

## **Frequently Asked Questions**

### **Shannon Flood Risk State Agency Co-ordination Working Group**

10<sup>th</sup> December 2021.

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## List of Acronyms

OPW	Office of Public Works
IFI	Inland Fisheries Ireland
NPWS	National Parks and Wildlife Service
DHLGH	Department of Housing, Local Government and Heritage
EPA	Environmental Protection Agency
CCMA	City and County Management Association
DAFM	Department of Agriculture, Food and the Marine
CFRAM	Catchment Flood Risk Assessment and Management
FRMPs	Flood Risk Management Plans
NFFWS	National Flood Forecasting and Warning Service
NCM	Nature-based Catchment Management
RBD	River Basin District
WFD	Water Framework Directive

## Background

The Shannon Flood Risk State Agency Co-ordination Working Group was established by the Government in 2016 to enhance the ongoing co-operation of all State Agencies involved with the River Shannon and to introduce co-ordinated flood risk solutions that may have benefit in managing flood risk on the Shannon Catchment. The Group was established at that time following severe flooding that occurred during the winter of 2015/16. The Group is focussed on prioritising actions and activities that can help to manage flood risk along the River Shannon.

The Group's work is informed by the National CFRAM Programme, the largest study of flood risk ever undertaken by the State. A key role of the Group is to monitor and report on the implementation of the FRMPS for the Shannon River Basin District (RBD) that were developed as a result of CFRAM. The FRMPs include 34 new flood relief schemes to protect communities throughout the Shannon RBD. These schemes, together with those already completed or under construction, will protect 95% of properties at significant risk from flooding in the future.

This document sets out the role of the Group together with its achievements, work underway and work planned to help manage flood risk along the River Shannon. It also aims to explain the effectiveness and the limitations of measures identified to help manage that risk.

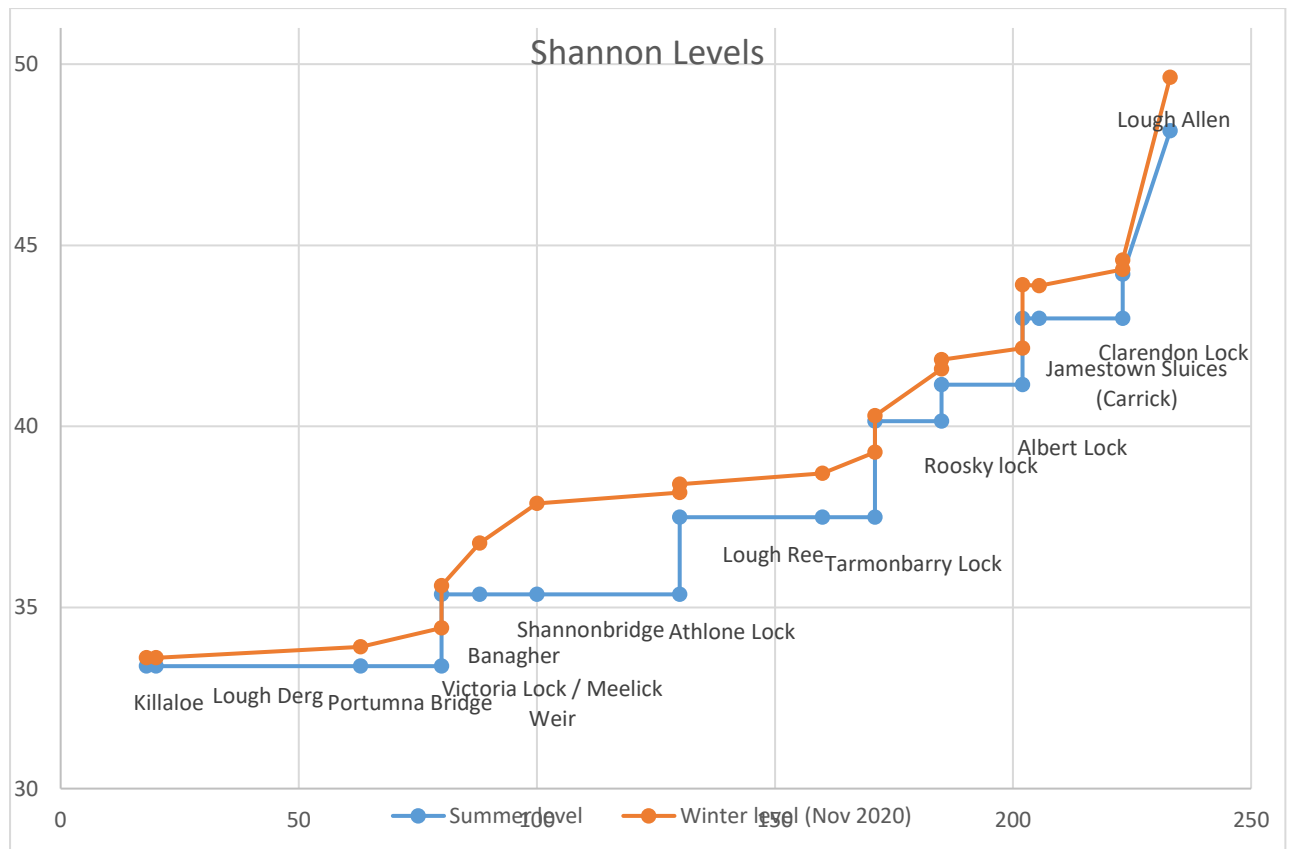
## Overview and Characteristics of the River Shannon

The River Shannon is a valuable natural resource that is important to Ireland's economy, society, culture and environment. It serves an important purpose for agriculture, electricity generation, navigation for tourism, fishing and creates employment to support these activities.

As the largest river in Ireland, the Shannon rises in County Cavan and flows for 260 km before entering the Shannon Estuary at Limerick City. The river is remarkably flat, falling only 49m from source to sea, making it naturally slow and with the majority of the fall in height taking place on the 24km stretch between Killaloe and Limerick. In comparison, the River Thames in the UK falls 108m over 346km. A map of the River Shannon can be viewed [here](#).

The Shannon River Basin drains an extensive area of central Ireland and includes coastal parts of Kerry and Clare which drain to the sea. The combination of these features means that it is not possible to stop all flooding on the River Shannon.

Figure 1: Long section of the River Shannon showing summer and winter water levels.



The Shannon River Basin District (RBD) includes the entire catchment of the River Shannon and its estuary, covering some 17,800 km<sup>2</sup> and 20% of the island of Ireland. The RBD covers parts of 17 counties: Limerick, Clare, Tipperary, Offaly, Westmeath, Longford, Roscommon, Kerry, Galway, Leitrim, Cavan, Sligo, Mayo, Cork, Laois, Meath and Fermanagh.

The Shannon RBD is a largely rural district with many protected sites that depend on water. Any interventions in these areas require statutory consents and approvals from the appropriate authorities.

# 1 Shannon Flood Risk State Agency Co-ordination Working Group

## 1.1 What is the purpose of the Shannon Flood Risk State Agency Co-ordination Working Group?

The Shannon Flood Risk State Agency Co-ordination Working Group was established in January 2016 by the Government to enhance on-going co-operation across all of the State Agencies involved with the River Shannon.

The Group is:

- building on the existing work and commitment of all the State Agencies involved in flood risk,
- focussed on ensuring the best possible level of co-ordination between all statutory bodies involved in flood risk management on the Shannon,
- designed to deliver the highest level of efficiencies to add value to the CFRAM Programme.

## 1.2 What are the Group's Terms of Reference?

The Group's terms of reference were agreed by the Government on 26<sup>th</sup> January 2016.

Informed by the national CFRAM Programme and in order to further effectively manage and mitigate the flood risk on the Shannon Catchment, the Group will:

- Develop and agree a Shannon Flood Risk Work Programme (with identified output KPI's) to focus and prioritise actions and activities to manage flood risk for the Shannon Catchment.
- Provide coordinated direction and guidance to ensure delivery by State Agencies, to meet their statutory role, of their constituent work programme in relation to flood risk management.
- Adopt and/or develop guidelines and protocols to inform and/or assist better co-ordination and co-operation by and between State Agencies.
- Informed by an audit of roles and responsibilities in relation to flood risk management on the Shannon Catchment, seek clarity on any legal and policy issues to inform its work.
- Consult with other bodies, including voluntary bodies and communities.
- Provide guidance in relation to roles and responsibilities for non-statutory bodies involved in managing flood risk on the Shannon Catchment.



- When agreed, monitor and report quarterly on the implementation of the Shannon Flood Risk Management Plan.
- Develop other structures as an efficient approach to progressing and informing its work.

### 1.3 Which State Agencies are involved in the Group?

The Shannon Flood Risk State Agency Co-ordination Working Group comes under the chairmanship of the OPW. Its members are at Chief Executive Officer level or equivalent, representing the following State Agencies:

- OPW
- ESB
- IFI
- DHLGH
- Bord na Móna
- EPA
- Irish Water
- Local Authorities, represented by the CCMA
- Waterways Ireland
- Department of Agriculture, Food and the Marine

The Attorney General's Office and other Government Departments may also participate, by request of the Chairman.

### 1.4 What has the Group achieved?

All of the State Agencies involved in the Group carry out an extensive range of works annually that can help to manage flood risk on the Shannon Catchment. These works are captured by the Group in its annual work programmes which are available to the public at [www.opw.ie](http://www.opw.ie)

Since the establishment of the Group, there has been enhanced co-operation and co-ordination between agencies involved in the Group.

Several strategically important initiatives have been completed, including:

- The OPW has published the FRMPs which include 34 new flood relief schemes for the Shannon RBD.
- By the end of 2020, the OPW had approved funding of over €37.4m for over 650 projects for the Shannon RBD under the Minor Flood Mitigation Works and Coastal

Protection Scheme. Two thirds of these projects are outside of the areas studied by the Shannon CFRAM Programme.

- Waterways Ireland has strengthened, repaired and increased the height of embankments along the Blackwater River at Clonlara. It has also carried out targeted maintenance works on and off the main channels.
- Local Authorities have reviewed their emergency response plans to reflect the experiences from previous flooding events.
- Local Authorities have completed some road improvements works to help mitigate potential flood damage in the future.

### 1.5 How has the work of the Group improved co-ordination?

Prior to the Group's establishment, there was an existing structure for co-ordination between agencies involved with the River Shannon.

The Group has identified additional opportunities for further co-ordination, such as:

- timing and approach to delivery of individual work programmes on channel maintenance and works,
- sharing of forecasting data from the ESB and the OPW,
- plans for emergency response during flood events,
- planned delivery of the measures in the FRMPs for the Shannon RBD,
- developed a guidance document *Living Near Watercourses: A Guide to the Rights and Responsibilities of Landowners*. This document is available to the public at [www.flooding.ie](http://www.flooding.ie),
- co-ordinating activities within the existing statutory roles and functions of the State Agencies.

### 1.6 What additional initiatives has the Group introduced?

The Group has taken several significant decisions since its establishment its work to date includes:

- the completion of targeted maintenance at five locations on the River Shannon, which has enhanced the conveyance capacity and halted further deterioration of the channel,
- completion of a study to examine the benefits of removing constrictions, resulting in lower summer water levels, through the Shannon Callows,
- completion of a study to examine the cause, degree and rate of restriction downstream of Parteen Weir in the Lower Shannon,
- trialling the lowering of the lake levels on Lough Allen to help alleviate any significant flooding that may occur,

- the completion of a preliminary assessment on the potential for strategic maintenance on the River Shannon.

#### 1.7 How many times has the Group met?

The Group met on fourteen occasions between 2016 and 2020.

#### 1.8 Can I send a submission to the Group?

Yes. Written submissions may be sent to Jackie Stewart, Secretary, at [Jackie.stewart@opw.ie](mailto:Jackie.stewart@opw.ie)

#### 1.9 Where can I get more information about the Group's work?

The Group publishes its annual Work Programmes, Minutes of meetings and other information on the [OPW website](#)

## 2 Managing Flood Risk on the River Shannon

### 2.1 What was the Catchment Flood Risk Assessment and Management Programme?

The national CFRAM Programme was undertaken by the OPW in partnership with its consultants, Local Authorities and other stakeholders. It involved a study of 80% of Ireland's major source of flooding across 300 communities across the country. It was the most comprehensive study of flood risk ever undertaken by the State.

The country was divided into 6 regional study areas based on river basin districts. This included a study on the Shannon River Basin District.

The findings from the CFRAM Programme are set out in 29 FRMPs which identify and describe the flood risk assessed in each of the 29 river basins and set out the proposed measures, both non-structural and structural, to address that flood risk.

The approach to the CFRAM Programme was strategic. It recognised the need, in line with international best practice, to move to a more sustainable, planned and risk-based approach to dealing with significant risks of flooding.

### 2.2 What was the Shannon Catchment Flood Risk Assessment and Management Study?

The Shannon River Basin District (RBD) includes the entire catchment of the River Shannon and its estuary, covering some 17,800km<sup>2</sup> and 20% of the island of Ireland. The RBD covers parts of 17 counties: Limerick, Clare, Tipperary, Offaly, Westmeath, Longford, Roscommon, Kerry, Galway, Leitrim, Cavan, Sligo, Mayo, Cork, Laois, Meath and Fermanagh.

The Shannon CFRAM Study focussed on the areas at significant flood risk and its impact, that were identified through an assessment of areas known to have experienced flooding in the past and areas that may be subject to significant flooding in the future. A total of 67 communities in the Shannon RBD were assessed as part of this study.

### 2.3 What was the outcome of the Shannon Catchment Flood Risk Assessment and Management Study?

The FRMPs for the Shannon include 34 new flood relief schemes to protect communities in the Shannon River Basin District. Of these, work has commenced on 22 schemes which are currently at various stages of development. The remaining schemes will be advanced during the second phase of implementation of the FRMPs. The work of the Group is informed by the FRMPs and is focussed on adding to the proposed flood protection measures.

### 2.4 What are the Flood Relief Schemes for the Shannon River Basin District?

There are 11 communities in the Shannon RBD that are benefitting from completed flood relief schemes which are protecting people and properties from the risk of flooding. A further 38 flood relief schemes in the Shannon area will be delivered under the Government's €1bn investment in flood relief measures over the lifetime of the National Development Plan 2018 – 2027. Collectively, all of these schemes when completed will protect 95% of those properties identified as being at significant risk from flooding.

The tables beneath sets out the status of the 49 flood relief schemes for the Shannon RBD as at 25<sup>th</sup> March, 2021.

Completed Flood Relief Schemes	
1	Sixmilebridge, Co. Clare
2	Ennis Upper, Co. Clare
3	Foynes (Tidal), Co. Limerick
4	Newcastlewest, Co. Limerick
5	Cappamore, Co. Limerick
6	Dromcollogher, Co. Limerick
7	Harry's Mall, Limerick City
8	Clancy Strand, Limerick City
9	Tullamore, Co. Offaly
10	Ballymakeogh/Newport, Co. Tipperary
11	Mullingar, Co. Westmeath

Flood Relief Schemes Under Construction	
12	Ennis Lower, Co. Clare
13	Ennis South, Co. Clare
14	Athlone, Co. Westmeath

Flood Relief Schemes at Design and Development Stage (Contracts Awarded)	
15	King's Island, Limerick City (Planning)
16	Springfield, Co. Clare*
17	Ballinasloe, Co. Galway*
18	Athea, Co. Limerick^
19	Castleconnell, Co. Limerick* ^
20	Carrick-On-Shannon, Co. Leitrim*
21	Kilkee, Co. Clare
22	Shannon, Co. Clare
23	Leitrim, Co. Leitrim *^

Development of Briefs for Design & Development Contracts (includes some schemes where the tender process has already commenced)	
24	Bunratty, Co. Clare ^
25	Killaloe, Co. Clare* ^
26	Kilrush, Co. Clare ^
27	Abbeydorney, Co. Kerry ^
28	Banna, Co. Kerry ^
29	Tralee, Co. Kerry
30	Clonaslee, Co. Laois* ^

31	Mohill, Co Leitrim *^
32	Adare, Co. Limerick
33	Limerick City & Environs*
34	Rathkeale, Co. Limerick ^
35	Longford, Co. Longford*^
36	Rahan, Co. Offaly* ^
37	Nenagh, Co. Tipperary* ^

Flood Relief Schemes Planned for Next Phase of Delivery	
38	Portumna, Co. Galway*
39	Ballylongford, Co. Kerry
40	Listowel, Co. Kerry
41	Dromod, Co. Leitrim*
42	Askeaton, Co. Limerick
43	Foynes, Co. Limerick
44	Newcastle West, Co. Limerick
45	Birr, Co. Offaly*
46	Athleague, Co. Roscommon*
47	Boyle, Co. Roscommon*
48	Roscommon, Co. Roscommon*
49	Roscrea, Co. Tipperary*

\*Communities in the catchment of the River Shannon

^Small projects (<€1m) that have been prioritised for delivery and which will be progressed directly by the relevant local authorities, with full funding from the OPW.

## 2.5 Was the public consulted during the development of the Flood Risk Management Plans?

Yes. There was extensive public consultation during the process to develop the FRMPs for the Shannon RBD. This involved 144 Public Consultation Days where members of the public had opportunities to engage with the process and to discuss past floods and the accuracy of the maps. This consultation resulted in 156 submissions that were received by the OPW from stakeholders comprising members of the public, elected representatives, Local Authorities and various organisations. Observations were considered and the FRMPs were amended accordingly, as appropriate.

The Department of Public Expenditure and Reform carried out an independent review of the strategic level environmental assessments on the FRMPs and the final Plans were formally submitted to the Minister for Public Expenditure and Reform for approval, in accordance with statutory requirements.

The FRMPs are available to the public at [www.floodinfo.ie](http://www.floodinfo.ie).

## 2.6 To what extent can the maintenance of rivers contribute to flood risk management?

Maintenance of rivers and other watercourses has some benefit in preventing the deterioration of channel conveyance capacity. While maintenance on its own cannot protect properties and has no beneficial effect on extreme flood events such as that witnessed along the Shannon during the Winter of 2015, it is recognised that maintenance can play a positive role in mitigating against the effects of less severe flood events and summer flooding.

## 2.7 What maintenance works are carried out on the River Shannon every year?

Some of the State Agencies involved with the River Shannon carry out extensive maintenance works each year. Details of this work is set out in the Group's annual work programmes which are available to the public on the OPW website, [www.OPW.ie](http://www.OPW.ie)

In 2017, the Group developed a short-term targeted programme of maintenance activities for the River Shannon. Consent was received from the NPWS to carry out proposed activities at seven locations identified that would benefit from maintenance. Work involving tree cutting and the removal of silt and emergent vegetation has been completed in five of these locations. This work was undertaken to enhance the conveyance capacity and to halt further deterioration of the river.



## 2.8 What other work has the Group identified to address flooding?

On completion of the targeted maintenance programme, the Group agreed on an assessment to examine the potential scope and scale of a strategic programme of maintenance for the River Shannon. Based on the outcome of this assessment, the Group took a decision to progress a strategic programme of maintenance activities to halt the deterioration of the River Shannon to improve the conveyance capacity of the channel. The nature of this work mainly involves tree and vegetation management and silt removal. Work is underway to advance the various interventions to commence some of this work 2021.

## 2.9 What is being done to address flooding experienced by farmers?

Between 1945 and 1995 the OPW completed 34 Arterial Drainage Schemes on river catchments together with 5 Estuarine Embankment Schemes. The primary purpose of all of these schemes was to provide agricultural land with flood alleviation and outfall for land drainage, over 260,000Ha (650,000 acres) of land benefited. OPW have a maintenance responsibility for over 11,500 Km of channel, over 750Km of embankments and associated bridges, sluices, weirs, pumping stations and other structures on these schemes. The OPW spend over €18m per year maintaining these and other Flood Relief Schemes constructed under the 1995 Amendment Act which have transferred to maintenance.

Maintenance of channels is carried out using suitably rigged excavators that remove silt and vegetation from the channel bed restoring it to its original conveyance capacity. It does not involve deepening or widening of the existing channel. The OPW maintenance operations are carried out in accordance with OPW Environmental Management Protocols and Standard Operating Procedures.

Outside of the major flood relief schemes, local flooding issues are being addressed by local authorities with support from the OPW under the Minor Flood Mitigation Works and Coastal Protection Scheme. This scheme provides funding for minor flood mitigation works or studies, costing less than €750,000 each, to address localised flooding and coastal protection problems. To date, the OPW has approved funding of €35m for over 600 projects for the Shannon River Basin District. Two thirds of these projects are outside of the areas studied by the CFRAM Study.

## 2.10 Can the ‘Pinch Points’ be removed from the Callows Region?

The Shannon CFRAM Study identified possible benefits by removing constrictions or ‘pinch points’ on the bed of the channel upstream of Meelick Weir subject to more detailed analysis.

The Group agreed to further assess potential benefits to reducing summer flood levels by preserving the navigation channel through the Callows between Athlone and Meelick Weir. The assessment showed that some agricultural benefits could be gained for adjoining lands if a number of constrictions in the area studied were removed.

The Group agreed to progress work to remove some of the constrictions in the Callows region. This will enhance the conveyance capacity and halt the deterioration of the river in the area. Completion of this work will also reduce the need to raise the level of the river to support navigation requirements and can also delay flooding.

The works will be informed by public consultation and will involve the full environmental assessments required to progress to the planning process for consent to proceed.

## 2.11 What is being done in relation to the Lower Shannon?

In 2019, the Group has agreed to a hydro-geomorphological assessment of the Lower Shannon to identify the cause, rate and degree of restriction over time due to sedimentation and subsequent vegetative growth. This study was completed in 2020 and further work is underway to explore the various options, potential benefits and indicative costs of each option.

## 2.12 Can the lake levels be lowered before the Winter?

A decision was taken by the Group in 2016 to trial the lowering of the lake levels in Lough Allen to help mitigate potential flood risk during the Winter period.

An analysis has shown that this may have a small positive impact on the extent of certain flood events that might occur during any given Winter.

A protocol was developed between the ESB, Waterways Ireland and the OPW for the operation of the Bellantra Sluices at the outlet of Lough Allen to reduce the levels in the Lough by approximately 0.7m, subject to favourable weather conditions.

A key consideration in this process has been to ensure that any additional flows released out of Lough Allen, which would be required to draw levels in the Lough down to a lower level, must not cause flooding downstream of Lough Allen.

The Group has agreed to the continued operation of the trial, on temporary basis, pending the completion of a flood relief scheme for Carrick on Shannon.

## 3 Management of Water Levels on the River Shannon

### 3.1 How are water levels on the River Shannon managed?

Water levels are managed on the River Shannon through the operation of gates and sluices at the outlets of the three major lakes and the operation of sluices and weirs at Jamestown, Roosky, Tarmonbarry and Meelick. These operations influence the levels on the Shannon but due to the shallow gradient of the river and the many natural restrictions along its course, the levels cannot be fully controlled especially when the Shannon is in flood. The river level is primarily the result of the amount of rain that falls on the river catchment area.

The water level on Lough Allen is managed by the ESB through the operation of the sluices at the outlet of the lake at Bellantra.

The water level on Lough Ree is managed by the ESB through the operation of sluices at Athlone, although in times of flood, most water flows uncontrolled over the 170m weir alongside the Athlone sluices. Waterways Ireland provides manual assistance at Athlone, working to instruction from the ESB.

The level of Lough Derg is managed by the ESB for the purpose of electricity generation, through operation at Ardnacrusha and gates at Parteen Weir. The operation of Ardnacrusha and the gates at Parteen Weir does not affect the levels on the River Shannon above Meelick Weir.

Levels in Lough Allen and Lough Ree are managed to assist with navigation, to ensure minimum navigation levels in the river during dry periods and to ensure that floods are passed safely. The levels in between the lakes are managed for navigation purposes.

Waterways Ireland manages the sluices and weirs at Jamestown, Roosky, Tarmonbarry and Meelick. The function of these weirs is to allow a minimum level of 1.8m of water depth to be retained in the summer periods to allow boats to use the waterways. When levels rise above 1.8m, sluice gates are progressively opened to bring the level back towards the 1.8m depth requirement. When all gates at the weirs are open and the weir boards are removed from Meelick Weir, there is no further action to prevent further rising water level. At this stage the water is running through all open gates and over adjacent weir.

### 3.2 What is the role of the ESB on the River Shannon?

The ESB has a statutory role to generate electricity at Ardnacrusha. The relevant legislation is the Shannon Electricity Act 1925, Electricity Supply Act 1927 and Electricity Supply (Amendment) Act 1934. In broad terms, this legislation permits the ESB to generate electricity at Ardnacrusha and to manage the weirs, sluices and other works that are part of the Shannon Scheme.

### 3.3 What is the role of Waterways Ireland on the River Shannon?

Waterways Ireland is a navigation authority established under statute. It is responsible for the management, maintenance and development of those waterways principally for recreation purposes.

### 3.4 Is there a co-ordinated approach to the overall management of water levels on the River Shannon?

There is daily communication and a co-ordinated approach to management of the water levels between Waterways Ireland and the ESB. ESB manages the levels for electricity production, ensuring the safety of the embankments and dams and assisting Waterways Ireland with navigation levels. Waterways Ireland manage the levels for navigation in the boating season.

### 3.5 Does the ESB Shannon Scheme help alleviate flooding?

ESB generates electricity at Ardnacrusha by diverting water from the River Shannon downstream of Lough Derg. As such, the operation of Ardnacrusha generating station alleviates flooding in the lower Shannon by diverting flood waters away from the “old” river. If there was no generating station at Ardnacrusha the full flood would be flowing down the “old” Shannon river and downstream flooding in these areas would be more severe.

Ardnacrusa generating station uses up to a maximum of 400 cubic metres per second (tonnes per second) of water, and so up to this amount of water is diverted away from the “old” river. This water therefore bypasses areas that historically have been at greater risk of flooding. In a flood with 800 cubic metres per second (such as happened in December 2015) ESB can divert nearly half of the water through Ardnacrusha and away from the “old” river.

### 3.6 Does ESB restrict the flow of water through the River Shannon?

ESB does not restrict the flow of water through the river, but rather once it flows through Lough Derg, ESB diverts the water to Ardnacrusha to generate electricity. During large floods, excess water that exceeds the capacity of Ardnacrusha will flow down the “old” course of the Shannon,

controlled by the operation of the gates at Parteen Weir. These gates have a very large capacity. As such, water does not “back up” the river as a result of the operation of Ardnacrusha.

### 3.7 Can the ESB keep the water levels low on the River Shannon?

While ESB has an influence on water levels on some parts of the river, the ESB does not control the water level overall on the River Shannon, nor was the Shannon Scheme designed for that purpose. The river level is primarily the result of the amount of rain that falls on the river catchment area. While the ESB uses the water flowing in the river to generate electricity when it reaches Ardnacrusha, the rate at which the water travels to Ardnacrusha is primarily a result of the natural topography of the river and the natural restrictions in the river. It takes many days for water to travel down the Shannon. There have been times when there was flooding in the Callows area south of Athlone yet only enough water in Ardnacrusha to operate the generating station at less than half maximum output.

### 3.8 Does the ESB store water in the Shannon lakes for electricity generation?

ESB does not store water on Lough Allen or Lough Ree for the purpose of electricity generation. Following the construction of the Shannon Scheme ESB was interested in lake levels for electricity generation because Ardnacrusha was the main source of electricity in Ireland in its early days. However, as newer generating stations were built the significance of the lake levels lessened, so that for the last number of decades ESB has not stored water on Lough Allen or Lough Ree for the purpose of electricity generation.

In the case of Lough Derg, ESB diverts most of the water flowing out of Lough Derg down the manmade headrace canal to Ardnacrusha generating station, so this water flow determines that amount of electricity generated. The amount of water that flows is determined by the water level in the lake.

While ESB uses the water flowing in the river to generate electricity when it reaches Ardnacrusha, the rate at which the water travels to Ardnacrusha is primarily a result of the natural topography of the river and the natural restrictions in the river. It takes many days for water to travel down the Shannon.

The primary influence on lake levels is the rainfall on the river catchment. The operations of the gates at Lough Allen and Lough Ree have little or no effect when the Shannon is in heavy flood.

### 3.9 Does the ESB influence the water level in Lough Ree?

The primary influence on the water level in Lough Ree is rainfall on the catchment upstream of Athlone. ESB exercises some influence over the water level in Lough Ree when the river is not in flood with the operation of the sluice gates at Athlone weir, just south of the town. These sluice gates are operated to attempt to reduce the level in Lough Ree towards minimum safe navigation level in the lake in summer; however, this operation must also take account of the water levels in the Callows area downstream of Athlone weir, which can be subject to waterlogging in wet weather.

As the water level in the Callows downstream of Athlone rises, the sluice gates are closed and no further control is exercised on the water levels in Lough Ree. The vast majority of the water flowing from Lough Ree flows uncontrolled over the 170m weir alongside the sluice gates.

In drought periods when there is very low flow in the river, the gates are operated to augment river flow downstream of the Athlone weir.

In summary, ESB can influence the level of Lough Ree during non-flood periods but ESB's operations have no impact on the Athlone area during times of flooding. ESB co-operates closely with Waterways Ireland in the operation of these sluice gates.

### 3.10 How do lake levels at the start of a flood affect the flood?

At the onset of a flood, water flows into the lakes at an increasing rate, but with narrow river channels particularly at the outlet of Lough Ree and Lough Derg the flow of water out of these lakes only increases as the lake levels rise. As more water flows into the lakes, the levels continue to rise until a "balance" between inflow and outflow is achieved. For a large flood, the lake levels will be quite high by the time this balance is achieved, regardless of the lake level at the start of the flood.

Studies have shown that lake levels in Lough Derg and Lough Ree at the start of a flood have negligible effect on subsequent peak flows and peak water levels in the lakes for large flood events.

### 3.11 Does the ESB influence the water level in the Callows downstream of Athlone?

In summer, the Athlone sluice gates are operated to attempt to reduce the level in Lough Ree towards minimum safe navigation level in the lake in summer. This operation must also take account of the water levels in the Callows area downstream of Athlone weir, which can be subject to waterlogging in wet weather and if the flow from Lough Ree is too high. The water level in the Callows is very dependent on rainfall. Also, the Rivers Suck and Brosna flow into the Shannon in the Callows and add significantly to the Shannon flow at these points. These tributaries have a significant impact on water levels in the Callows.

As the water level in the Callows rises, the sluice gates at Athlone are closed. In flood conditions, the sluice gates will always be in the closed position and the vast majority of the water flowing from Lough Ree flows uncontrolled over the 170m weir alongside the sluice gates.

The water level in Lough Derg does not influence water levels in the Callows above Meelick Weir which is near Banagher in Co. Offaly. ESB Ardnacrusha and Gate Movements at Parteen Weir have no effect above Meelick Weir. Increasing the discharge at Parteen Weir will have no effect on water levels in Athlone.

### 3.12 What is the purpose of Parteen Weir?

Parteen Weir, which is downstream of Lough Derg, allows the ESB to divert most of the water normally flowing in the Shannon via a manmade canal to Ardnacrusha for the production of electricity.

ESB diverts as much water as possible through Ardnacrusha generating station for the production of electricity. During large floods, however, the amount of water flowing in the river is greater than the capacity of Ardnacrusha, and in these circumstances the excess water will continue to flow down the “old” course of the Shannon. This is achieved by operating the gates at Parteen Weir. ESB Ardnacrusha and Gate Movements at Parteen Weir have no effect above Meelick Weir.

### 3.13 Can the ESB divert more water through Ardnacrusha during floods?

Ardnacrusha generating station was designed for a water flow of up to 400 cubic metres per second (or tonnes per second). This maximum flow of water that can be put through Ardnacrusha is mainly related to the difference between the water level at the upstream end of the manmade canal and the water level at the generating station itself. To allow more water flow through Ardnacrusha would require a larger water level difference between these points and therefore a higher water level in Lough Derg. Such a higher level in Lough Derg would be unsafe because of the risk of flooding at the lake and also the risk that the water level at various embankments along the river near Parteen Weir would be too high.



### 3.14 What happens at Parteen Weir during times of flooding?

Parteen Weir is a weir with a number of gates built across the River Shannon downstream of Lough Derg. The purpose of Parteen Weir is to enable ESB to divert most of the water flowing in the Shannon via a manmade canal to Ardnacrusha for the production of electricity.

Under normal river flow conditions, most of the water flowing out of Lough Derg is diverted through the manmade headrace canal to the generating station at Ardnacrusha.

When the River Shannon is in flood, Ardnacrusha station is put on maximum output to take as much diverted water as possible. However, when the flow of water exceeds the maximum that can be diverted to Ardnacrusha the excess water will flow down the “old” course of lower Shannon, controlled by the gates at Parteen Weir.

The operation of Ardnacrusha provides a flood alleviation benefit to the lower Shannon by allowing a large percentage of the water to be diverted away from vulnerable areas downstream of Parteen Weir.

ESB Ardnacrusha and Gate Movements at Parteen Weir have no effect above Meelick Weir.

### 3.15 Does the ESB store water at Parteen Weir during floods?

It is not possible to store water at Parteen Weir in a flood situation as there is no capacity there to hold any significant amount of water. If water is not allowed to pass through the weir, then water levels will rise quickly upstream and there is a risk to dam and embankment safety and an even greater risk of flooding.

### 3.16 What prevents the ESB from increasing the water flow at Parteen Weir sooner in advance of a flood?

At the onset of a flood, water flows into Lough Derg at an increasing rate, but with a narrow river channel at the outlet of Lough Derg the flow of water out of the lake only increases as the lake level rises. As more water flows into the lake, the level continues to rise until a “balance” between inflow and outflow is achieved. For a large flood, the lake level will be quite high by the time this balance is achieved, regardless of the lake level at the start of the flood.

If the ESB tries to extract more water at Parteen Weir or Ardnacrusha than the channel allows, the level at Parteen Basin will fall quickly below the minimum stability level of the earthen embankments and this creates a risk of dam failure.

As the water comes from Lough Derg into Parteen Basin, ESB diverts as much water as possible through Ardnacrusha generating station for the production of electricity. During large floods, however, the amount of water flowing into Parteen Basin is greater than the capacity of Ardnacrusha, and in these circumstances the excess water will be diverted down the “old” course of the Shannon.

Studies have shown that lake levels in Lough Derg at the start of a flood have negligible effect on subsequent peak flows and peak water levels in the lake for large flood events.

## 4 Use of Bogs as a Flood Relief Measure

### 4.1 What land does Bord na Móna have in the Shannon Catchment and could this be used to alleviate flooding?

Bord na Móna owns approximately 2% of the land in the Shannon Catchment - 370 square kilometres out of 17,800 square kilometres. This means that its overall impact on the catchment is small and consequently Bord na Móna's ability to contribute significantly to the relief of flooding is correspondingly small. Other peatlands in the catchment cover some 1,630 square kilometres and are used by commercial and private turf and peat producers or are virgin bogs, some of which are NHAs or SACs.

### 4.2 What are Bord na Móna owned lands in the Shannon Catchment used for?

A significant portion of these lands are currently the focus of Bord na Móna's ***Peatlands Climate Action Scheme*** (PCAS) which is focused on carbon storage, reducing emissions and encouraging carbon sequestration. One of the other benefits of the PCAS scheme will be the proposed bog restoration which will provide some NCM measures within the Shannon Catchment. It should be noted however that previous assessments, as part of the Shannon CFRAM studies, have noted that NCM measures and flood storage on Bord na Móna bogs are not likely to have any significant effect in reducing peak flood flows or levels in the Shannon. In addition to securing employment for the 350 employees previously engaged in peat harvesting activities, the PCAS will play an important role in delivering the national policy objective of a carbon neutral Ireland by 2050. The lands are also being used to enhance biodiversity, develop significant renewable energy infrastructure, facilitate future amenity use for local communities and enable the development of other low carbon commercial operations.

### 4.3 What employment does Bord na Móna's activity in the Shannon Catchment support?

Bord na Móna's ***Peatlands Climate Action Scheme***, renewable energy development programme, recycling operations and other operations support more than 1,400 jobs in its area of operations.

### 4.4 Does flooding affect Bord na Móna bogs?

Yes. The abnormal flooding event in 2009 resulted in the flooding of some parts of some of the bogs. Some bogs will also naturally flood in normal winter conditions.

#### 4.5 What is the position regarding other Bord na Móna bogs?

Bord na Móna has some cutaway bogs in the Shannon Catchment that were never in peat production. Many of these will flood naturally during a flooding event. However, in some cases these bogs are not located adjacent to the main Shannon channel (e.g. Lough Boora, Discovery Park near Kilcormac in Co Offaly).

#### 4.6 What would be the impact of flooding Bord na Móna bogs on Shannon flooding levels?

Based on the land surface of Bord na Móna's bogs and its relative size in the overall catchment, it has been calculated that even if all of its bogs in the catchment were flooded, the impact would be minimal. This is estimated, as a maximum reduction, of less than one inch in peak flood levels for either the 2 year, 10 year or 100 year events. Bord na Móna's *Peatlands Climate Action Scheme* will provide some NCM measures within the Shannon Catchment, however previous assessments as part of the Shannon CFRAM studies have noted that NCM measures and flood storage on Bord na Móna bogs are not likely to have any significant effect in reducing peak flood flows or levels in the Shannon.

#### 4.7 How is Bord na Móna's operations on its bogs regulated?

Bord na Móna operates under Integrated Pollution Control (IPC) licences, enforced by the EPA, in managing its bogs and must comply with the conditions of these licences. These include obligations in relation to silt control, stabilisation of cutaway bogs etc. Deliberate flooding of any bogs may breach these licence conditions. In addition, Bord na Móna is in the process of implementing rehabilitation measures across its bogs under the terms of the *Peatlands Climate Action Scheme* scheme. Managed re-wetting of cutaway during the rehabilitation phase must be carried out after significant planning and assessment with regard to suitable water levels and impacts on adjacent land. Relatively deep water could have negative environmental impacts.

#### 4.8 Why does Bord na Móna pump water off of its bogs close to the River Shannon?

Even in normal conditions, many of these bogs require pumping of **rainwater** in order to enable Bord na Móna staff to operate safely. It is important to understand that pumping is designed to deal with rainfall not flooding.

#### 4.9 Do Bord na Móna's activities impact on neighbouring lands?

Bord na Móna is committed to consulting local communities living adjacent to bogs which it plans to restore as part of the ***Peatlands Climate Action Scheme*** (PCAS). The company has decades of experience in rewetting and managing water tables on these bogs and will use its experience to inform PCAS operations in the coming years.

#### 4.10 Is Bord na Móna taking any initiatives to assist with alleviating flooding on the River Shannon?

The proposed bog restoration associated with the ***Peatlands Climate Action Scheme*** will provide some NCM measures within the Shannon Catchment, however previous assessments as part of the Shannon CFRAM studies have noted that NCM and flood storage on Bord na Móna bogs are not likely to have any significant effect in reducing peak flood flows or levels in the Shannon.

Following the cessation of peat harvesting, Bord na Móna expects the flood attenuation capacity of its bogs in the Shannon Catchment to increase. Many will naturally develop as wetlands with flood attenuation capacity. However, while this will help the overall situation somewhat, it will not eliminate the overall risk of flooding in the Shannon Catchment. Flood attenuation from Bord na Móna bogs is likely to have a small impact on the overall risk of flooding in the Shannon Catchment in view of the size of the landbank relative to the total catchment.

#### 4.11 What is the position regarding silt deposits from Bord na Móna bogs?

There is no basis for the view that Bord na Móna is responsible for large quantities of silt deposits in the Shannon Catchment. Silt can originate from any land close to the Shannon. Bord na Móna owns only 2% of the overall land in the Shannon Catchment and less than 20% of the peat lands in the Catchment. For many years Bord na Móna has operated a detailed system of silt control in accordance with its EPA licences. EPA audits have found the Company to be compliant in regard to silt control.

#### 4.12 Why does Bord na Móna not remove silt from the River Shannon?

Bord na Móna has no authority to remove silt from the River Shannon or any of its tributaries.

4.13 Silt deposits from bogs appear to contribute to flooding in the vicinity of Meelick Weir; how has Bord na Móna contributed to this?

In relation to Meelick weir, the nearest bog owned by Bord na Móna is approximately 7 kilometres away from the Shannon. Bogs close to the weir are not owned by Bord na Móna.

## 5 Other Measures to Manage Flood Risk the River Shannon

### 5.1 What is the Government doing to ensure houses are not built on flood plains?

In 2009, with advice from the OPW, DHLGH produced Guidelines on *The Planning System and Flood Risk Management*. Local authorities are required to have regard to the Guidelines, which set out a rigorous approach to flood risk assessment, when considering development plans and assessing planning applications.

Since that time, the OPW has continued to review forward planning documents to help ensure that the 2009 Guidelines are implemented to promote sustainable development. These documents have included the Regional Spatial and Economic Strategies, as well as development and local area plans. The OPW has no role in reviewing individual planning applications.

The OPW has provided DHLGH with maps on the flood extents for the 300 areas studied under the CFRAM Programme. These maps are used for planning purposes.

The OPW are a statutory consultee for the National Development Plan (Project 2040), Regional Development Plans and for County and City Development Plans. In each case, recommendations as to what to consider in the Plan are made to the Planning Authority, reference is made to the Planning Guidelines and relevant sources of data are identified. The OPW also provides a range of data sets to help with the development of plans. As a result of the planning Guidelines, each Plan includes a Strategic Flood Risk Assessment.

The OPW provides input, at the request of An Bord Pleanála, to Strategic Infrastructure and Housing Development. These are also informed by the relevant County and City Development Plan and Strategic Flood Risk Assessment.

### 5.2 Is there a National Flood Forecasting and Warning Service?

Flood forecasting and warning is regarded as an important non-structural flood mitigation measure that allows the general public and local authorities to take more effective preventive action to reduce the impacts of an impending flood.

In 2016, the Government agreed to the establishment of a NFFWS. The five-year development plan for the establishment of this critical service is being implemented by Met Éireann, the OPW and local authorities.

The Service will deal with flood forecasting from fluvial (river) and coastal sources. When established, it will involve the issuing of flood forecasts and general alerts at both national and catchment scales. The Service will be a significant resource to support the management of

flood risk especially in those areas where it is not feasible to protect through major flood relief schemes.

Given the complexities involved in establishing, designing, developing and testing this new service, it is anticipated that it will take at least 5 years before it is operational. In the interim period, existing flood forecasting and warning systems and arrangements will continue to be maintained.

A Steering Group, including representatives from the OPW, DHLGH, Met Éireann and the Local Authorities has been established to steer, support and oversee the establishment of the new service. The Steering Group has prepared and agreed an implementation plan comprising a number of phases including an initial set-up phase and a development and trial phase. Work is progressing on these phases.

### 5.3 Can the River Shannon be used to supply drinking water to main cities and towns?

In 2016, Irish Water published the ‘Final Options Appraisal Report’ which identifies the Preferred Scheme for a new source of water supply for its Eastern and Midlands Region. The Water Supply Project will deliver secure and sustainable water for over 40% of the country’s population up to 2050. This will stimulate and facilitate new home developments and the creation of new jobs, through construction and investment across the Eastern and Midlands Region.

The Water Supply Project involves the sustainable abstraction of water from the River Shannon on the eastern shore of Parteen Basin in Co. Tipperary, with water treatment nearby at Birdhill. Treated water will then be piped 170km to a termination point reservoir at Peamount in County Dublin. Supplies of treated water will be made available to Midlands communities along the route from Parteen Basin to Dublin. The Scheme is the first major new water source upgrade for the Eastern and Midlands Region in over 60 years.

Irish Water has sought, listened to and responded to public feedback at every stage of the project’s development, from assessing the need right through to identifying the preferred scheme. All research, assessments and public consultations have been undertaken in line with international best practice for the identification of need and determination of options. Feedback received during each consultation has been summarised in reports, which are available [here](#).

Flooding has been a recurring theme raised throughout the Water Supply Project consultation process, in particular the potential for flood alleviation. This issue has been examined and the results identify that the proposed abstraction at Parteen Basin will not alleviate the risk of flooding. This is because the abstraction will result in a minimal reduction in water flows in the River Shannon, both in times of low and high water flows. Irish Water’s research and modelling has shown that the proposed abstraction would account for roughly 2% of the average flow and roughly 0.5% of flood peak flows at Parteen Basin, meaning the proposed



continuous abstraction of water for the Water Supply Project would not contribute towards alleviating flooding in the Shannon catchment.

Irish Water is continuing to progress the preparation of a Planning application to An Bord Pleanála for the Water Supply Project, including the preparation of an Environmental Impact Assessment Report and a Natura Impact Statement, following enactment of new Abstraction legislation. Irish Water is currently developing its first National Water Resources Plan (NWRP), the findings of which will be taken into account in the development of the Water Supply Project.

The latest information on the project can be found on the project website [www.watersupplyproject.ie](http://www.watersupplyproject.ie).

#### 5.4 Is protecting the environment balanced with protecting communities from floods?

The Minister for Housing, Local Government and Heritage (DHLGH) has statutory responsibility under the EU Habitats Directive (92/43/EEC) to designate and advise on the protection of habitats and species identified for nature conservation including Natural Heritage Areas (NHA), Special Areas of Conservation (SAC) and Special Protection Areas (SPA). Together the SACs and SPAs are known as the Natura 2000 network.

Natura 2000 sites are important, not only for their scientific significance, but for the natural ecosystem services they provide and the economic activities that they support. For example, inappropriate dredging of rivers or streams, while well intentioned, could cause severe damage to elements of river ecology, including salmon spawning grounds and freshwater fisheries, which are protected under the Directive within certain SACs. This, in turn, could harm the angling industry and undermine local tourism.

The possible implications of any proposed works on the River Shannon need to be properly assessed under the Habitats Directive to ensure they are less damaging or not damaging at all. This approach to flood mitigation works provides a reasonable balance to protect the interests of other property owners and communities downstream, as well as the wider environment.

Natura 2000 sites are important, not only for their scientific significance, but for the natural ecosystem services they provide and the economic activities that they support.

## 5.5 How can forestry help to manage the flood risk on the River Shannon?

The DAFM Forestry Programme supports the creation and management of a wide range of forest types. The Afforestation Scheme, Native Woodland Conservation Scheme and a new scheme, Woodland Improvement: - Environmental Enhancement each promote flood risk management through good forestry practice. These schemes aim to realise a variety of environmental, economic and social benefits. Included in these benefits is flood alleviation when these forests are at sufficient scale and are used strategically as part of a wider response within a catchment to the threat of flooding.

Forests can help reduce the risk of flooding in the following ways:

- trees, and by extension, forests use greater amounts of water than non-forest land thus reducing the volume of flood water at source,
- the soils in forests have higher infiltration rates reducing rapid surface runoff and flood generation,
- the greater hydraulic roughness exerted by trees, shrubs and large woody debris along stream-sides and within floodplains acts as a drag on flood waters, slowing down flood flows and enhancing flood storage, and
- the ability of trees to protect the soil from erosion and interrupt the delivery of sediment via runoff to watercourses helps to maintain the capacity of river channels to convey flood waters downstream and reduces the need for dredging.

Drainage is an important aspect of site preparation at afforestation and reforestation to ensure good root development. A key principle of drainage in a forestry context is to ensure the slow release of water from the site. This principle is incorporated in all the appropriate guidance documents for forestry. There are many ways to achieve this in terms of drain design. For example, collector drains, receiving water from smaller mound drains, should be aligned at a maximum slope of 2 degrees. Also, buffer zones are often used to ensure that drains do not feed directly into watercourses. In this way water drained from the site flows through the buffer zone ensuring a slow release into the watercourse.

The Forest Service of DAFM is Ireland's national forest authority. The Forest Service has published Forestry Standards Manual 2015, the Code of Best Practice – Ireland and the Forest and Water Quality Guidelines that provides guidance on the operational requirements of the various support schemes such as Afforestation Scheme and includes guidance measures to be taken by those planting forests to manage flood risk. Coillte and other forestry companies adhere to these guidelines published by DAFM.

## 5.6 Can Nature-based Catchment Management measures help alleviate flood risk?

NCM measures work by storing or attenuating water in the environment, allowing it to be released slowly either as run-off to rivers and streams or by soakage to the water-table, or by slowing the flow of water along watercourses. By slowing or reducing runoff, flood flows downstream can be reduced.

This is typically achieved by changing land-use practices in the catchment so that soils have a greater capacity to store water or by constructing new storage such as retention ponds or by rehabilitating wetlands. In-channel works and restoring river meanders can also be used to slow the flow.

As well as the potential for flood reduction, the principal advantage of NCM is its ability to achieve ‘co-benefits’. Some of these co-benefits are listed below:

- Many of the measures will improve water quality and create or enhance existing habitats.
- Afforestation and peatland restoration provides carbon storage.
- Some measures can filtrate pollution from runoff.
- Measures that improve soil structure can increase agricultural productivity by reducing the loss of valuable topsoil.
- Improvements to the environment can improve quality of life e.g. river restoration in an urban environment creates a more attractive public amenity.

While pilot and demonstration projects have shown that NCM measures can provide benefits in reducing flood flows in small catchments, there is very limited evidence that they would provide significant benefits in large scale catchments.

NCM can reduce the hazard of more frequent low intensity floods. However, the risk associated with these types of floods is lower than the risk from more extreme floods. This limits the capacity of NCM to reduce risk. The OPW focus on protecting against extreme floods, such as the 100-year flood, as this gives the greatest benefit for capital invested.

NCM have not been widely implemented to date in Ireland, but the OPW is active in pursuing this approach for future application. Current work in this area includes:

- The OPW is co-funding research to examine the effectiveness of soft engineering measures in agricultural lands and forestry.
- The OPW has provided funding to the Inishowen Rivers Trust in Donegal to investigate the use of such measures to reduce flood risk and provide co-benefits.
- The development of capital flood relief schemes now involves a specific requirement to assess the potential for NCM as part of the potential solutions to managing flood risk for a particular community.
- The OPW is also co-chairing with the EPA the Working Group on NCM that is intended to identify approaches that could be used to develop integrated catchment management measures to provide benefits to multiple sectors.

## 6 Role of Regulation Bodies in Flood Risk Management.

### 6.1 How does regulation for fisheries inform flood risk on the Shannon Catchment?

IFI has no statutory remit for the maintenance of river channels but it does have a role in relation to the management, protection and conservation of the fish population which includes water quality. IFI has a strong advisory role and works closely with a range of agencies to ensure that they can achieve their statutory obligations.

IFI takes a proactive approach to fisheries development works and has participated in the development of major flood risk and drainage schemes such as the River Fergus Flood Scheme, Clonmel Flood Relief Scheme, etc. IFI has a long standing and excellent relationship with the OPW and has well established protocols for riverine channel maintenance – the Environmental Drainage Maintenance (EDM) programme and its successor, the Environmental River Enhancement Programme (EREP), have been in operation for almost 20 years.

IFI's policy is aimed at maintaining a sustainable fisheries resource through preserving the productive capacity of fish habitat by avoiding habitat loss, and by mitigating harmful alteration to habitat. Construction or other invasive works, particularly those entailing the installation of new in-stream or riparian structures, have the potential to significantly impact both in the short and long term on the fisheries resources if they are not carried out in an environmentally sensitive manner.

### 6.2 Who owns the fishing rights on the River Shannon?

IFI has a fisheries protection role on the River Shannon, however its direct role in fisheries development is more limited. This is primarily related to the fact that the ESB are the fishery owners and have specific responsibility for management of the river in the context of the Ardnacrusha Hydroelectric Power Generation Station.

IFI has a multi annual lease with the ESB to manage many of the waters of the tributaries entering the River Shannon. This work entails conducting fisheries development works and also protecting and promoting the fisheries. The agreement broadly covers the waters of the catchment of the rivers Inny, Brosna, Little Brosna, Suck, Camlin and a range of other rivers on the Upper Shannon System which flow into Lough Ree, such as the Lecarrow and Cross rivers.

The agreement does not cover the management of the main channel of the River Shannon.

### 6.3 When can instream works take place?

There are significant variations in the timing and duration of salmonid and lamprey spawning activity throughout the Republic of Ireland. To minimise adverse impacts on the fisheries resource, works in rivers, streams, watercourses, lakes, reservoirs and ponds should normally (except in exceptional circumstances and with the agreement of IFI) be carried out during the period July to September. The appropriate ‘window’ for instream works can vary depending on the nature of the fishery resource concerned and the existence of other factors such as catchment or sub-catchment-specific Bye Laws and Regulations.

### 6.4 Can emergency works take place in the closed season?

There is provision for conducting emergency works and the instrument used in this case is the Local Authority (Works) Act 1949 which expressly provides for Local Authorities to execute works affording relief or protection from flooding, landslide, subsidence, and similar occurrences.

This legislation provides for an exemption from the Fisheries Acts however Section 6 stipulates that the protection of fisheries should be taken into consideration when executing works. This currently takes the form of a method statement advised by IFI.

A derogation application may be applied for through the Department of Environment, Climate and Communications (DECC) which is reviewed by IFI. In many cases, IFI consults with the relevant local authorities prior to a derogation application to ensure that any concerns relating to fisheries can be resolved.

### 6.5 What are the key European Directives applicable to the Shannon?

#### 6.5.1 Water Framework Directive

The EU WFD is an important piece of environmental legislation which aims to improve our water quality. It applies to rivers, lakes, groundwater, estuaries and coastal waters. More information on the WFD can be found on [www.catchments.ie](http://www.catchments.ie).

The EPA is responsible for coordinating the monitoring, assessment and reporting on the status of water bodies nationally. The EPA itself is involved in water quality monitoring, assessing trends and changes, determining which waterbodies are at risk of not meeting their objectives and identifying what could be causing this. It also drafts environmental objectives and measures for each water body. Summary monitoring and assessment information can be found on [www.epa.ie](http://www.epa.ie) and [www.catchments.ie](http://www.catchments.ie).

All surface water bodies surveyed have been assigned an ecological status class (High, Good, Moderate, Poor or Bad) and these results have been included in the [River Basin Management Plan \(RBMP\)](#).

The EPA is responsible for maintaining the national register of all water abstractions that are greater than 25 m<sup>3</sup>/day (25,000 l/day). The EPA also manages data coming from a series of local authority river flow and water level gauges within the Shannon Catchment with a focus on monitoring low flows. Information and hydrometric data are available on [www.epa.ie/water/wm/hydronet/](http://www.epa.ie/water/wm/hydronet/).

The Local Authority Waters Programme (<http://watersandcommunities.ie/>) coordinates the efforts of local authorities and other public bodies in the implementation of the River Basin Management Plan, and supports local community and stakeholder involvement in managing our natural waters, for everyone's benefit.

IFI has been assigned responsibility by the EPA for delivering the fish monitoring element of the WFD in Ireland.

Waterways Ireland has been assigned responsibility by the EPA for monitoring water quality on the canals in Ireland.

### 6.5.2 Waste Management Act

The EPA is responsible for the authorisation of all large scale waste disposal and recovery activities. Local authorities are responsible for the authorisation of all other (usually smaller scale) waste activities. The EPA's Environmental Licensing Programme will, when asked, make a determination as to the correct form of authorisation for any individual proposed waste activity. The deposition of waste dredge spoil on land is a waste activity. There are some exemptions from waste authorisation available (namely and for example Section 3 of the Waste Management Act) but these are restrictive in their scope. A query as to the appropriate form of authorisation for any individual deposition site can be directed to the EPA's Environmental Licensing Programme via [www.epa.ie](http://www.epa.ie).

### 6.5.3 Habitats Directive

The NPWS is the competent authority for implementation of the Habitats Directive. The Directive is transposed into Irish law by Statutory Instrument S.I. 477 of 2011. In this S.I., the Minister for Housing, Local Government and Heritage can or, with his/her consent, other Ministers can appoint authorised officers in respect of these regulations.

Notwithstanding that, IFI have not yet been formally appointed as Authorised officers under these regulations to satisfy Ireland's reporting obligations under Article 17 of this Directive. IFI has a programme which monitors the status of the Annex II listed species. These include Salmon, Shad species (Allis, Twaite, Killarney), Lampreys (River, Brook, Sea) and Pollan.

All of the in-stream development works undertaken by IFI are conducted within the context of the Habitats Directive regulations. IFI has established an ongoing working relationship with the NPWS in relation to supporting and advising in relation to the fish species identified in the Habitats Directives.

#### 6.5.4 Eel Regulations

The EC Regulation (Council Regulation 1100/2007) for the recovery of the eel stock required Ireland to establish eel management plans for implementation in 2009. Under the Regulation, Ireland should monitor the eel stock, evaluate current silver eel escapement and post-evaluate implemented management actions aimed at reducing eel mortality and increasing silver eel escapement.

The initial Irish Eel Management Plan submitted to the EU in 2009 outlined the main management actions aimed at reducing eel mortality and increasing silver eel escapement to the sea.

The four main management actions in the Irish Eel Management Plan were as follows:

- Cessation of the commercial eel fishery and closure of the market.
- Mitigation of the impact of hydropower, including a comprehensive trap and transport plan to be funded by the ESB.
- Ensure upstream migration of juvenile eel at barriers.
- Improvement of water quality.

Under the EC Regulation (EC No. 1100/2007), each Member State was required to report to the Commission initially every third year until 2018 and six years thereafter.

The third report was submitted in 2018 and Ireland is due to report to the European Commission again in 2021 following an agreement at the Fishery Council Meeting in January 2018 to continue the 3 year reporting cycle ‘until there is a strong scientific evidence of recovery signs for the eel population across Europe’.

## 7 Relocation

### 7.1 Is there a scheme to relocate homeowners where properties have flooded severely?

In April 2017, the Government agreed the administrative arrangements for a once-off Voluntary Homeowners Relocation Scheme for those primary residential properties that flooded as a result of the flood event between 4<sup>th</sup> December 2015 and 13<sup>th</sup> January 2016. This is a national scheme of humanitarian assistance targeting aid at those worst affected properties for which there are no alternative feasible engineering solutions.

The OPW, working with the local authorities, identified homes that could potentially be eligible for the Scheme. In addition, homeowners had an opportunity to express an interest in being considered for the Scheme following its publication on the OPW website.

To date, 27 offers of humanitarian assistance for relocation have been made to homeowners. Engineering solutions have been identified to potentially protect a further 35 homes from future flooding of a similar magnitude to that which occurred as a result of the event in 2015/16. Work is continuing by the Local Authorities to explore possible engineering solutions for 23 other homes that were affected as a result of the flooding event.

### 7.2 What about farmyards?

Following the serious floods during the winter of 2015/2016, the Department of Agriculture, Food and the Marine (DAFM) instigated a feasibility study for a scheme for the voluntary relocation of farmyards. The study recommends that, in line with the Voluntary Homeowners Relocation Scheme, only farmyards flooded or caused to be flooded by the weather event between the 4<sup>th</sup> December 2015 and 13<sup>th</sup> January 2016 would be considered for relocation. It found that remedial works could be carried out on some farmyards that would provide effective flood proofing in situ.



## 8 Guidance for Homeowners and Landowners

### 8.1 Is there guidance on how to prepare for a flood event?

The OPW has published guidance to help homeowners, businesses and farmers to plan and prepare to protect themselves and their livelihoods, and reduce the impact, in the event of a flood. It includes contact information for organisations that may be of assistance should this arise. This information is available at [www.flooding.ie](http://www.flooding.ie).

The Government's 'Be Winter Ready' campaign also provides valuable advice for dealing with severe weather events including flooding. Further information can be found at [www.winterready.ie](http://www.winterready.ie).

### 8.2 Are there works that I can do myself to help manage flooding on my lands?

The Local Authorities and the OPW have a statutory duty to maintain their respective completed Arterial Drainage Schemes in proper repair and in an effective condition. These Arterial Drainage Schemes and associated maintenance do not cover all watercourses throughout the country, including those that pass through or near land owned by other statutory and non-statutory bodies.

The OPW has developed a guidance document [\*Living Near Watercourses: A Guide to the Rights and Responsibilities of Landowners\*](#) which is aimed at owners of land or property which is located on the banks of a watercourse – both natural and artificial. Such landowners are commonly termed riparian owners. Riparian owners need to be aware of their rights and responsibilities in relation to watercourses. This online guidance document provides some practical advice and assistance for the management of watercourses.

## 9 Flood Insurance

### 9.1 I can't get flood insurance for my house, what is the Government doing to address this?

The Government's policy on flood risk insurance focuses on the development of a sustainable, planned and risk-based approach to dealing with flooding problems.

To achieve this aim, there is a specific focus on:

- Investing almost €1 billion in flood relief measures over the lifetime of the National Development Plan 2018-2027, which should help to increase the availability of flood insurance cover, and
- Maintaining channels of communication between the OPW and the Insurance industry in order to reach a better understanding about the provision of flood insurance cover following the completion of flood defence schemes.

The OPW provides relevant information and data to Insurance Ireland on completed OPW flood defence schemes to facilitate, to the greatest extent possible, the availability to the public of insurance against the risk of flooding. To date, the OPW has provided data on 18 completed schemes to the Insurance industry.

The OPW and the Department of Finance meet with Insurance Ireland, the representative body for the Insurance industry, on a Quarterly basis to discuss the transfer of data in relation to completed flood relief schemes. The OPW has informed the Insurance industry that its Flood Maps cannot be used for commercial purposes.

The provision of insurance cover, the level of premiums charged and the policy terms applied are matters for individual insurers. Insurance companies make commercial decisions on the provision of insurance cover based on their assessment of the risks they would be accepting on a case-by-case basis.

Queries or complaints on insurance related matters may be directed to Insurance Ireland's Insurance Information Service (01 676 1914 or [feedback@insuranceireland.eu](mailto:feedback@insuranceireland.eu)). In addition, the Financial Services Ombudsman (1890 88 20 90) deals independently with unresolved complaints from consumers about their individual dealings with all financial service providers.