LONGFORD CO.CO.
Renovation & Redevelopment at Connolly Barracks, Abbeycartron, Longford town, Co. Longford
Flood Risk Assessment (FRA01)

June 2025

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DOCUMENT CONTROL SHEET

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Contents:

APPENDICES:

1.0 INTRODUCTION

1.1 Background

1.1.1 This site-specific Flood Risk Assessment report has been prepared by MPA Consulting Engineers on behalf of our client Longford County Council.

1.1.2 This report and application relate to a proposed stormwater discharge to the Camlin River for the roof area and hardstanding associated with the proposed extension and alterations at Connolly Barracks.

1.1.3 The purpose of this site specific Flood Risk Assessment (FRA) is to assess the potential flood risk to the proposed development and to assess the impact that the development and proposed stormwater discharge may or may not have on the hydrological regime of the area.

1.2 Site

1.2.1 The site is located at Church Street, Longford, Co. Longford. The overall site area of the campus development (redline boundary) is approximately 0.58 hectares with 0.218 hectares attributed to this application. This 0.218 hectares relates to the surface water catchment containing the roof and hardstanding areas around the existing building and proposed extension.

1.2.2 The site is located approximately 100m North of the Camlin River with the site topography falling from the proposed finished floor level of 49.26m AOD, to the site boundary 44.50m AOD, and in turn to the Camlin River, 40.28m AOD. The location plan can be seen in **Figure 1.1**.

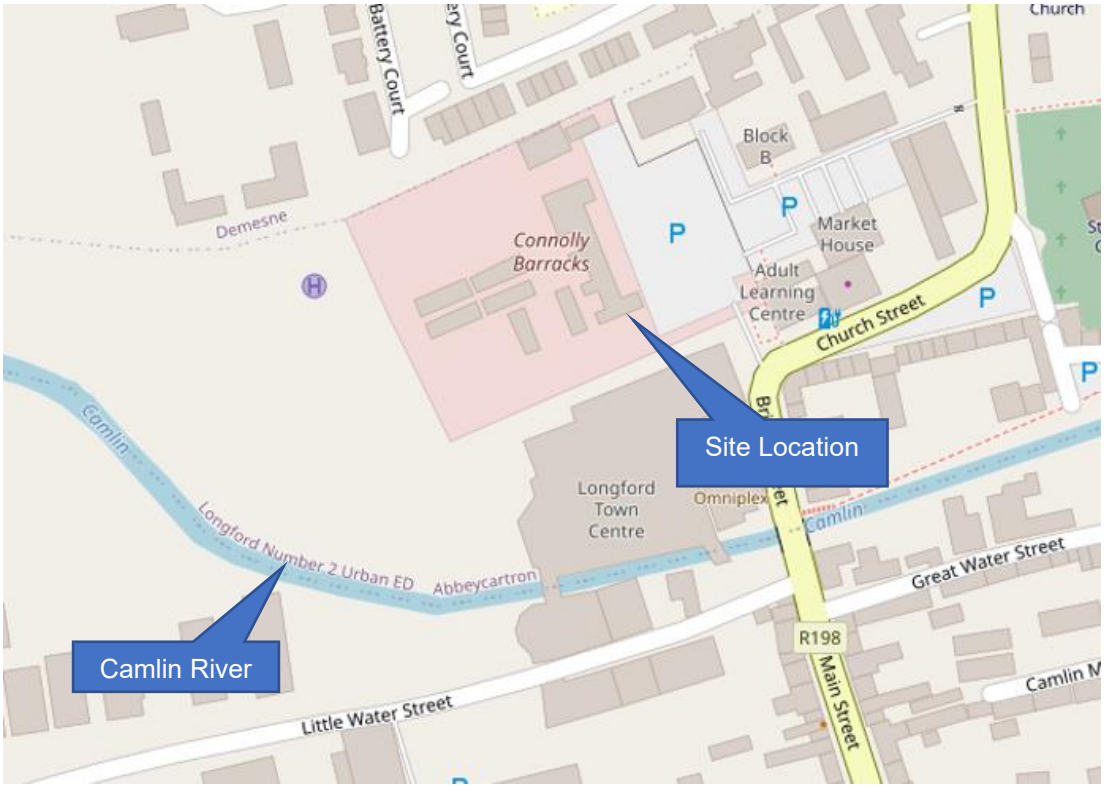


Figure 1.1 - Site Location Plan

1.2.3 The stormwater generated from the proposed development is to be attenuated with a restricted outflow and directed to a proposed new outfall to the Camlin River.

1.3 DOEHLG & OPW Guidelines

1.3.1 The DOEHLG & OPW Guidelines for Planning Authorities, guide planning authorities and developers in assessing flood risk and outline the key considerations to be addressed to ensure appropriate development. These guidelines form the basis of this Site-Specific Flood Risk Assessment.

1.3.2 The DEHLG/OPW Guidelines which recommend a staged approach with regard to a site-specific Flood Risk Assessment, carrying out only such appraisal and or assessment as is needed for the site-specific circumstances. These stages are as follows:

- Stage 1 – Flood Risk Identification
- Stage 2 – Initial Flood Risk Assessment
- Stage 3 – Detailed Flood Risk Assessment

1.3.3 The guidelines contain information in relation to the staged approach for flood risk assessment in relation to flood zones and Vulnerability as follows.

Flood Zones

1.3.4 Flood Zones are defined in the DOEHLG & OPW Guidelines as 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. There are three types or levels of flood zones and they are defined as Zone A, Zone B and Zone C.

1.3.5 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);

1.3.6 Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding)

1.3.7 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.

Vulnerability

1.3.8 The vulnerability of a development to flooding depends on the nature of the development, its occupation and the construction methods used. The classification of vulnerability of different land uses and types of development as highly vulnerable, less vulnerable and water-compatible

is influenced primarily by the ability to manage the safety of people in flood events and the long-term implications for recovery of the function and structure of buildings.

1.3.9 Table 1.1 details the development vulnerability classifications which are appropriate for a particular flood zone and which require a Justification Test.

Table 1.1
Matrix of Vulnerability versus Flood Zones

	Flood Zone A	Flood Zone B	Flood Zone C
Highly Vulnerable Development	Justification Test	Justification Test	Appropriate
Less Vulnerable Development	Justification Test	Appropriate	Appropriate
Water Compatible Development	Appropriate	Appropriate	Appropriate

1.3.10 The proposed river outfall is the subject of this assessment and is considered to be a Water-Compatible Development as per Table 3.1 of the DEHLG / OPW Guidelines for Planning Authorities - “The Planning Process and Flood Risk Management” (November 2009).

1.4 Methodology

1.4.1 This Site-Specific Flood Fisk Assessment report is generally based on the DEHLG / OPW Guidelines for Planning Authorities - “The Planning System and Flood Risk Management” (November 2009) which states the following.

1.4.2 A Stage 1 - Flood Risk Identification identifies if there any possible flood risks to the proposed development. The components to be considered in the identification and assessment of flood risk are as per Table A1 of the technical appendices to the above-mentioned guidelines, namely:

- Tidal
- Fluvial
- Pluvial/Surface Water
- Ground Water
- Human/Mechanical Error

1.4.3 A Stage 2 - Initial Flood Risk Assessment is then conducted for the proposed site. This Initial Flood Risk Assessment examines all the relevant data sources available to determine any indication of historical flooding in the vicinity of the site. In addition to this mapped data the anecdotal local knowledge of the site is considered.

1.4.4 Following the Stage 1 - Flood Risk Identification and Stage 2 - Initial Flood Risk Assessment in accordance with the DEHLG / OPW Guidelines. It may be determined that there is effectively no flood risk to the proposed site based on the information analysed and the report may conclude at this stage. However, if potential flood risks do exist, the report will continue through the remaining flood risk assessment as set out in the DEHLG / OPW Guidelines to a Stage 3 - Detailed Flood Risk Assessment.

1.4.5 A Stage 3 - Detailed Flood Risk Assessment includes details on the primary flood risks to the

proposed development. Each flood risk component is investigated from a Source, Pathway and Receptor point of view, followed by an assessment of the likelihood of a flood occurring and the possible consequences. Any residual flood risks must also be identified and addressed at this stage.

1.4.6 Following a Stage 3 Detailed Flood Risk Assessment a Flood Impact Assessment is carried out. This assessment focuses on any potential impacts to the hydrological regime of the area or any potential flood impacts to neighbouring lands or lands downstream of the proposed development.

1.4.7 Finally, where appropriate a Justification Test is carried out as set out in the set out by DEHLG / OPW Guidelines. A Justification Test determines if there is a specific planning need for the development and if an acceptable level of sustainable flood risk management has been adopted.

2.0 STAGE 1 - FLOOD RISK IDENTIFACTION

2.1 Scoping

2.1.1 The purpose of the Stage 1 - Flood Risk Identification is to identify and scope possible flood risks and to implement the necessary level of detail and assessment to evaluate any possible risks and to ensure that these risks are adequately addressed in this report.

2.1.2 This scoping exercise should also identify that sufficient quantitative information is available to complete the flood risk assessment to an appropriate level based on the scale and nature of the development.

2.1.3 **Table 2.1** summaries the possible flooding mechanisms considered to be a risk to the proposed development:

Table 2.1
Flood Risk Identification

Source	Risk	Comment/Reason
Tidal	No	The site is circa. 97kM from the coast and not located within the Tidal zone
Fluvial	Possible	The site is located 100m to the East of the Camlin River which has a history of flooding.
Pluvial (Urban Drainage)	Possible	The proposed drainage network - possible blockage or failure of proposed drainage system.
Pluvial (Overland Flows)	No	The site is elevated above adjacent agricultural lands to the West. The local topography at approx. +44.33 m AOD at the boundary and represents a high point which falls away from the site to a low point of +41.26m AOD at the Camlin River. Therefore, flooding from overland flows not considered likely.
Ground Water	No	Following an assessment of the available GSI data, there are no significant springs or groundwater discharges mapped in the immediate vicinity of Connolly Barracks. The proposed site is located within an area of High (H) groundwater vulnerability which suggests groundwater is >3m below ground level. Following the completion of a Site investigation, one trial hole excavation extending to 3.0m below existing ground level uncovered ground water at 2.5m below ground level. The other trial hole encountered no groundwater. Therefore, groundwater flooding is not considered likely at the site.
Human/ Mech. Error	No	There are no existing mechanical drainage devices and there are none proposed as part of this development.

2.2 Outcome

The Flood Risk Identification process has been carried out for the proposed site and is detailed in **Table 2.1** above. This identification and scoping stage indicates that the proposed site and receiving water is subject to possible Fluvial and Pluvial flooding due to urban drainage and overland flows.

3.0 STAGE 2 – INITIAL FLOOD RISK ASSESSMENT

3.1 General

3.1.1 The Stage 2 - Initial Flood Risk Assessment examines all the relevant data sources available to determine any indication of historical flooding in the vicinity of the site. This initial assessment reviews published data from the Ordnance Survey Ireland (OSI) and the Office of Public Works (OPW).

3.1.2 In addition to this mapped data, the Stage 1 Flood Risk Identification for Longford, contained within Longford County Council Development Plan and Strategic Flood Risk Assessment was consulted and anecdotal local knowledge of the site is also considered.

3.2 Mapped Data

Historical Mapped Data

3.2.1 The OS 6-inch maps include details of lands marked as being *"Liable to Floods*". It is noted that the OS maps simply show the text "*Liable to Floods*" without delineating the extent of these areas, the frequency of flooding or the type of flooding.

3.2.2 After assessment of the Historical 6" and 25" mapping (see below) it can be seen that there is no record of areas *"Liable to Floods"*.

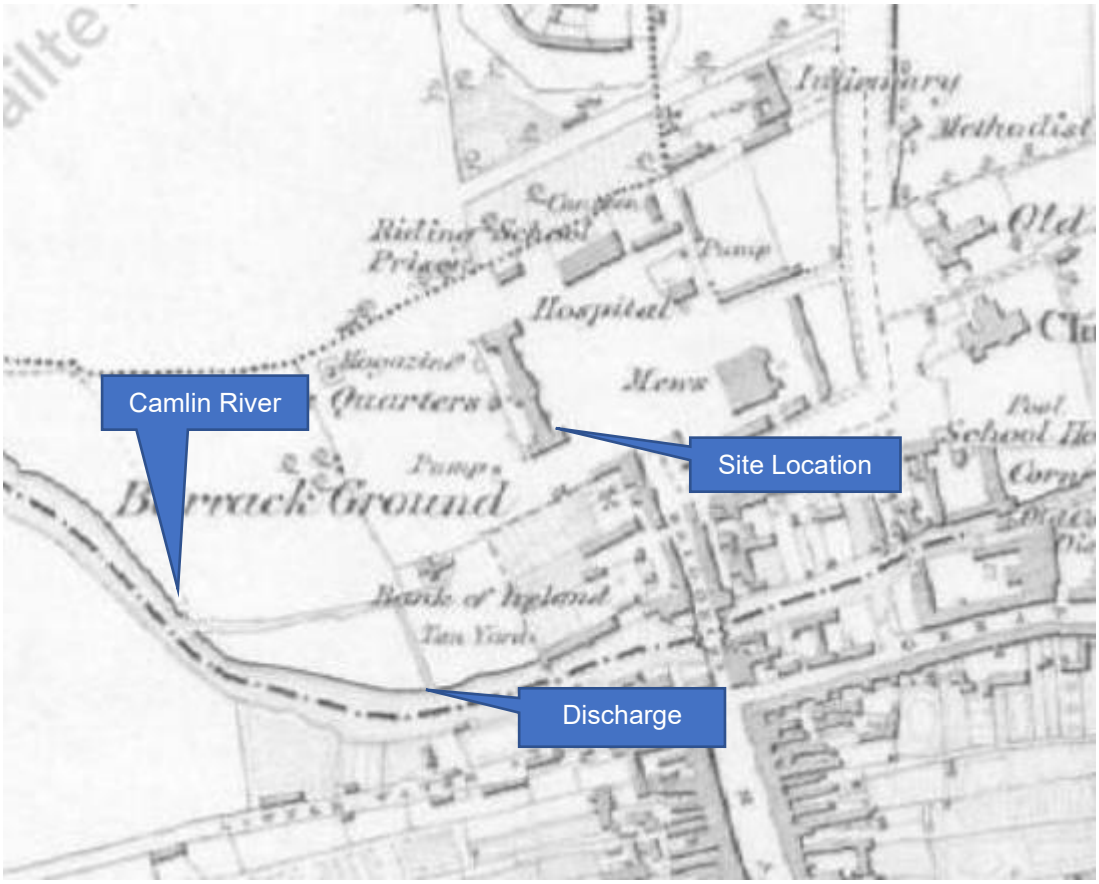


Figure 3.1 - Historic 6" Map

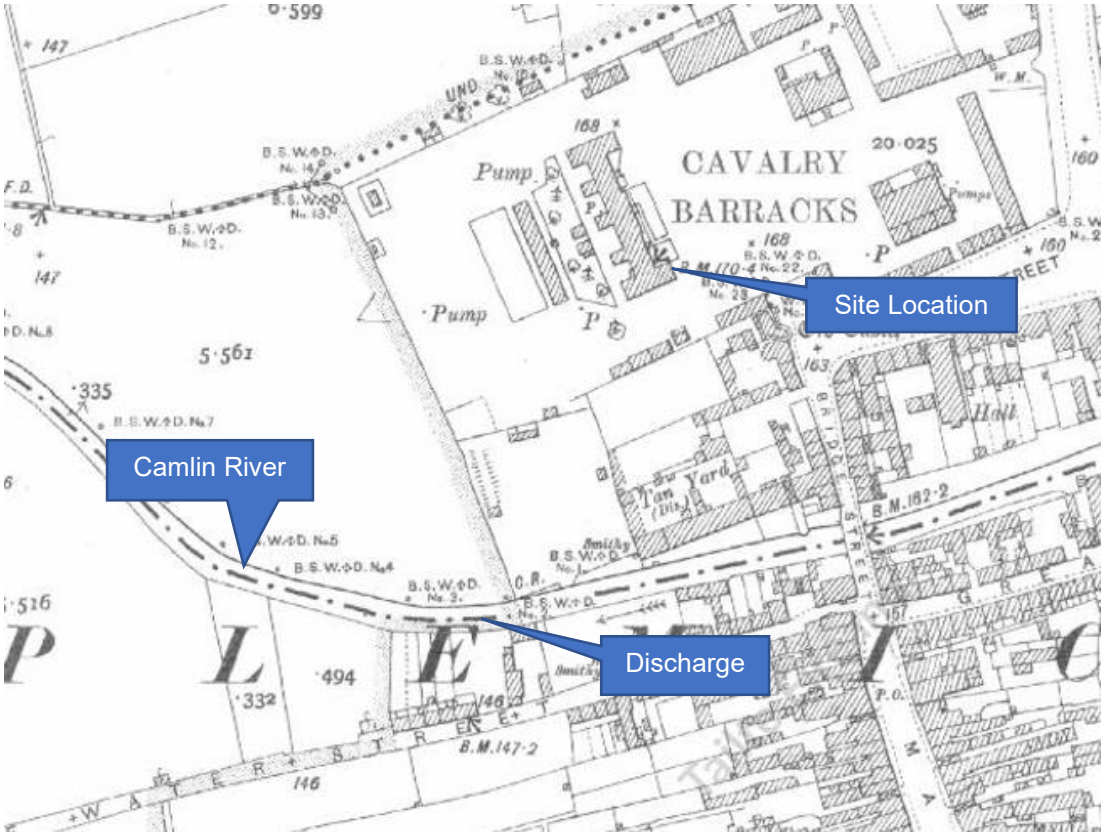


Figure 3.2 - Historic 25" map

OPW Drainage District mapping

3.2.3 The OPW drainage district maps represent a dataset prepared on behalf of the Drainage Districts (under the Arterial Drainage Act, 1925). These maps identify land that might benefit from the implementation of Arterial (Major) Drainage Schemes and may indicate areas of land subject to flooding or poor drainage.

3.2.4 Following a review, there is mapped data indicated within the vicinity of the Longford area and therefore the area is within an area designated for a Drainage District Scheme as identified by the OPW. However, the site is not contained within an area designated for a Drainage District.

OPW Benefiting Lands mapping

3.2.5 The OPW benefiting lands map represents a dataset identifying land that might benefit from the implementation of Arterial Drainage Schemes (under the Arterial Drainage Act 1945) and indicating areas of land that may be subject to flooding or poor drainage.

3.2.6 Following a review, there is no mapped data indicated within the vicinity of the Longford area and therefore the area is not within an area designated as "benefiting" from an Arterial drainage Scheme as identified by the OPW.

Figure 3.3 - OPW Drainage District & Benefiting Lands Mapping

OPW Flood Hazard Mapping

3.2.7 As part of the National Flood Risk Management Policy, the OPW developed a web-based data set, which contains information concerning historical flood data and displays related mapped information. The Flood Hazard Maps for Longford area indicate two past flood events, neither of which are in the area of the proposed works. See extract below.

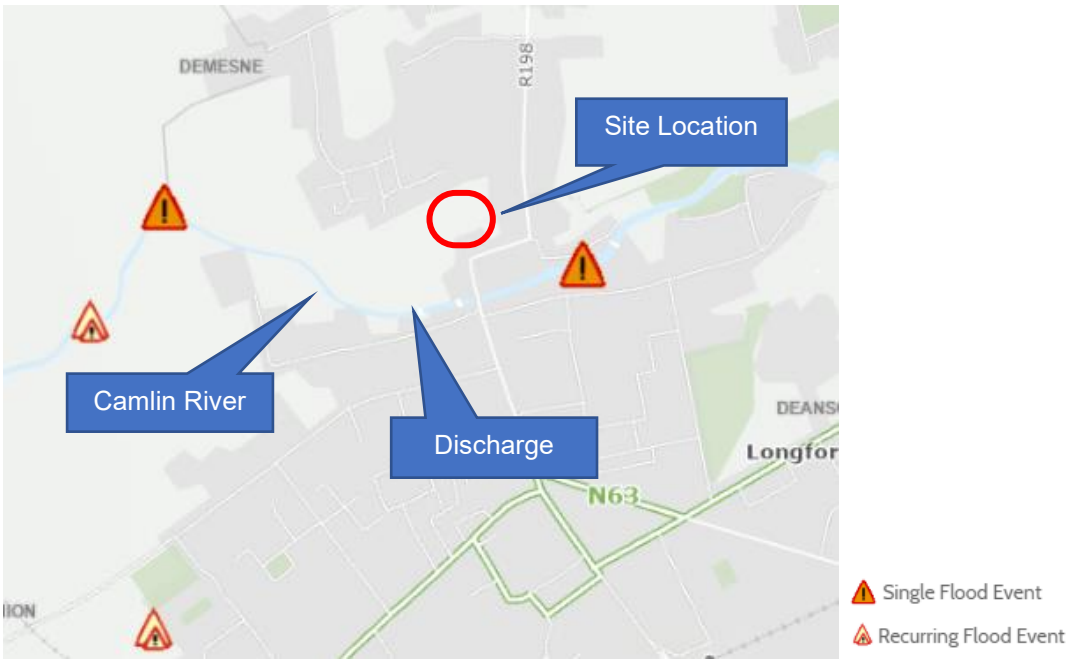
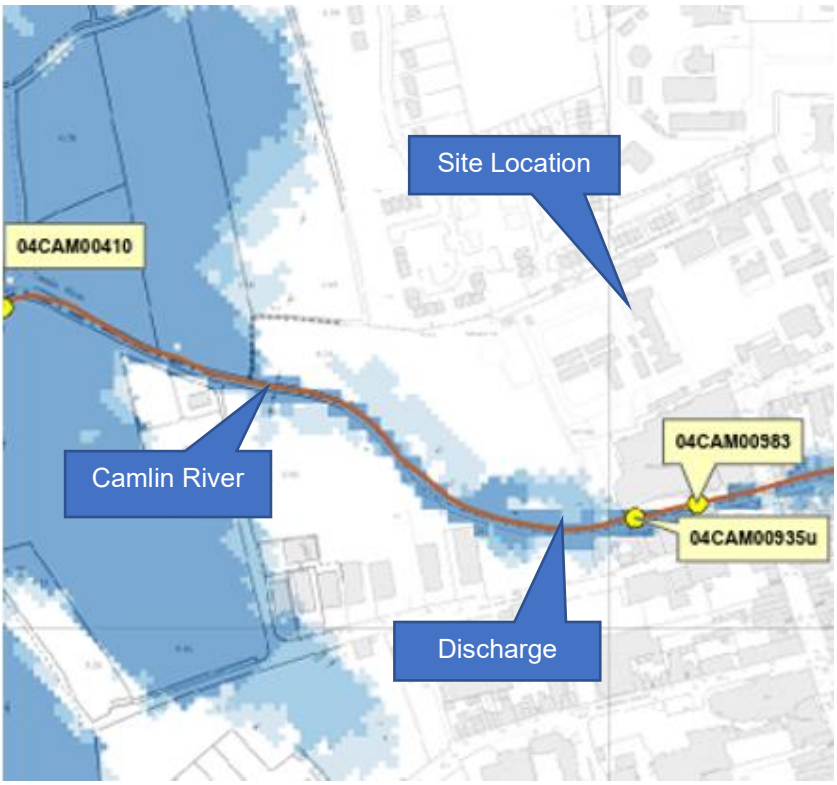


Figure 3.3 - Past Flood Events

CFRAM Mapping

3.2.8 Catchment Flood Risk Assessment and Management (CFRAM) Studies carried out by the OPW are at the core of the national policy for flood risk management and the strategy for its implementation. Part of the CFRAM Studies is to assess flood risk, through the identification of flood hazard areas and the associated impacts of flooding.



Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m^3/s)	Water Level (mAOD)	Total Flow (m^3/s)	Water Level (mAOD)	Total Flow (m^3/s)
04CAM00983	41.87		42.05		42.29	
04CAM00935u	41.81		41.94		42.17	
04CAM00410	41.48		41.61		41.72	
04CAM00000	41.46		41.59		41.71	

Figure 3.4 - CFRAM Map

3.2.9 A review of the flood mapping for the River Camlin CFRAM Study as issued November 2016, Map No. S2526LODd_EXFCD_F1_05, illustrates the predictive extreme fluvial flood extent zones associated with the River Camlin in the vicinity of the proposed development site. **Figure 3.4** above confirms the proposed site is located outside the flood extents of the 1:1000 year Fluvial Event.

3.2.10 **Figure 3.4** shows the 1:100 flood event, 1% AEP, the estimated fluvial flood level is 41.94 m OD. The lowest ground on site is 49.26 AOD which results in a minimum freeboard from the 1% AEP flood events of in excess of 7.3m. The complete CFRAM mapping can be seen in **Appendix A**.

3.2.11 The CFRAM flood maps are predictive flood maps, in that they provide predicted flood extent and other information for a 'design' flood event that has an estimated probability of occurrence (e.g. the 1% AEP event), rather than information for floods that have occurred in the past. Please refer to **Appendix A**, for a full copy of the CFRAM flood extent and depth maps.

3.3 Fluvial Flooding

3.3.1 Flood risk from a particular watercourse is normally assessed for a 1 in 100 year flood event, in accordance with most county development plans and in accordance with the DOEHLG guidelines 'The Planning System and Flood Risk Management Guidelines'. The following sections present an analysis and assessment of the estimated 1 in 100-year flood levels and impact on the River Camlin.

Impact of the Proposed Outfall

3.3.2 The proposed site and surrounding lands currently form part of the Camlin catchment with existing overland flows from agricultural lands to the receiving waters. The proposed point discharge to the Camlin River is to be limited to QBAR for the site as set out within Storm Water System Design Technical Note (TN01) enclosed with this submission. This confirms that the new point discharge is restricted to the Greenfield run off rate for the catchment thereby not adversely impacting the receiving waters.

3.3.3 Nonetheless the impact of the point discharge is considered as follows. QBAR for the site has been established to be 1.4l/sec to be discharged to the Camlin River via a proposed new point discharge.

3.3.4 As the maximum outfall from the proposed discharge point is limited to 1.4 l/sec (or 0.0014 m^3/sec) the impact of the point discharge onto the receiving water is estimated to be negligible.

3.3.5 As noted within the preceding, the proposed outfall is restricted to Greenfield run off rate and the level of impact of 0.0014 m^3/sec is imperceptible for the likely flow volumes for the 10% AEP, 1% AEP and 0.1% AEP flood events.

3.4 Pluvial Flooding - Urban Drainage Infrastructure

3.4.1 Secondary and residual flood risk can be attributed to a potential surcharge/failure of the urban drainage network in the general vicinity of the proposed development site. As the report pertains to the proposed new attenuation storage and discharge to the Camlin River, this route need only be considered here.

3.4.2 It is anticipated that any potential pluvial flooding due to a surcharge/failure of the proposed drainage infrastructure would likely develop at one off two locations. (1) at the discharge point which is isolated from the site and other developments and (2) upstream of the Hydrobrake within the site.

3.4.3 Surcharging or failure due to blockage at the proposed discharge point would likely cause surcharged waters to spill out onto agricultural lands immediately adjacent to the discharge point at the Camlin River. As the existing site topography and contours fall is an East to West direction at this location the overland flow would be directed to the Camlin River which is acceptable.

3.4.4 Further to the preceding it is acknowledged that the proposed point discharge is located in a plain which is likely to flood. Despite this the head achieved at the outfall, 4.14m, will ensure continued flow despite a flood event at the discharge point.

3.4.5 Any overloading or surcharging of the drainage system within the site will occur upstream of the Hydrobrake. As the site falls from East to West, short term localised ponding will develop in extreme rainfall events in the hardstanding areas within the site and will flow to agricultural lands adjacent to the site, which is deemed acceptable.

3.4.6 Therefore based on the preceding, surface water that may spill out due to surcharging is unlikely to pose a significant flood risk to the existing site or adjoining lands. Overall the secondary and residual flood risk to the proposed development site and adjoining lands is considered to be low.

3.1 Pluvial Flooding – Overland Flows

3.1.1 Secondary flood risk can be attributed to a potential overland flow in the general vicinity of the site from the adjoining elevated agricultural lands.

3.1.2 The existing topography for the site and the adjoining agricultural lands falls in a Northeast to Southwest direction with an existing low point located outside the site on the river bank and according to local knowledge localised ponding is evident during winter months during prolonged periods of rainfall.

3.1.3 It is anticipated that any potential pluvial flooding due to overland flows, based on site topography, will develop at the site boundary set between the agricultural lands to the West and Camlin River to the south. It is expected that ponding will be short term and localised during extreme rainfall events.

3.1.4 Therefore, based on the preceding, surface water ponding that may develop due to overland flows is unlikely to pose a significant flood risk to the site or adjoining lands. Overall the residual flood risk to the proposed development site and adjoining lands is considered to be low.

3.2 Outcome

3.2.1 After an assessment of the Historical 6” and 25” mapping it can be seen that there is no record of areas *“Liable to Floods”* in the vicinity of the site or proposed discharge point.

3.2.2 There is mapped data for the Longford area, and therefore the area contains areaa designated as a “drainage district” or “benefiting land” from an Arterial drainage Scheme as identified by

the OPW. however, the site is not contained in within an area designated as a “drainage district” or “benefiting land”.

3.2.3 All recent flood events have occurred away from the site and have not impacted on the subject site however local knowledge confirms that the proposed discharge point to the Camlin River is located within an area subject to flooding.

3.2.4 It has been demonstrated from review of the CFRAM Fluvial flooding Extents map that the proposed site is located within Zone C and is not subject to fluvial flooding. The proposed outfall is to be located within Zone A however is considered to be a water-compatible development.

3.2.5 The existing site and surrounding lands currently form part of the Camlin River catchment with overland flows from agricultural lands to the receiving waters and the impact of the proposed point discharge to the Camlin River fluvial flooding level has also been assessed based on a Qbar of 1.4 l/sec and found that the impact related to the outflow is considered to have a negligible impact on the receiving waters.

3.2.6 The existing site topography ensures that Pluvial Flooding - Urban Drainage Infrastructure – due to surcharging/ failure of the drainage system will not adversely impact the proposed development, discharge or the adjoining lands.

3.2.7 Pluvial Flooding due to overland flows from the adjoining agricultural lands has also been assessed. Based on existing site topography, existing overland flow paths are directed towards a low point adjacent the site, and towards the River Camlin.

3.2.8 The Stage 1 - Flood Risk Identification determined that the site could be potentially at risk of fluvial & pluvial flooding and the corresponding Stage 2 - Initial Flood Risk Assessment examined the historical mapped data available from the OSI, OPW, Longford County Development Plan and SFRA of the proposed site.

3.2.9 The Stage 2 - Flood Risk Assessment, it is apparent that the site and receiving waters do not have any issues with regard to fluvial and pluvial flooding and is suitable for the proposed storm sewer discharge from the proposed development.

3.2.10 Following the Stage 2 assessment it is clear that a Stage 3 Detailed Flood Risk Assessment is not required.

4.0 SUMMARY AND CONCLUSION

4.1 Summary

4.1.1 This site-specific Flood Risk Assessment and application relates to a proposed new discharge to the Camlin River from the proposed development.

4.1.2 The site is located at Church Street, Longford, Co. Longford. The overall site area of the campus development is approximately 0.58 hectares with 0.218 hectares attributed to this application.

4.1.3 The site is located approximately 100m north of the Camlin River with the site topography falling from the proposed finished floor level to the site boundary, and in turn to the Camlin River.

4.1.4 The development has been analysed for risks of flooding in accordance with the recommendations of the DEHLG / OPW Guidelines for Planning Authorities - “The Planning Process and Flood Risk Management”.

4.1.5 The Stage 1 - Flood Risk Identification stage indicated that the proposed development site is potentially at risk from fluvial and pluvial flooding.

4.1.6 A Stage 2 - Initial Flood Risk Assessment review suggests that there has been no historical flooding at the site however flooding has been noted at the proposed discharge point to the Clashawley River. The available sources referenced include:

i. OSI Historical mapping (6” & 25” OS maps)
ii. OPW Flood Events Mapping
iii. OPW Drainage District Mapping
iv. OPW Benefitting Lands Mapping
v. CFRAM Fluvial Mapping

4.1.7 OPW Pluvial Mapping It has been found from the CFRAM maps that the site is not subject to pluvial (urban drainage and overland flows) or fluvial flooding and is generally Zone C site with the proposed discharge point to the Camlin River located within Zone A and is considered to be a water-compatible development.

4.1.8 The impact of the proposed new discharge to the Camlin River has also been assessed based on Qbar of 1.4 l/sec and found that the impact related to the outflow is considered to have a negligible impact on the receiving waters.

4.2 Conclusions

4.2.1 In conclusion the playing pitches and proposed outfall to the Camlin River are found to be a water compatible development as per Table 3.1 of the DEHLG / OPW Guidelines for Planning Authorities - “The Planning Process and Flood Risk Management” (November 2009).

4.2.2 The proposed site is located in Zone C area and is therefore not subject to flood risk The proposed outfall from the site to the Camlin River is found to be located within Zone A however the outfall is a water compatible development.

4.2.3 It is clear from both the Stage 1 - Flood Risk Identification and the Stage 2 - Initial Flood Risk Assessment that the site is Zone C and is not at risk of flooding. The proposed discharge point is considered to be water-computable and located within Zone A and therefore is no requirement to carry out any Stage 3 Detailed Flood Risk Assessments.

APPENDIX A

OPW Fluvial Flood Maps

Node Label	10% AEP		1% AEP		0.1% AEP	
	Water Level (mAOD)	Total Flow (m^3/s)	Water Level (mAOD)	Total Flow (m^3/s)	Water Level (mAOD)	Total Flow (m^3/s)
04CAM00983	41.87		42.05		42.29	
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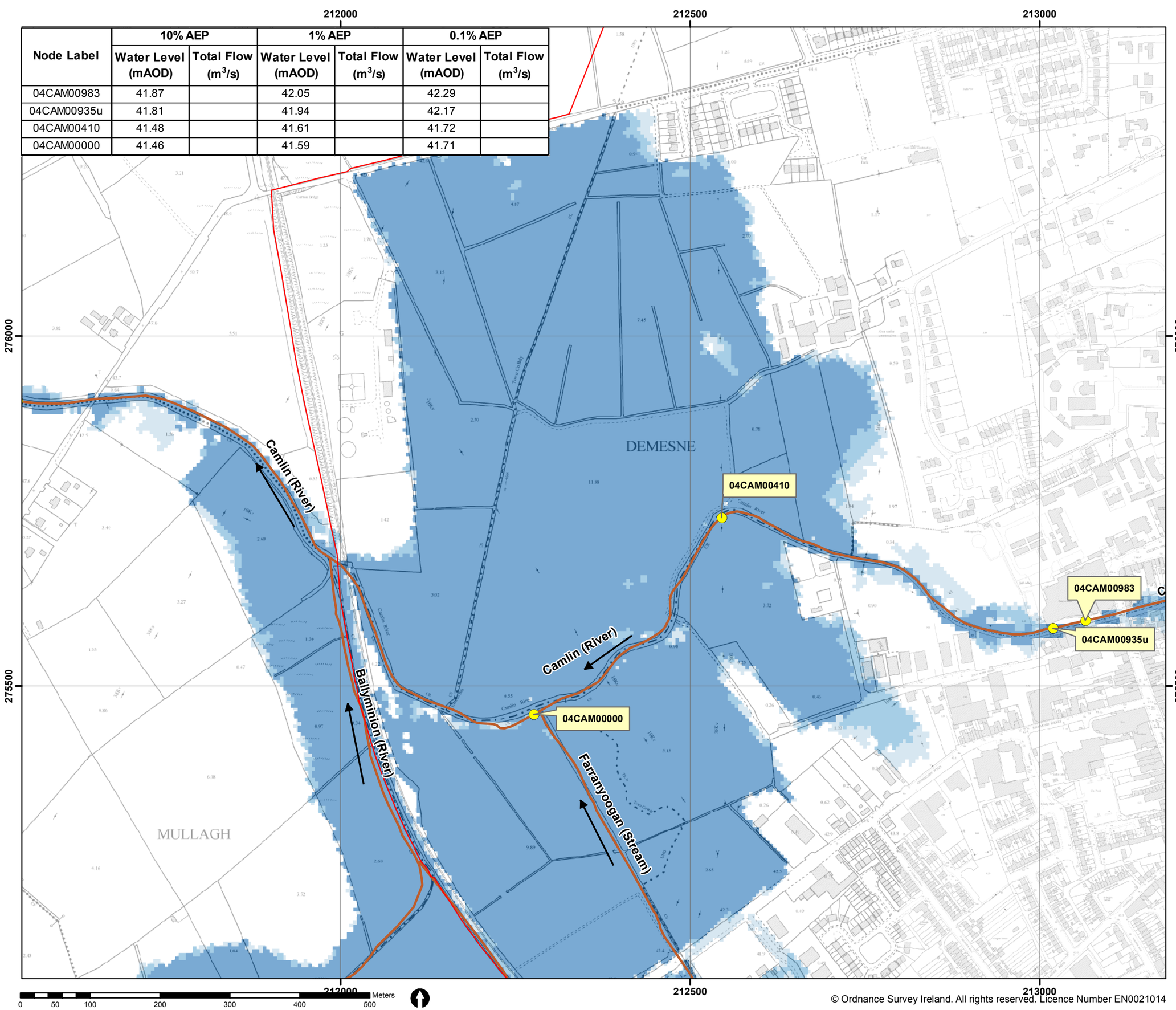
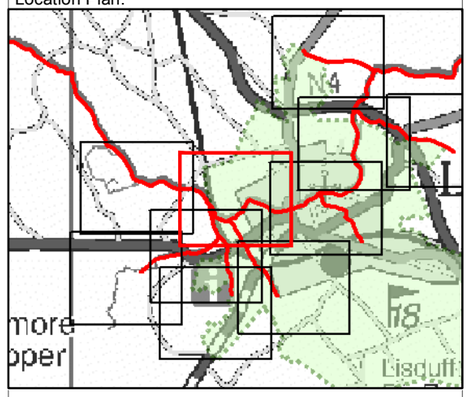
04CAM00000	41.46		41.59		41.71	



Location Plan:



Legend:

- Nodes
- Model Reach
- AFA Boundary
- Flood Defence: Wall
- Flood Defence: Embankment

10% AEP Fluvial Flood Extent
(1 in 10 chance in any given year)

1% AEP Fluvial Flood Extent
(1 in 100 chance in any given year)

0.1% AEP Fluvial Flood Extent
(1 in 1000 chance in any given year)

IMPORTANT USER NOTE:
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.

The Office of Public Works
Jonathan Swift Street
Trim
Co. Meath
C15 NX36

Merrion House
Merrion Road
Dublin 4
D04 R2C5

Project:		SHANNON CFRAM STUDY
Map Type:		EXTENT
Source:		FLUVIAL
Area:		LONGFORD
Scenario:		EXISTING
Drawn by:	AC	Date: NOVEMBER 2016
Checked by:	PT	Date: NOVEMBER 2016
Reviewed by:	MC	Date: NOVEMBER 2016
Approved by:	PS	Date: NOVEMBER 2016
Map Number:		S2526LOD_EXFCD_F1_05
Sheet: 5 of 12		Revision: 0
Map Scale: 1:5000		Plot Scale: 1:1 @ A3