



Kilkenny County Council

Comhairle Chontae Chill Chainnigh

Graiguenamanagh Tinnahinch Flood Relief Scheme

**Recommendation to invoke
Compulsory Purchase Order Procedures
for lands in Graiguenamanagh and Tinnahinch.**

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1.0 The Need for the Scheme

Significant flood events have occurred in Graiguenamanagh and Tinnahinch regularly. The Office of Public Works (OPW) commissioned the South Eastern CFRAM study to determine locations in Ireland which may be at risk of flooding. The original CFRAM study determined that 64 No properties in Graiguenamnanagh Tinnahinhch were at risk of flooding for the current day 1% Annual Exceedance Probability (AEP) event. There is also non-residential flooding such as flooding to commercial business, roads and agricultural lands.

The initial CFRAM study predicted that out of bank flooding, would occur due to a combination of insufficient channel capacity and culvert Capacity along the Duiske and Insufficient channel capacity and the Bridge also restrict flow along the River Barrow causing out of bank flooding impacting properties on The Quays

2.0 Main Objectives

The objective of this scheme is the identification, design, and submission (for planning consent) of a Flood Relief Scheme, that is technically, socially, environmentally, and economically acceptable, to alleviate the risk of flooding to the Communities of Graiguenamanagh and Tinnahinch. The objective is to protect residential and non-residential properties from flooding and consequent damage and to facilitate public realm amenities along the Rivers Barrow and Duiske in the identified scheme area.

The Target Standard of Protection (SoP) of the Scheme is to prevent flooding of properties and assets within the Scheme Area during flood events with a 1% AEP for fluvial floods often referred to as 1- in a 100 year flood.

3.0 Description of the Scheme

The Preferred Ballyhale Flood Relief Scheme following the OPW guidance documentation and the principal elements associated with the proposed scheme include the following:

- Upstream Storage:
- Installation of flood storage area approximately 1.5km upstream from the River Barrow and River Duiske confluence. The storage area will consist of a grass seeded fill material embankment that ranges from 0-8m above existing ground level, with side slopes at a ratio of 3:1. The embankment length will tie into the existing high ground to hold a flood storage extent of approximately 0.074 km².
- A flow control device (hydrobrake) will be constructed in the centre of the embankment within the Duisk channel which will include debris screen on the upstream side to prevent blockage.
- Road and associated services into the surrounding landscape, tree, hedge, riparian planting and wildflowers meadows have been proposed to assist integration of the embankment.

River Barrow Defences:

- Defences at the Graiguenamanagh Rowing Club consist of hard and soft defences set back from the Quayside. The flood defence wall in front of the Club will be circa 1.5 m high above ground level and will include 1 m high glazing within its height in front of the clubhouse. The riverward side of the wall will be clad in natural stone. A soft earthen embankment will be constructed 1.8m high nearest to the river and will tie into high ground to the North of the building. The embankment will have side slopes of 1V:2.5H and will be grass seeded. For the southern vehicular access to the Boathouse, a double gate arrangement is proposed to allow for pedestrian access to facilities while providing a secure boundary to the boathouse. Mooring and boat access will be available along the length of The Quay. Further, the slipway and concrete steps opposite the Boat Club will remain. The vehicular route within the club carpark will be altered to a one-way system for safer pedestrian movements.
- A new raised defence (stone clad wall) will be constructed from the Rowing Club along Graiguenamanagh Quay and will tie into the existing wall near the junction of Barrow Lane. A flood gate will be installed across the junction to the Rowing Club, flushed with the flood defence walls. This flood gate will restrict access to the Rowing Club during flood conditions. An access ramp will be installed over the defence wall to maintain access to the site before the Rowing Club.
- New raised defences (cut stone clad and glass wall) upstream of the Graiguenamanagh Bridge to tie into the flood gate at the Graiguenamanagh Rowing Club/Barrow Lane junction. The vehicular route will be altered to a one-way system, with wider footpaths proposed for easier and safer pedestrian movement and permeability. Site clearance work will consist of removal of existing bollards, demolition of boundary wall/hoarding at corner of the Quay and Barrow Lane and demolition of existing streetscape along the entire quay.
- Flood gates will be placed along Graiguenamanagh Quay and Tinnahinch Quay to retain access for water activities. These will be closed in flood conditions.
- A new raised defence (stone clad flood wall) downstream of the Graiguenamanagh Bridge that will follow the existing natural line of the edge of the carriageway.
- A new raised defence (earthen embankment) on the left bank upstream of the Graiguenamanagh Bridge. The embankment will be circa 240 m long with a maximum

height of 1.25 m above ground level. The embankment will have side slopes of 1V:2.5H and will be grass seeded. The embankment will tie into a short section of concrete flood wall at its north eastern end. Trees and ornamental planting will be introduced at the entrance to the amenity pathway, both for visual and biodiversity benefit.

- Modifications to, or a new raised defences (flood concrete walls) on the left bank downstream of Graiguenamanagh Bridge along Tinnahinch Quay.
- Installation of non-return valves on outfalls to the River Barrow.
- Behind wall drainage improvements/pumping stations

• River Duiske Defences:

- New raised defences (concrete wall) along both the left and right banks of the River Duiske, at the confluence with the River Barrow up to the Turf Market Bridge.
- A new raised defence (earthen embankment) along the eastern boundary of the Hub. The embankment will be 62m in length with side slopes of 1V:2.5H and will be grassed seeded. Formal and informal pathways and planting are to be provided throughout the area, linking the area to the town, and residential area to the west. These will also provide linkage to the South Leinster Way/Brandon Hill.
- A new raised defence (concrete wall) on the left bank of the River Duiske, downstream from the High Street Bridge.
- A new raised defence (concrete wall) and wall improvements on the left bank of the River Duiske, upstream of the High Street Bridge to Clapper Bridge.
- Ornamental planting is proposed between the proposed flood wall and the existing stone wall. Further steps are to be introduced towards Clapper Bridge with guardrails/handrails.
- Installation of debris trap upstream of Clapper Bridge.
- Removal and raised replacement of two existing foot bridges, near the Mass Path and at Turf Market.

4.0 Scheme Design Background & History

In March 2020 Kilkenny County Council appointed Byrne Looby Consulting Engineers for Engineering and Environmental Technical Services in order to progress the Graiguenamangh-Tinnahinch Flood Relief Scheme. Kilkenny County Council used the OPW Framework to appoint Byrne Looby.

Kilkenny County Council signed a Section 85 with Carlow County Council which gives resolved;

‘That we, The Members of Carlow County Council, hereby approve that Carlow County Council enter a section 85 agreement with Kilkenny County Council to facilitate the design and construction of a Flood relief Scheme for Graiguenamanagh/Tinnahinch, in accordance with the provisions of section 85 of the Planning and Development Act 2001.’

The Office of Public Works, OPW, is the funding authority.

The development of the proposed Flood relief scheme for Graiguenamangh-Tinnahinch has been a multi staged process with consideration of a wide range of alternatives in order to arrive at the final flood relief scheme design.

Since 2020, extensive work has been carried out in terms of Environmental and Engineering surveys, including Hydrological Analysis and Hydraulic Modelling, Site Investigations, Landscape Surveys &

Ecological Surveys to determine appropriate measures to address and protect from the risk of flooding in the village of Ballyhale.

The development process required a wide range of complementary studies to ensure a robust Environmental and Technical basis for the proposed flood relief scheme. These include:

- Environmental Constraint's Report
- Flood Risk Management Option Report
- Cost Benefit Analysis Report
- Hydrology Report
- Hydraulics Report

Initially 5 No proposed options were presented for Public Consultation in an 'Options Report' with an Multi Criteria Assessment (MCA). With further design development an emerging preferred option was proposed which identified 84 No properties to be protected under this preferred option.

5.0 National, Regional and Local Policy Context

This section provides an overview of the general planning policy context pertinent to the Graiguenamagh-Tinnahinch Flood Relief Scheme (FRS) at national, regional and local level. The application for the FRS has been made to An Coimisiun Pleanala, in accordance with Section 175 and 177 AE of the Planning and Development Act 2000, as amended.

5.1 National Level

5.1.1 Arterial Drainage Act 1945 and Arterial Drainage (Amendment) Act 1995

The Arterial Drainage Act, 1945 (S.I. No. 3 of 1945) is the primary legislation within which the OPW has been operating under for the last 70 years. It allows the undertaking of wide arterial drainage schemes to reduce flooding and improve agricultural land. It was amended in 1995 and allowed localised flood scheme to protect and reduce flood risk in individual urban areas.

5.1.2 Report of the Flood Policy Review Group 2004

In 2004, a review of the national flood risk management policy was undertaken. The OPW were appointed to co-ordinate the delivery of flood risk policy as lead agency as per the recommendations of the report. The Government also aimed to address flooding by:

- Prevention - avoid construction in flood-prone areas.
- Protection – take measure to protect against flooding.
- Preparedness – planning and responding to reduce the impacts of flood events.

5.1.3 European Communities Assessment and Management of Flood Risks Regulations 2010 and 2015

The EU Floods Directive (2007/60/EC) was transposed into Irish Law through the EU Community Regulations. The OPW is responsible for formulating and implementing measures to deal with flooding in Ireland.

5.1.4 Office of Public Work Climate Change Sectoral Adaption Plan, Flood Risk Management 2015-2019

This document is the current plan by the OPW for adaption. It is a document that sets out an approach and framework for climate change based on current understandings of flooding and flood risk in Ireland.

5.1.5 National Adaption Framework 2018

The Department of Communications, Climate Action and the Environment's National Adaption Framework (NAF), Planning for Climate Resilient Ireland (January, 2018) was development under the Climate Action and Low Carbon Development Act. The NAF provide a framework to ensure local authorities, regions and key sectors can assess key risk of climate change and consider adaption measures. It is reviewed every 5 years.

Adaptions are undertaken to address current and future risks posed by climate change.

5.1.6 Local Authority Adaption Strategy Development Guidelines 2018

These are statutory guidelines published by the Department of Communications, Climate Action and the Environment, describe the framework and methodology to be followed by local authorities.

5.1.7 Ireland 2040: The National Planning Framework

The National Planning Framework (NPF), published in February 2018, is a strategic plan for managing growth, using state lands and supporting strengthened more environmentally focused planning at local level.

5.1.8 Strategic Flood Risk Assessment

At the draft stage of the NPF process, a high-level flood risk appraisal - 'Strategic Flood Risk Assessment Report' was carried out by RPS in September 2017. It identified high level risk and spatial planning issues for the country and set out a policy framework for local authority development plans.

No specific information relating to Kilkenny is in the document, however it mentions fluvial risk in the Southern Region including the river Nore.

5.2 - Regional Level

5.2.1 Southern Regional Economic and Spatial Strategy

The Southern Regional Authority recently adopted the Regional Spatial Economic Strategy (RSES). This encompasses Kilkenny as well as the surrounding Southern region. This sets out 229 regional strategic outcomes in line with the National Strategic Outcomes of the NPF.

The Ballyhale FRS is aligned with the regional strategic outcomes on Climate Action including water, waste and other environmental resources, climate resistance and green infrastructure.

The Regional Policy Objectives (RPO) related to flooding include:

- RPO 113 Floods Directive
- RPO 114 Flood Risk Management
- RPO 115 Flood Risk Management Plans
- RPO 116 Planning System and Flood Risk Management
- RPO 117 Flood Risk Management and Biodiversity
- RPO 118 Flood Risk Management and Capital Works
- RPO 119 Flood Risk Schemes
- RPO 120 Flooding and Coastal Erosion

5.3 - Local Level

5.3.1 Kilkenny County Development Plan 2021-2027

Kilkenny County Development Plan (KCDP) outlines the policies relevant to the County. The plan deals with flooding by aligning its policies and objective with the Strategic Objectives of both the NPF and the RSES.

5.3.2 Climate Adaption and Resilience

The strategies aims are outlined in Chapter 2 of the Kilkenny County Development Plan 2021-2027.

5.3.4 Trees and Hedgerows

Chapter 9 of the KCDP acknowledges trees, hedgerows, biodiversity and landscape character. They also note the vital role these contribute to minimize flooding and increase climate adaption/mitigation methods.

5.3.5 Inland Watercourse

Section 9.2.6 of the KCDP outlines the important role that rivers, streams, wetlands and groundwater play. Relevant planning application should have regard to the guidance document by Inland Fisheries Ireland – Planning for Watercourses in the Urban Environment (2020)'.

5.3.6 Water Framework Directive

The Water Framework Directive (WFD) sets out a strategic response to the threat of pollution which aims to prevent further deterioration of water quality, restore 'good' status of water quality and reduce chemical pollution of water sources.

5.3.7 Climate Change Adaption Strategy 2019-2024

Kilkenny County Council prepared a Climate Change Adaption Strategy for the period 2019-2024 which informs the policies and objectives of the KCDP. The Strategies contains 95 individual actions under five Adaption Action Headings within the Flood Resilience identified as one of the main areas of focus.

5.3.8 Cumulative Impacts

Cumulative effects can result from the combination of potential impacts of the development being assessed with a number of other developments and land management practices such as agricultural, industrial and waste water treatment.

A search of Kilkenny County Council Planning database was carried out to identify proposed or permitted projects in proximity to Graiguenamangh-Tinnahinch that might result in cumulative

environmental impacts when considered in combination with the proposed flood relief scheme. These projects, where they exist, are assessed for potential cumulative impacts by each discipline within the EIAR.

6.0 Planning Consent Process

A simultaneous application for approval for the Ballyhale Flood Relief Scheme was made to An Bord Pleanála under Section 175 and 177AE of the Planning and Development Act 2000, (as amended) and the Planning & Development Regulations, 2001 (as amended) as an application is made for confirmation of the proposed Compulsory Purchase Order.

The scheme was subject to an Appropriate Assessment Screening (Stage 1) carried out by Byrne Looby. The conclusion of that assessment using the precautionary principle and based on best scientific knowledge and objective information that the project is limited in scale and extent and the potential zone of influence has the potential to extend downstream from the immediate site to impact on European Sites i.e. River Barrow.

As a result, potential impacts in the absence of standard construction phase or mitigation measures may result in impacts on the River Barrow and River Nore SAC [IE002162].

NIS is required in respect of the effects of the project on the River Barrow (downstream impacts during construction) because it cannot be excluded on the basis of best objective scientific information following screening, in the absence of control or mitigation measures that the plan or project, individually and/or in combination with other plans or projects, will have a significant effect on the named European Site/s.

An Coimisiun Pleanála is the competent planning authority in this case to approve the NIS.

7.0 Compulsory Purchase Order

Having regard to the parallel planning consent process required in this case, the scheme is now ready to proceed to Compulsory Purchase Order stage. During the development stages of the scheme it was determined that certain lands not in the ownership of Kilkenny County Council would need to be acquired to secure the construction and future maintenance of the proposed Graiguenamagh-Tinnahinch Flood Scheme.

There are 29 Landowners in total that are to be affected by the Compulsory Purchase Order. Some landowners will have two or more types of CPO requirements on their landholdings. In summary the CPO process will consist of the following;

- There is a total of 15 landowners who will be the subject of the permanent acquisition of land
- There is a total of 14 landowners who will be subject to temporary land acquisition.
- There is a total of 23 landowners who will be subject to acquisition of wayleaves (either permanent or temporary).
- There are 2 landowners who will be subject to the acquisition of Permanent Right of Ways.

There is broad but not unanimous agreement about the need for a Flood Relief Scheme. Obtaining all the required lands by agreement would entail protracted negotiations that are unlikely to be successful in all cases and potentially delay the delivery of this Flood Relief Scheme. The proposed acquisition of these lands by CPO will allow landowners to make further observations to An Coimisiun Pleanála and voice their concerns in the event of an oral hearing.

8.0 Approval & Recommendation to invoke Compulsory Purchase Order Procedures

If Kilkenny County Council is successful with the Compulsory Purchase Order it will:

- Allow the Council to acquire the land for the scheme within a reasonable timescale
- Allow all such land to be acquired clear of any doubts which may exist as to title.
- Allow a mechanism to come into play for the assessment of compensation.

I seek your approval and recommendation that Kilkenny County Council invokes Compulsory Purchase Order procedures to effect the acquisition of the lands required to deliver the **Graiguenamangh-Tinnahinch Flood Relief Scheme**.

Yours sincerely,



Philippe Beubry
Senior Executive Engineer,
Flood Capital Office

I agree with this recommendation,



Seamus Kavanagh,
Senior Engineer,
Roads.

Approved,



Mary Mulholland,
Director of Services,
Corporate, HR, Roads & Transportation, Water Services, Health & Safety & Communications.

