



Comhairle Chontae Liatroma  
Leitrim County Council



OPW  
Oifig na  
nOibreacha Poiblí  
Office of Public Works

# LEITRIM VILLAGE, CO LEITRIM FLOOD DEFENCE BERM

PROJECT ID – 2551

## FLOOD RISK REPORT

**MARCH 2024**

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<b>CLIENT</b>	Leitrim County Council (LCC)
<b>PROJECT NO.</b>	2551
<b>PROJECT TITLE</b>	Leitrim Village, Co. Leitrim – Flood Defence Berm
<b>REPORT TITLE</b>	Flood Risk Screening Report

<b>VERSION</b>	<b>STATUS</b>	<b>AUTHOR</b>	<b>REVIEWED BY</b>	<b>APPROVED BY</b>	<b>ISSUE DATE</b>
1.0	Draft for Client Review	JR	BB	JR	March 2024
2.0	Final	JR	BB	JR	March 2024

## 1. INTRODUCTION

Ryan Hanley was commissioned by Leitrim County Council to prepare a Flood Risk Screening Report for the proposed flood defence berm in Leitrim Village, Co. Leitrim.

The purpose of this project is the construction a flood defence berm in the lands adjacent to the regional road R284 to protect the R284 and adjoining lands and approximately twelve residential properties from the threat of fluvial flooding from the nearby River Shannon.

The purpose of the report is to review potential changes in flood risk on properties in the vicinity of the proposed works, but in particular the Drumhierney Manor Housing Estate.

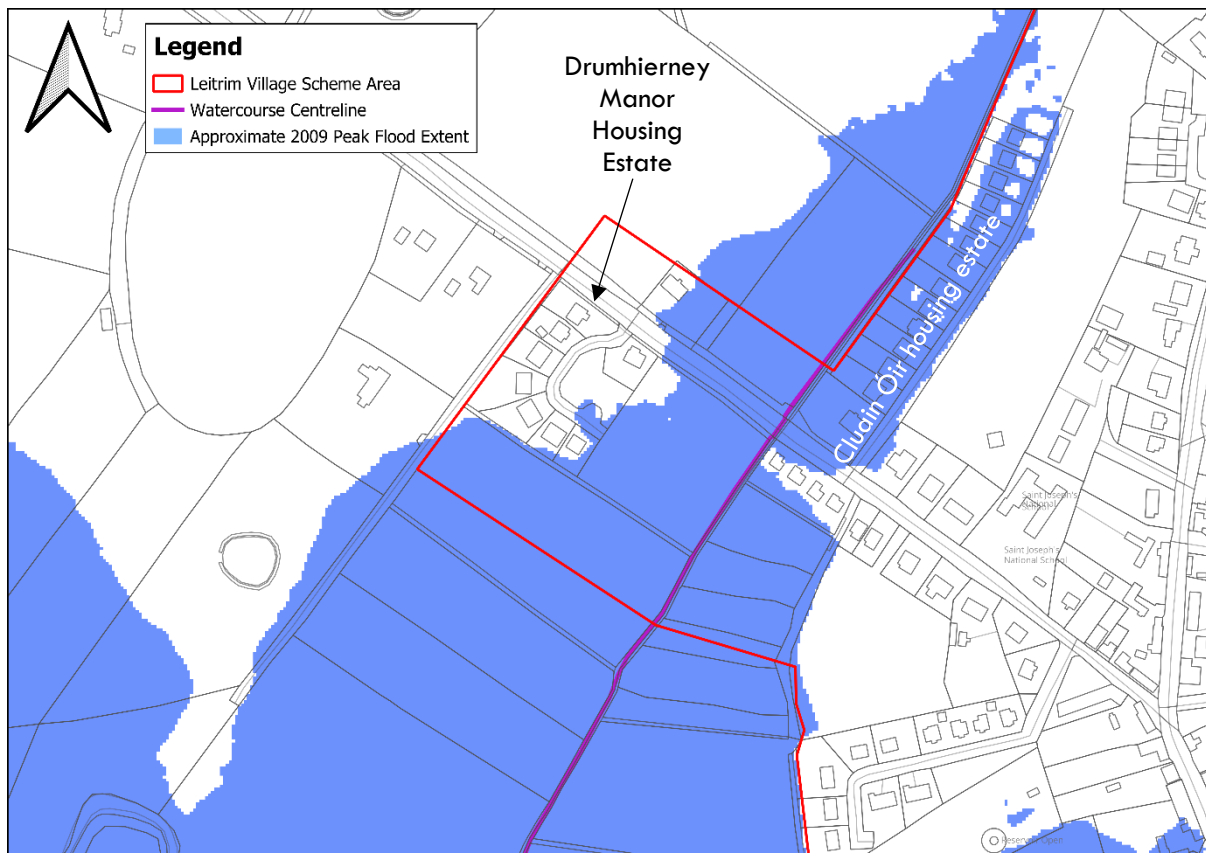
## 2. CURRENT FLOOD RISK

Notable flooding took place in Leitrim Village and environs during events in October 1954, November 1968, February 1990, December/January 1999/2000, February 2002, January 2005, December 2006, November 2009, December/January 2015 and February 2020. Historically, the worst flood event in the Upper River Shannon, including at Leitrim Village, occurred in November 2009.

Ryan Hanley Ltd. was appointed by Leitrim County Council (LCC) in January 2021 to undertake a Flood Relief Scheme (FRS) for Leitrim Village.

An area at the Keadue Road is at high flood risk and is among the first urban areas along the Upper Shannon to experience flooding. The area at flood risk includes the Cluain Óir housing estate. This area is connected to the River Shannon via a local drain.

The extent of the 2009 flood at Keadue Road is illustrated in Figure 1.1.



**Figure 1.1: Extent of 2009 flood at Keadue Road**

### 3. BRIEF DESCRIPTION OF PROPOSED DEVELOPMENT

Leitrim County Council is proposing to construct a temporary bund, which will act as a flood defence for the Keadue Road. The bund will remain in place until a permanent solution is implemented for flood risk in Leitrim Village and environs.

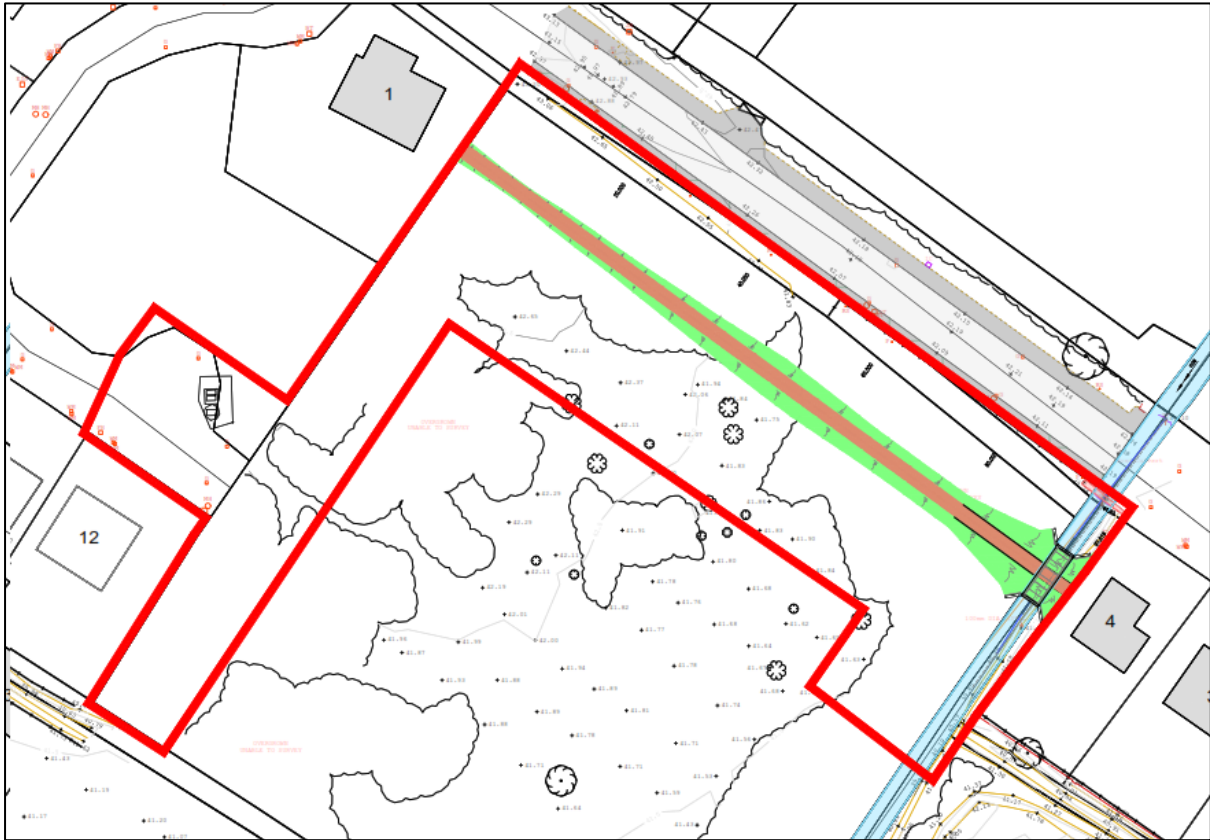
The bund will separate the urban area to the North from the floodplain of the River Shannon to the South. A culvert and non-return valve will be incorporated into the bund to ensure that the existing drain remains hydrologically connected to the River Shannon. During flood events, the non-return valve will close automatically and Leitrim County Council will deploy pumps to manage flows in the drain, and water levels and flood risk to the North of the bund.

The crest level of the proposed bund has been selected based on the peak flood level at this location from the 2009 flood event, the largest flood event on record in Leitrim Village. The permanent defence will be constructed at a different location and will be designed for the 1% AEP flood event, a more extreme flood event that has not occurred in living memory. The permanent defences are not included in this development.

A layout plan of the proposed development is provided in Figure 3.1 and 3.2 overleaf. A larger layout plan is provided in Appendix A.



Figure 3.1: Map of Works Location and Red Line Site Boundary



**Figure 3.2: Layout plan of proposed bund within Red Line Site Boundary**

#### 4. CHANGES TO FLOOD RISK ARISING FROM PROPOSED WORKS

The reduction in water levels within the Keadue Road drain floodplain resulting from the proposed development and deployment of pumps by Leitrim County Council during a flood event will not exacerbate flood risk in the Drumhierney Manor Housing Estate or elsewhere on the River Shannon.

- The reduction in flood levels will be achieved by Leitrim County Council through the construction of a temporary berm and deployment of pumps as described above.
- The reduction in flood level is intended to protect houses to the North of the bund, including those in Cluain Óir housing estate.
- The flood risk in the area is dominated by the River Shannon. During flood conditions, the Shannon enters a lake-like state, with very little difference in water levels over a stretch extending beyond Carrick on Shannon.
- The pump rate is very low in comparison to flood flows on the River Shannon. Similarly, the catchment of the Keadue Road drain is miniscule in comparison to that of the River Shannon upstream of Leitrim Village.
- Displacing a relatively small volume of water from the Keadue Road floodplain will result in an imperceptible change in water levels in the River Shannon at Leitrim Village and/or immediately downstream of the proposed bund.
- The proposed changes have been modelled by Ryan Hanley using the calibrated hydraulic model developed for Leitrim Village Flood Relief Scheme. The model results confirm that the change in water level in the flood plain immediately downstream of the berm would be less than 1mm.

Based on the above points, and the hydrological analysis and hydraulic modelling undertaken as part of the Leitrim Village FRS, it can be concluded that the proposed development will not result in an appreciable increase in flood risk elsewhere in the River Shannon catchment.

**Appendix A**  
**Layout Plan of Proposed Development**