows which arise before run-off enters a watercourse or sewer (i.e. storm flows). Pluvial / Storm Water flooding has been noted in both the Kildare LAP and the OPW Flood Hazard Mapping data base in close proximity to the site. Upon further inspection, and aligning with a report contained with the OPW Flood Hazard Map (both contained within Appendix A of this report), the flooding in question occurs outside of the subject site. The report relates to the minutes of a meeting with the Area Engineer for Kildare on 30/03/05. The Area Engineer notes that flood events occur at this 'low lying area as a significant portion of surface water in Kildare town is piped to this location'. This would indicate that the flooding is in a public area. We would also note that the drainage in this area has been upgraded in recent years by KCC / Irish Water.

Pluvial flood risk at this site will be addressed by the provision of a sustainable urban drainage system (SUDS) that will collect and discharge storm water to ground, with overflows to the adjacent public storm system. This SUDS system has been designed in accordance with the Greater Dublin Strategic Drainage Study (GSDSDS) and CIRIA SUDS Manual. The design of the SUDS system is addressed in the accompanying engineering services report. Based on the provision of a SUDS system designed to the relevant standards, the site can be considered to be in Flood Zone C (low risk) as it pertains to pluvial flooding.

The topography of the area for Phase 2 of the development shall not be affected due to Phase 1 of the development. The topography of the Phase 2 site falls from the northwest towards the southeast of the site, away from the Phase 1 site. Therefore, the development of Phase 1 does not adversely affect the current pluvial condition of the Phase 2 site.

2.4. Coastal/ Tidal Flood Risk

Coastal/Tidal Flooding is the result of a high tide or a high tide combined with a storm surge which results in inundation of the floodplain. Kildare is not located on the coast or on the tidal reach of a river so the site is not at risk of coastal flooding.

2.5. Groundwater Flood Risk

Groundwater flooding occurs as a result of water rising up from the underlying rocks or from groundwater flowing from abnormal springs. This type of flooding tends to occur after very long periods of sustained high rainfall and typically manifests itself as winter lakes or turloughs. The conclusion of the Kildare County Development Plan 2017-2023 Strategic Flood Risk Assessment Report is that “*ground water flooding is not a significant risk for Kildare*” but notes that it should be examined at detailed FRA level “*particularly if the development includes proposals for basements*”. For this site, our review of hydro-geological mapping and the Office of Public Works (OPW) Preliminary Ground Water Flood Hazard Map for Ireland (2010) has determined that groundwater flooding is not a key risk at this site. We therefore note that the site can be considered to be in Flood Zone C (low risk) as it pertains to ground water flooding.

3. CONCLUSION

All existing information has been reviewed regarding flood risk in the location of the proposed development. We are fully satisfied, based on the available information, that the site of this proposed development is located in Flood Zone C (low risk) for all sources of flood risk. The proposals for housing and commercial development on this site therefore achieve full compliance with the requirements of "The Planning System & Flood Management Guidelines" published by the Department of Environment, Heritage and Local Government in November 2009.

Signed: 
CATHAL RIGNEY
REGISTERED PROFESSIONAL CONSULTING ENGINEER

Date: 30 May 2019

APPENDIX A

Summary Local Area Report

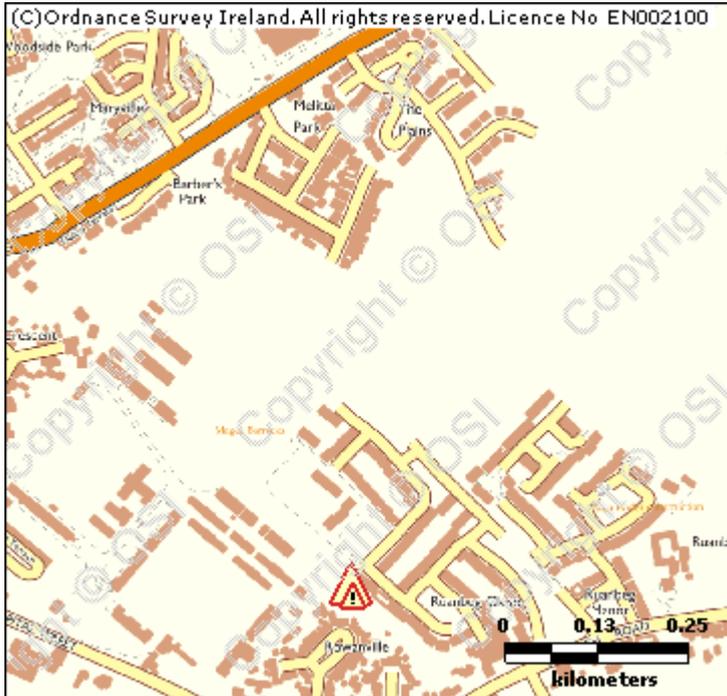
This Flood Report summarises all flood events within 2.5 kilometres of the map centre.

The map centre is in:

County: Kildare

NGR: N 738 125

This Flood Report has been downloaded from the Web site www.floodmaps.ie. The users should take account of the restrictions and limitations relating to the content and use of this Web site that are explained in the Disclaimer box when entering the site. It is a condition of use of the Web site that you accept the User Declaration and the Disclaimer.



Map Scale 1:10,458

Map Legend	
	Flood Points
	Multiple / Recurring Flood Points
	Areas Flooded
	Hydrometric Stations
	Rivers
	Lakes
	River Catchment Areas
	Land Commission *
	Drainage Districts *
	Benefiting Lands *

* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained in the Glossary.

1 Result



1. Kildare Town Recurring

County: Kildare

Additional Information: [Reports \(1\)](#) [More Mapped Information](#)

Start Date:

Flood Quality Code:4

MINUTES OF MEETING

Reference: P4D403A – F310 – 017 – 004- Page 1 of 3
002

Project No.: P4D403A

Project Title: OPW Flood Hazard Mapping – Phase 1

Purpose of Meeting: Kildare County Council – Oral Report – Area Engineer – Kildare

Participating: Area Engineer Kildare County Council
Supervisor Kildare County Council
Search Manager ESBI

Venue: Kildare

Date of Meeting: 30/03/05

Copies to:

Compiled by: Search Manager ESBI

Status Draft

Approved for ESBI:

Approved for Kildare County Council

Date:

Meeting with Area Engineer for Kildare 30/03/05

The Area Engineer and his supervisor outlined 26 areas that are or were prone to flooding. These are: -

37. Monasterevin – Drain No 15 of the barrow drainage district floods after heavy rain. Road is liable to flooding
Flood Id = 1483
38. Rathgan – Flood plain of River Slate. Floods every year. 2 locations
Flood Id = 1484, Flood Id = 1485
39. Plunkerstown – Tributary of the river slate overflow is banks after heavy rain every year.
Flood Id = 1486
40. Kildare Town – Low lying area to the north of the town floods every year. A significant portion of the surface water drainage in Kildare town is piped to this location.
Flood Id = 1487
41. Nurney – Low lying area floods after exceptional heavy rain. Doesn't flood every year. Road is liable to flooding. No property is affected
Flood Id = 1488
42. Suncroft – Stream flowing along road overflows after heavy rain. Properties are affected. Council cleans streams every year
Flood Id = 1489
43. Baronstown West – Low lying area floods after heavy rain. There is inadequate drainage.
Flood Id = 1490
44. Kilbelin, Newbridge – Area floods after heavy rain. The surface water system not able to cope. Occurs 1 or 2 times per year.
Flood Id = 1491
45. Athgarvan to Kinneagh Cross Roads – Road is liable to flooding after heavy rain every year.
Flood Id = 1492
46. Kinneagh Cross Roads to Donnelly Cross Roads – Road is liable to flooding after heavy rain every year.
Flood Id = 1493
47. Miltown Road, Newbridge – Tributary of the Liffey overflows its banks after heavy rain. Housing in Lakeside Park and Mount Carmel are affected. Developer has undertaken some remedial work
Flood Id = 1494
48. Newbridge College, Newbridge – Flooding occurs at the junction of the stream in 47 and the Liffey after heavy rain.
Flood Id = 1495
49. Hosbery – Stream entering Liffey overflows its banks after heavy rain
Flood Id = 1496
50. Tankardsgarden – Low lying land floods after heavy rain every year due to inadequate drainage. Land has been raised and no flooding has subsequently occurred
Flood Id = 1497
51. Holy Well, Barretstown – Stream entering Liffey overflows its banks after heavy rain
Flood Id = 1498
52. Clongarey, Blacktrench and Derreens - Low lying land floods after heavy rain every year
Flood Id = 1499, Flood Id = 1500, Flood id = 1501

53. Carragh – Annislingh Stream overflows its banks after exceptional heavy rain. Not every year. Road is liable to flood and some properties are affected.
Flood Id = 1502
54. Moorfield, Newbridge – Ballymanagh Cottages are liable to flood after significant heavy rain due to runoff from Hotel Carpark.
Flood Id = 1503
55. Naas Road, Newbridge– Road is liable to flood every year after heavy rain due to inadequate drainage.
Flood Id = 1504
 1. The Island, Newbridge – Flood plain of River Liffey
Flood Id = 1505
56. Greatconnel to Clownings – Stream which flows along road overflows its banks after heavy rain. Road is liable to flood.
Flood Id = 1506
57. Athgarvan – Low lying land floods after heavy rain. Road is liable to flood
Flood id = 1507

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