



**OBA** | CONSULTING  
CIVIL & STRUCTURAL  
ENGINEERS

## **SITE SPECIFIC FLOOD RISK ASSESSMENT FOR PLANNING SUBMISSION**

**Kinnegad Economic Enterprise Hub  
Kinnegad  
Co. Westmeath**

**Reference:** 99-06  
**Date:** 04 March 2024



**ENGINEERS  
IRELAND**



**ACEI**  
Association of Consulting  
Engineers Ireland

OBA Consulting Engineers Ltd  
The School Yard  
1 Grantham Street  
Dublin 8  
Tel +353 1 535 0084  
Web [www.obaconsulting.ie](http://www.obaconsulting.ie)

Client: Westmeath County Council  
 Architect: Cooney Architects  
 Report prepared by: Ciaran O'Brien

<b>1</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>2</b>	<b>INTRODUCTION .....</b>	<b>3</b>
2.1	Proposed development .....	3
2.2	Flood risk assessment Methodology.....	4
2.3	Site location .....	4
2.4	Existing site usage & topography .....	5
2.5	Existing water courses in the vicinity of the proposed development .....	5
<b>3</b>	<b>FLOOD RISK IDENTIFICATION .....</b>	<b>5</b>
3.1	Assessment of Flood maps/Flooding History .....	5
3.1.1	<i>Floodmaps.ie Website</i> .....	5
3.2	Predictive Flooding information .....	6
3.3	Sources of Flooding.....	6
3.3.1	<i>Coastal</i> .....	6
3.3.2	<i>Fluvial</i> .....	6
3.3.3	<i>Pluvial</i> .....	7
3.3.4	<i>Ground Water</i> .....	7
<b>4</b>	<b>FLOOD RISK IMPACT ASSESSMENT, RECEPTORS &amp; MITIGATION .....</b>	<b>7</b>
4.1	flood risk & mitigating measures.....	7
4.2	Impact on adjoining properties.....	7
<b>5</b>	<b>CONCLUSION .....</b>	<b>8</b>
<b>6</b>	<b>APPENDIX A OPW FLUVIAL CFRAM STUDY MAPS .....</b>	<b>9</b>

**FLOOD RISK ASSESSMENT REPORT**

Project: Kinnegad Economic Enterprise Hub, Kinnegad, Co. Westmeath  
 Job No: 99-06  
 Revision:

By: COB

Date: 04.03.2024

## 1 EXECUTIVE SUMMARY

OBA Consulting were appointed by Cooney Architects to provide a flood Risk assessment and report for the proposed Kinnegad Economic Enterprise Hub (EEH), Kinnegad, Co. Westmeath.

The development consists of part demolition, renovation and extension of a two storey Community EEH with associated services and landscaped gardens.

The site is located in flood zone C.

Based on the findings below it is our opinion the development poses a negligible flood risk.

## 2 INTRODUCTION

### 2.1 PROPOSED DEVELOPMENT

The proposal is to for limited demolition of existing structures, renovation and construction of a two storey Community EEH with associated services and landscaped gardens.

The proposed site layout plan is provided in figure 2.1 below

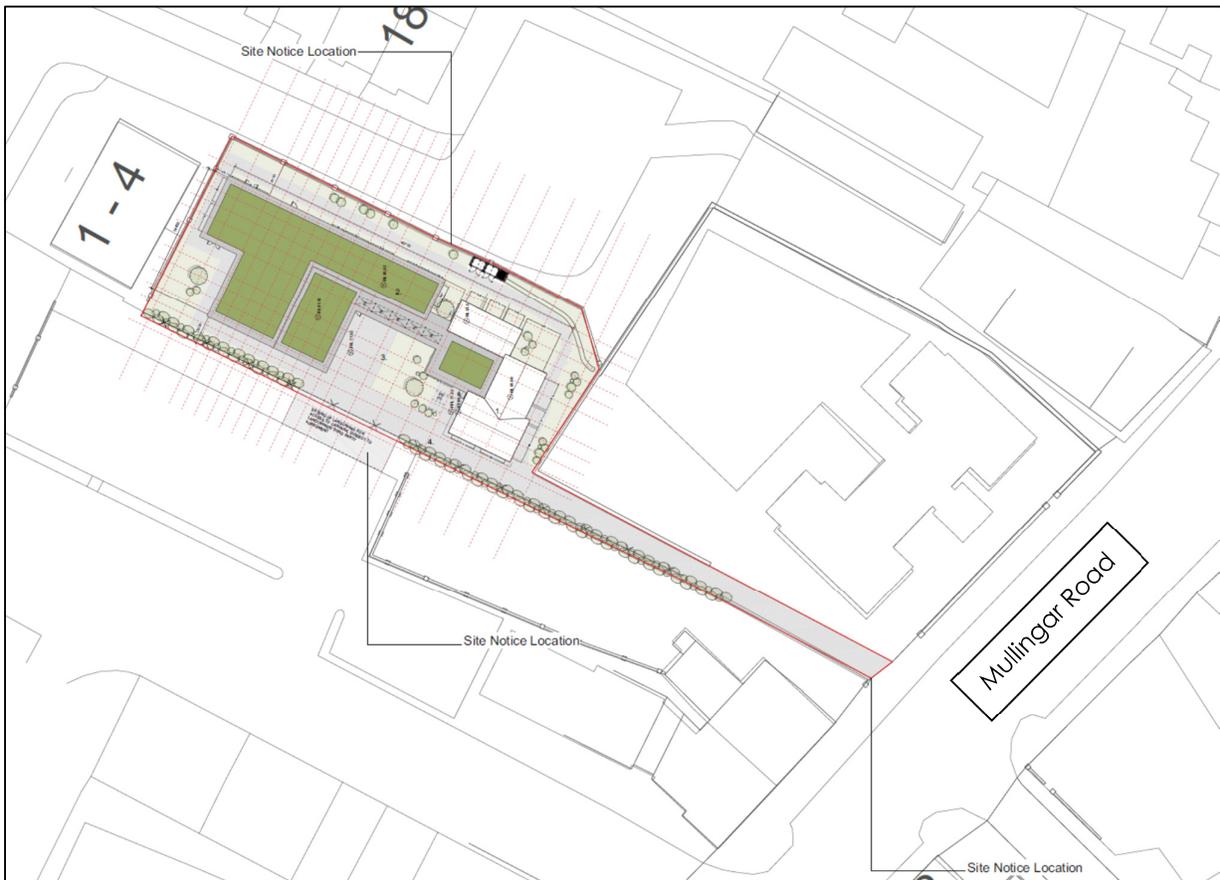


Fig 2.1 Proposed Site Layout Plan

### FLOOD RISK ASSESSMENT REPORT

Project: Kinnegad Economic Enterprise Hub, Kinnegad, Co. Westmeath

Job No: 99-06

Revision:

By: COB

Date: 04.03.2024

3

## 2.2 FLOOD RISK ASSESSMENT METHODOLOGY

This FRA is set out in line with the recommendations contained in the Department of Environment Heritage and Local Government and the Office of Public Works (DEHLG/OPW) Guidelines on The Planning System and Flood Risk Management published November 2009, including identification of risk sources, Pathways, Receptors and Mitigating measures. The basis of this FRA will be site specific.

## 2.3 SITE LOCATION

The site is located north of the current renovations to the 'Kinnegad Library', with a 3m wide access strip linking the site back to Mullingar Road. Irish Grid Reference X: 259743; Y: 245436.



Fig 2.2 Site Location Aerial Map

### FLOOD RISK ASSESSMENT REPORT

Project: Kinnegad Economic Enterprise Hub, Kinnegad, Co. Westmeath

Job No: 99-06

Revision:

By: COB

Date: 04.03.2024

4

## 2.4 EXISTING SITE USAGE & TOPOGRAPHY

The site comprises existing derelict double storey residential and shed on a site of area of approx. 1092 m<sup>2</sup>.

The site rises gently northwards, with the Footpath at Mullingar Road at approximately 76.3mOD and the rear of the site at approximately 77.3m. The existing house, to be renovated and retained has an existing floor level of 77.3mOD.

## 2.5 EXISTING WATER COURSES IN THE VICINITY OF THE PROPOSED DEVELOPMENT

The site is situated in an urban environment with no waterbodies within or bordering the site. As shown in Figure 2.3 the nearest watercourse is the Kinnegad River which is located c. 400m to the south of the subject site. The finished ground floor level (77.3 mOD) of the site is suitably elevated above the Kinnegad River Flood extent, at approximately 6m above the 1000-year (0.1% AEP) return flood (C. 71 mOD), as in section 3.3.2 and figure 3.3, below.



Fig 2.3 EPA Maps

## 3 FLOOD RISK IDENTIFICATION

Historical and predictive information to allow an evaluation of the potential for flooding of the site and proposed building works is available from various sources including state and semi state bodies, recorded planning documentation and local information.

### 3.1 ASSESSMENT OF FLOOD MAPS/FLOODING HISTORY

#### 3.1.1 FLOODMAPS.IE WEBSITE

The Office of Public Works as part of their remit have developed a national flooding hazard map which collects recorded data and flooding events across the country.

We have reviewed the Flooding.ie web site. There have been no recorded flooding events in close proximity to the site.

The full 'Past Flood Events' report can be reviewed in Appendix A

#### FLOOD RISK ASSESSMENT REPORT

Project: Kinnegad Economic Enterprise Hub, Kinnegad, Co. Westmeath

Job No: 99-06

Revision:

By: COB

Date: 04.03.2024

5

### 3.2 PREDICTIVE FLOODING INFORMATION

The Eastern CFRAM study is the most detailed mapping undertaken in the Dublin region. It commenced in June 2011 with final flood maps issued during 2016. The Eastern CFRAM involves detailed hydraulic modelling of rivers and their tributaries. Following the detailed hydraulic modelling, flood maps were produced for the 10%, 1% and 0.1% AEP flood events. The available CFRAM maps cover the proposed site area. CFRAM maps covering the area of the Kinnegad River to the south, indicate Fluvial flooding extents are limited to the mapped areas south of the site. (Refer to Fig 3.3)

In the context of the site there is no flooding predicted for either a 100-year or 1000-year event for Fluvial flooding.

### 3.3 SOURCES OF FLOODING

The initial stage of a Flood Risk Assessment requires the identification and consideration of probable sources of flooding. Following the initial phase of this Flood Risk Assessment, it is possible to summarise the level of potential risk posed by each source of flooding. The flood sources are described below.

#### 3.3.1 COASTAL

Review of the Eastern CFRAM flood maps confirms that the site is not at risk of Tidal flooding originating from the Kinnegad River, the site is beyond the tidal influence. this risk can be screened out of this report.

#### 3.3.2 FLUVIAL

All available sources of historic flooding have been researched as part of the FRA. The nearest watercourse to the site is the Kinnegad River c. 400m to the south. Review of the fluvial flood mapping produced as part of the CFRAM study confirms that the site is located in Flood Zone C. Based on the available information. (Refer to Fig. 3.3).

The site is located at an elevation of approximately 77 mOD with the Kinnegad River 1000-year (0.1% AEP) flood at approximately 71 mOD to the south, this risk can be screened out of this report.

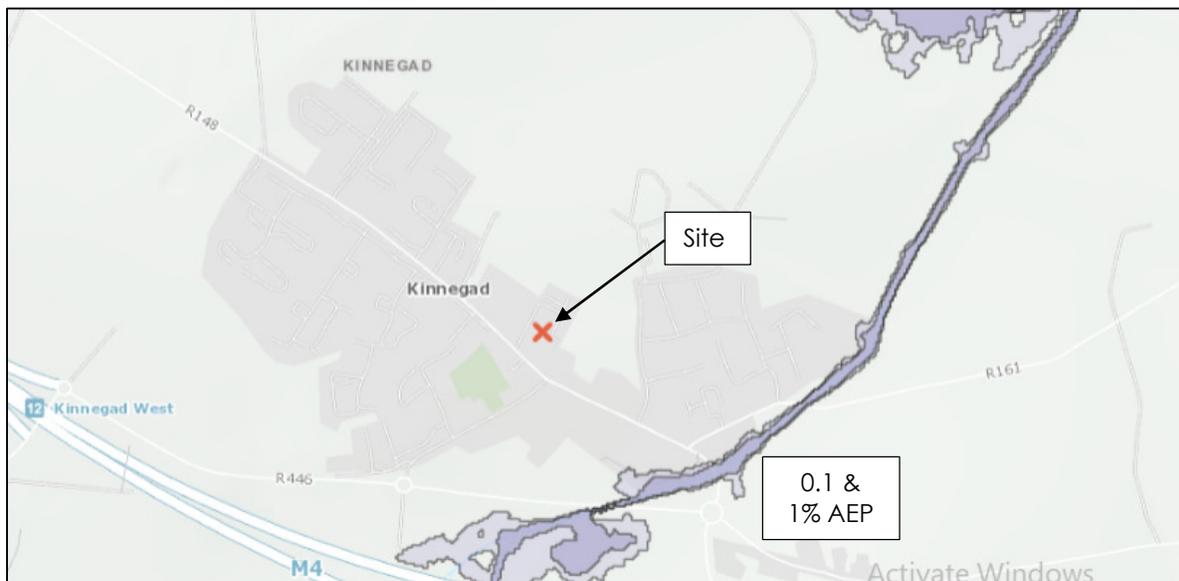


Fig 3.3 Extract of online CFRAM mapping showing extents of Fluvial flooding

#### FLOOD RISK ASSESSMENT REPORT

Project: Kinnegad Economic Enterprise Hub, Kinnegad, Co. Westmeath  
Job No: 99-06  
Revision:

By: COB

Date: 04.03.2024

6

### 3.3.3 PLUVIAL

Pluvial or surface water flooding is the result of rainfall-generated flows that arise before run-off can enter a watercourse or sewer. A number of sources have been researched as part of the OPW PFRA flood mapping and review of floodmap.ie.

The OPW mapping does not extend to show pluvial events for this location, however for good practice, pluvial flooding will be considered further and mitigation measures proposed.

### 3.3.4 GROUND WATER.

The OPW PFRA was reviewed and did not indicate groundwater flooding at the site or surrounding area. The GSI groundwater vulnerability for the site is classified as moderate. Furthermore, there are no karst features in the area which would indicate areas at risk of groundwater flooding. In summary, there is no known risk of groundwater flooding in this area and this has been screened out at this stage.

## 4 FLOOD RISK IMPACT ASSESSMENT, RECEPTORS & MITIGATION.

Review of the available sources of flooding outlined above confirms that there are no identified historic flooding events within or in close proximity to the site.

The site is located within Flood Zone C.

### 4.1 FLOOD RISK & MITIGATING MEASURES.

A.

Source	Surcharge backup from public sewers.
Receptor	Ground floor of the EEH
Likelihood	Low. No historic event of this nature recorded in relatively close proximity
Mitigation	Provision of storm water attenuation and rainwater harvesting tank will reduce storm discharge from the site. Maintain existing floor levels, which currently provide natural watershed away from the building southwards. Retain entrance to the building with sufficient threshold to ensure natural watershed away from the access point in the unlikely event of pluvial flooding.

### 4.2 IMPACT ON ADJOINING PROPERTIES.

The provision of the site-specific drainage system, inclusive of rainwater harvesting tank, surface water attenuation and limited discharge ensure no surface water from within the site will impact on adjoining properties.

The site is outside the predicted flooding areas based on the CFRAM maps. Therefore, there can be no displacement effect.

## 5 CONCLUSION

- No OPW records of flooding in the immediate vicinity of the site.
- The proposed development is located outside the predicted CFRAM flooding zone.
- The topography to the south of EEH has moderate fall (watershed) toward the Mullingar Road and beyond.
- There are no foreseen effects on the adjoining neighbouring sites
- Proposed development is a redevelopment of an existing site. Proposed levels consistent with the existing.
- Proposed SUDS to include rainwater harvesting and attenuation, which will reduce existing SW discharge rate to the public sewers.

Given the findings above it is our opinion that the site and development pose negligible flood risk.

The assessment is a desk top study based on the best available data, this report provides, in our view, the best available assessment of the effect of flooding at the site. In using the DEHLG/OPW Guidelines it is determined that the development site is located within Flood Zone C.

### References

1. National Flood Hazard Mapping, [www.floodmaps.ie](http://www.floodmaps.ie), OPW.
2. Eastern CFRAM Study, Flood Maps, [www.floodinfo.ie/map/floodmaps/](http://www.floodinfo.ie/map/floodmaps/) OPW.
3. Greater Dublin Strategic Drainage Strategy; and
4. Greater Dublin Regional Code of Practice for Drainage Works.



---

**Ciaran O'Brien**

**BEng, CEng, MIEI, Eurlng, FConsEI**



## 6 APPENDIX A

## OPW FLUVIAL CFRAM STUDY MAPS

### FLOOD RISK ASSESSMENT REPORT

Project: Kinnegad Economic Enterprise Hub, Kinnegad, Co. Westmeath

Job No: 99-06

Revision:

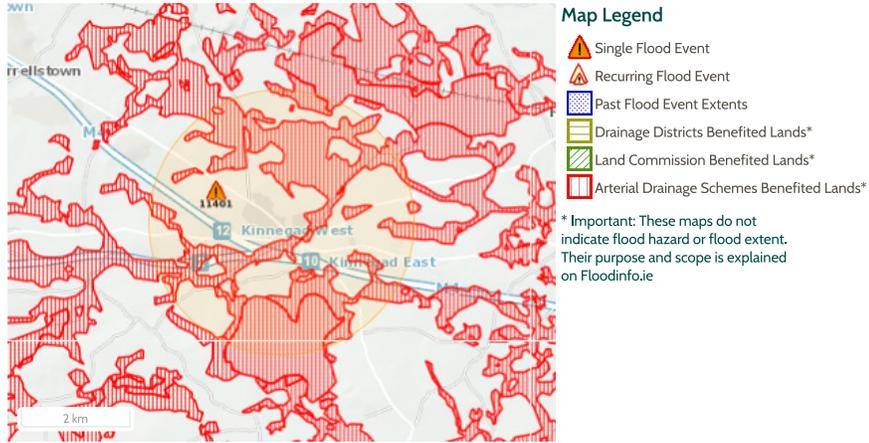
By: COB

Date: 04.03.2024

Report Produced: 4/3/2024 15:05

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

This report has been downloaded from [www.floodinfo.ie](http://www.floodinfo.ie) (the "Website"). The users should take account of the restrictions and limitations relating to the content and use of the Website that are explained in the Terms and Conditions. It is a condition of use of the Website that you agree to be bound by the disclaimer and other terms and conditions set out on the Website and to the privacy policy on the Website.



1 Results

Name (Flood_ID)	Start Date	Event Location
1.  Corkhill Kinnegad August 08, Nov 09 (ID-11401)	n/a	Approximate Point

Additional Information: [Reports \(1\)](#), [Press Archive \(0\)](#)