



Dunkellin River and Aggard Stream Flood Relief Scheme

Response to Rahasane Turlough Shareholders Committee

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INTRODUCTION

RPS was commissioned by Galway County Council in 2011 to prepare an Environmental Impact Statement (EIS) for the Dunkellin River and Aggard Stream Flood Relief Scheme, hereafter called the “scheme”, in south County Galway. The Dunkellin River and the Aggard Stream form part of the Dunkellin Drainage District which was constructed in or around 1857 and Galway County Council has a statutory maintenance responsibility for these works.

The scheme was submitted to An Bord Pleanála (ABP) in October 2014 for planning approval in line with Section 175 of the Planning and Development Act 2000, as amended. In February 2015, the Board, in accordance with Section 175(5) (a) of the Planning and Development Act, 2000, as amended, requested further information in relation to the proposed development.

Item 7 of the Board’s letter stated that, *“The applicant is invited to respond in detail to the written submissions made by parties including local residents, prescribed bodies and others.”*

The purpose of this document is to provide a response to the issues raised by the Rahasane Turlough Shareholders Committee in their submission.

1 ITEM 1 – RINN BRIDGE TO CRAUGHWELL

1.1 *The Rahasane Turlough Shareholders Committee have noted their objection to the proposed scheme on the basis that:*

- a. *“[...] it may be a flooding scheme for many home and landowners in Monksfield to Craughwell to Rinn.”*
- b. *“[...] Galway County Council’s attempt to fast track water from subsidiaries into the Dunkellin without having a plan in place to deal with this water.”*
- c. *“[...] the absence of any work from Rinn Bridge to Craughwell.”*
- d. *“[...] effort has to be made to get derogation from the EU so that a proper plan can be put in place.*
- e. *“We feel we have been let down by planners and engineers who have taken the easy (and lazy) option of bringing forward a plan at astronomical cost that does not cater for the hundreds of people who are worst affected.”*

Response:

Following on from Arterial Drainage Works completed, along the Dunkellin River, in the mid 1850’s and later in the early 1920’s, the Office of Public Works prepared an Arterial Drainage Design for the Dunkellin/Lavally Catchments in the mid 1900’s (circa 1950).

This Arterial Drainage Scheme, as detailed on its original design drawings, included for alterations to the channel widths, channel regrading (bed level) and deepening of a number of the bridges/structures along the Dunkellin River from Craughwell village through the Rahasane Turlough, Rinn Bridge, Dunkellin Bridge, Killeely Beg Bridge and Kilcolgan Bridge to the sea.

All of these proposals were significant in nature and were more than just a flood relief scheme but a large scale Arterial Drainage Scheme with significant benefits that can be accrued for agricultural lands and local properties.

At that time cost benefit analyses were not considered in the development of Arterial Drainage Scheme to the same extent that they are considered now (i.e., a benefit to cost ratio of greater than 1.0 is now required to commence work on a scheme of this nature).

However, due primarily to the significant environmental impacts that would result from the drainage of the Rahasane Turlough, the proposed scheme did not proceed as planned.

Referring to Item (a) above, the current scheme, as presented, **is not an Arterial Drainage Scheme but a flood relief scheme** that provides protection, from the 100 year Flood Event (plus a Mid Range Scenario of 20% for Climate Change), for properties:

- a. in the village of Craughwell, and
- b. the townlands of Dunkellin and Killeely Beg,

It does not provide flood protection for properties along the northern shore of the Rahasane Turlough, but does provide flood protection to the Rinn Bridge so that access can be maintained to the residential properties along the northern boundary of the turlough. The proposed works are predicted to have no impact on the normal flooding regime of the Turlough and it is predicted that there is no perceived increased of flooding to lands or properties from that currently experienced along the boundary of the Turlough.

The proposed maintenance works along the Aggard Stream are also not an Arterial Drainage Scheme but a requirement and statutory responsibility that Galway County Council must undertake in order to maintain the Aggard Stream in reasonable condition.

The mathematical model of the proposed maintenance activities on the Aggard Stream, including the replacement of existing culverts has shown that there is no perceived change in the quantities of water that are expected to discharge into the Dunkellin River. These maintenance activities are therefore not predicted to *“fast track water from subsidiaries into the Dunkellin”*.

The proposed works at Craughwell village include the deepening of the channel to improve conveyance of water through the village without causing flooding to residential and commercial properties and the main road through the village (the R446). The works as presented do not propose to alter the vertical profile of the river and as such the rate of discharge or river water from Craughwell village to the Rahasane Turlough is not predicted to change significantly. These channel deepening activities are therefore not predicted to *“fast track water from subsidiaries into the Dunkellin”*.

Referring to Items (c), (d) and (e) above, the committee are correct in noting *“the absence of any work from Rinn Bridge to Craughwell.”* Such work has been not been included in the proposals because of the significant impacts that such work may have on the turlough. However, we would note that Section 3.6.1 of the Works Description contained in Appendix A to the EIS discusses the alternative flood alleviation measures that were considered in the vicinity of Rahasane Turlough and demonstrates that we have not taken the *“easy (and lazy)”* approach to the development of the scheme. The options broadly considered one main approach, namely; **Channel Deepening immediately downstream of the Rahasane Turlough.**

“Channel widening of the existing channel between the mouth of Rahasane Turlough to Rinn Bridge was also considered. Figure 3-13 shows the affect this widening has compared to the preferred scheme, most notably at levels over 15.7m. This alternative scheme is not considered to be viable as it has the potential to reduce the water profile in the Rahasane Turlough cSAC, to levels which would significantly impact on the normal flood regime and therefore impact on the local flora and fauna. This was not considered to be viable as the turlough is a protected habitat and heritage site.”

Further consideration was also given to the provision of **“Flood Embankments along the northern shore of the Rahasane Turlough”** to provide flood protection to the dwellings that were flooded in November 2009. Refer to Section 3.3.1 of the Works Description, as follows:

“This fourth scheme considered the use of flood embankments or walls along the shore of the turlough without the need to change the depth of flooding within the turlough.”

While offering flood protection on a theoretical basis, this proposal may not:

- 1. provide the necessary flood protection (from the Rahasane Turlough) due to the variable karstic nature of the bedrock in the region and the unpredictable potential movement of water beneath the flood protection wall or embankment (bringing a risk of "burst up" due to differential pressure of approximately 2.2m head across the wall), and*
- 2. Allow the drainage of surface/ground water, from lands along the northern boundary of the water body, behind the proposed wall, into the Rahasane Turlough, to occur naturally. This movement of water may be due to surface water flow or ground water movement in rock fissures or other unknown karstic features. Attempts to detail flexible pinch valves/flap valves to permit unidirectional drainage from behind the wall are unsound from a flood protection viewpoint, because such valves inevitably become blocked by debris in a partly open position.*

Considering these risks the construction of flood embankments or walls in this karstic region were not considered viable and are therefore not proposed. However, the Craughwell to Kilcolgan Road and properties along the northern shore of the turlough will continue to be at risk of flooding during the extreme design flood events."

We would note that future measures as considered above may involve localised protection at each household and such an approach will be dealt with on a case by case basis. It is envisaged that such solutions, which may entail the use of demountable flood barriers or permanent flood protection walls with internal flood sumps and pumps, will be the subject of individual applications for planning consent to Galway County Council, as the Planning Authority. Such permanent or demountable flood barriers may be in excess of 2m high and initial discussions with the property owners would suggest that permanent walls of this nature would not be acceptable. The design of an individual flood protection solution for each property on an individual basis has been omitted from this planning application.