

3.0 Flood Risk Identification

The Limerick City Development Plan 2010 – 2016 has identified the Coonagh Cross Shopping Centre as being in a Flood Zone A area. This is the highest flood zone category available and identifies the area as being at high risk.



Fig 1: Limerick City Development Plan 2010 – 2016 – Flood Risk Areas

In order to establish the cause of the flooding risk reference has been made to the Shannon Catchment Flood Risk Assessment and Management Study (CFRAMS). It is noted that the Shannon CFRAMS is still at Draft status and as such the information provided in these documents is informative only.

The Coonagh Cross area is identified on various Shannon CFRAMS maps namely N16 Extract Map 38 and 42 and these maps identify both Coastal and Fluvial Flooding risks.

Map 38 identifies that the Coonagh Cross site is located within a defended area. The defended area is not defended against all storm events and in this particular case appears to rely upon a combination of the flood embankments to the Crompaun River and the embankments created around the site circulation roads.

Map 38 identifies predicted coastal flood levels at a node along the Crompaun River in close proximity to the Coonagh Cross site. These levels are:

10% AEP	0.5% AEP	0.1% AEP
Water Level (mAOD)	Water Level (mAOD)	Water Level (mAOD)
3.97	4.65	4.96

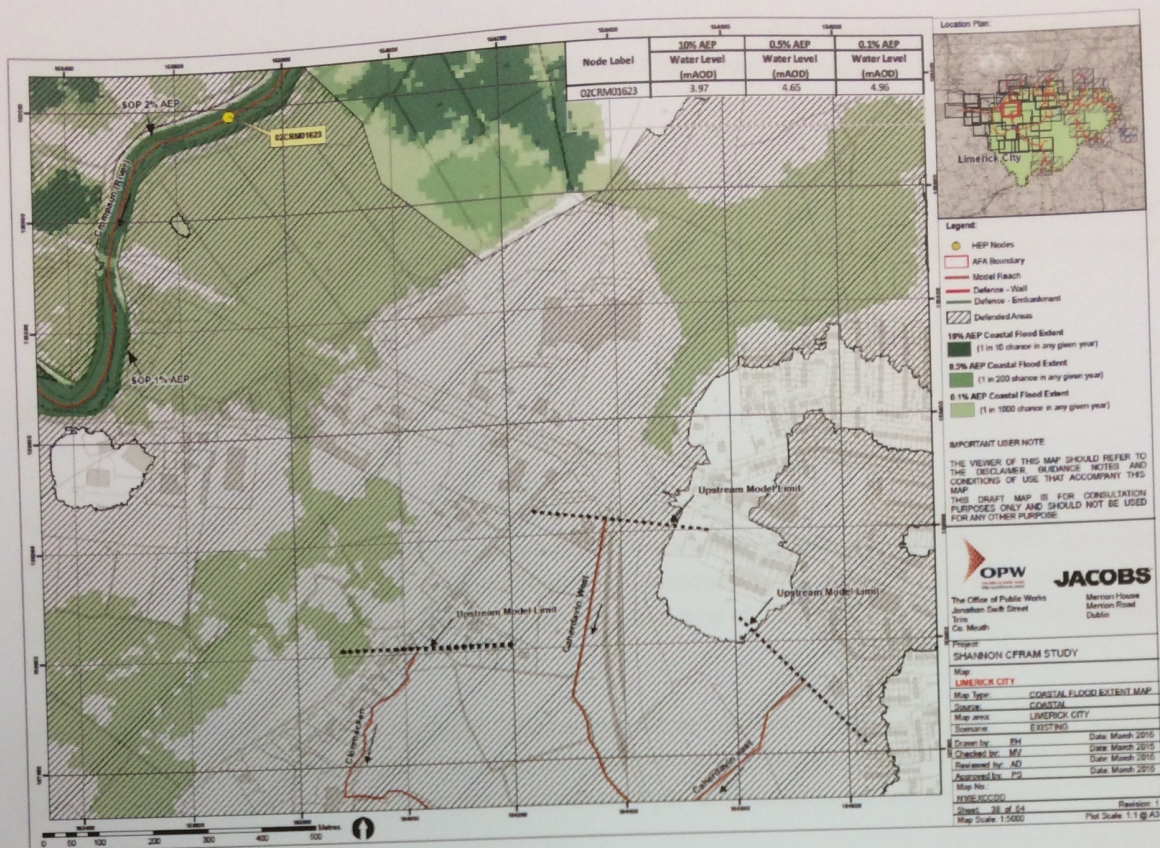


Fig 2: Shannon CFRAMS - Coastal Flooding

Map 38 identifies fluvial flooding to be restricted by the site circulatory roads.



Fig 3: Shannon CFRAMS - Fluvial Flooding

Historical flooding incidents are recorded on the OPW Floodmaps.ie web portal. Investigation of this portal has identified that there have been no reported flooding incidents in the Coonagh Cross area. The highest recorded flood in Limerick city was recorded at 4.35m AOD located at St John's on 14/2/14.

Consequently, it has been established that the Coonagh Cross site is not at risk of Fluvial Flooding but it is at flood risk from Coastal Flooding which breaches the flood embankments to the Crompaun River in close proximity to the Coonagh Cross site. The estimated flood level of 4.96m AOD will be considered with regard to mitigation measures for the proposed LIT usage of the site.

4.0 Mitigation Measures

As the site development is currently established it is not possible to adjust finished floor levels or surrounding car park hard standing levels to offer flood protection to the levels noted on the Shannon CFRAMS. In addition OPW have estimated that sea levels will rise by circa 500mm over the next 100 years. Consequently, it has been agreed with Limerick City and County Council that flood protection measures should be established to a level of 5.500m AOD which is 1m above existing floor levels.

In order to protect building openings removable flood barriers will be installed at all door openings. These barriers will be min of 1m in height and will be a demountable slot in barrier type. Permanent fixings will be installed where possible onto the building fabric with ground sockets installed wherever necessary to facilitate larger barrier installations.

In addition to flood barrier protection the existing sewerage infrastructure will also require protection against potential flood inundation and prevent potential surcharge within the building. To provide such protection Non Return Valves will be fitted to the external sewerage network at strategic locations.

The entire existing storm sewer networks has been CCTV'ed to establish connection locations and a similar investigation will be carried out on the foul network in due course.

With regard to flood mitigation within the building fabric should a flood occur it is proposed that sensitive infrastructure such as comms rooms and servers will be located on the first floor rather than being placed at ground floor levels. Furthermore, should any hazardous substances be stored on site e.g. oil, fuels, etc, these will be stored within a bunded structure which will be fitted with secondary flood barriers to enhance mitigation against pollution. Details of this structure will be agreed with the planning department prior to commencement of any works.

