Shared Service Agreement

2018-2022

Office of Public Works

and

Inland Fisheries Ireland

SCOPE

This Service Level Agreement is between the Office of Public Works, Flood Risk Management Business Unit and Inland Fisheries Ireland, Department of Communications, Climate Action and Environment. This Agreement is not legally binding and where different interpretations are construed from the text, it is not appropriate to scrutinise the text as in legal argument, but shall be taken at face value in the ethos of partnership where both parties attain mutual benefits for their efforts. This Agreement has been developed in the spirit of collaboration and actions prescribed for either party are subject to available staff and monetary resources and are in no respect obligatory.

PURPOSE

The purpose of this Agreement is to build on existing good practices and develop a framework to support a high level of collaboration between OPW and IFI. Currently in the State, OPW and IFI have many strong working relationships nationally across multiple staff levels which vary from formal meetings through to informal on-site discussions. This has

fostered high levels of understanding of fishery requirements within flood risk management activities. There is a long history of Fisheries working with OPW to evolve more environmental friendly Arterial Drainage Maintenance activities, initially as the Environmental Drainage Maintenance or EDM programme and in latter years this has developed into the Environmental River Enhancement Programme (EREP) which is a proactive positive programme to maximise environmental gain whilst still maintaining the statutory drainage objectives.

OPW is the lead statutory body for Drainage Maintenance and Flood Risk Management (FRM) in the State. IFI is the lead statutory body for conservation, protection, management, marketing, development and improvement of inland fisheries and sea angling resources in the State. Both organisations have obligations to implement European and National legislation and policy. Flood risk management operations and issues are widespread and are likely to increase in the future due to anthropogenic pressures and climate change. These same pressures will make further demands on nature conservation, including fisheries, leading to potential conflict between these sectors. However, experience to date demonstrates that these sectors have significant potential to work in partnership and turn scenarios from likely environmental loss, to minimise potential fisheries impact and in many cases excel to achieve positive environmental gain.

AGREEMENT DURATION

- Envisaged that this Shared Service Agreement will be active for five years, 2018 -2022 inclusive.
- This Agreement can be amended or withdrawn subject to agreement by both parties.

This Shared Service Agreement is seen as a mechanism supporting the Government Policy "Transforming Public Services" as it promotes collaborative working and will strive for higher levels of effectiveness and efficiency in legislation implementation.

SHARED ACTIONS FRAMEWORK

Both parties to the agreement are working towards a common goal of ensuring that:

(a) Further research in respect of aquatic species and habitats is highly desirable and will

require resources. A partnership approach will be taken to beneficial studies/ research to minimise resource requirements for all parties. Knowledge developed will be for the benefit of national nature conservation.

(b) Appropriate river enhancement works on arterial drainage channels are an implementation tool for Ireland, by assisting to implement Hydromorphology Measures under the Water Framework Directive.

(c) The joint OPW & IFI investigations and works programme have potential to achieve much positive river corridor gain, for habitats and for species (including fish) that would not otherwise proceed and has potential to act as a platform to develop these skills in the state and for IFI to expand out to other stakeholders in the future.

(d) There is an ethos of collaboration between both parties to maximise the efficiency and effectiveness of their respective resources in achieving their requirements.

(e) Current and future Flood Risk Management activities offer opportunities for synergistic environmental gain for fisheries and the river corridor environment. Opportunities are to be identified, requirements agreed and where practicable, undertaken as part of the OPW operations.

(f) Promote parallel cross-departmental catchment mechanisms that could be utilised to further support the Floods Directive catchment approach or river enhancement works such as: mechanisms for native riparian tree planting, mechanisms for riparian fencing and livestock drinking facilities, other mechanisms which take a holistic approach to catchment and associated flood risk management.

ENVIRONMENTAL RIVER ENHANCEMENT PROGRAMME

Description of the EREP

The primary output of this Agreement is the Environmental River Enhancement Programme (EREP). The present iteration of this programme will focus on

- a series of agreed scientific investigations of the river corridor;
- the impacts of arterial drainage maintenance on the biota and habitat within the corridor;
- the potential for current and to-be developed environmental strategies to provide environmental gain while securing adequate channel conveyance;
- all the above to be undertaken in the context of the Water Framework Directive and the compliance requirement of this Directive – to ensure that all waters will attain GOOD ecological status by a specified date.

These outputs are carried out on drained channels with associated monitoring to measure success. The programme also envisages a strategic oversight role for the IFI R&D personnel contributing to EREP in regard to a new site-auditing process, staff training, and on-going improvement of environmental performance of drainage maintenance operations. The programme is carried out by IFI R&D and OPW's Arterial Drainage Maintenance Service.

Drainage channels due to their man-made nature have less diversity with more extensive lengths of uniform depths, widths and gradients. Enhancement involves the increase of structural diversity of the river corridor to create a more natural physical form and this is achieved through a range of enhancement measures such as construction of various instream stone or timber structures (using on-site or imported materials), excavating pools and building riffles, re-profiling the channel cross-section or longitudinal profile, fencing of river banks to allow vegetation regeneration etc. that are appropriate to the hydromorphological condition of the channel. Reintroduction of more natural structural diversity within the river corridor may facilitate an increase in the species richness in the river and has a positive effect on the whole food web surrounding the river corridor which supports all the associated habitats and biota. Enhancement works also include remediation of fish barriers and this has positive effects on the access for spawning fish and other aquatic species for large distances upstream. It can also facilitate sediment transport which is part of

natural channel process.

It is proposed that any requests from interested parties, such as local angling or community groups, for river enhancement works would require that the status of the fish community and the hydromorphology of the channel be surveyed in advance of any works in order to assess status, in the context of WFD. A limited series of such surveys could be conducted by IFI annually under EREP.

The division between Capital Enhancement and Enhanced Maintenance is fluid. Capital Enhancement works are more resource intensive and slower to construct, while Enhanced Maintenance is less resource intense and faster to construct. Where works predominantly consist of an Enhanced Maintenance approach, but the importation of some material would be highly beneficial, subject to budgets this should proceed. Similarly, some Capital Enhancement works may be able to reduce the expected material costs where the locally available material is more suitable than originally expected. For the purposes of measurement, the predominant approach should dictate the category the works to be recorded. It is envisaged that OPW would continue to pursue vigorously the implementation of its environmental maintenance guidance. A robust implementation of this has potential to achieve a substantial degree of hydromorphological improvement or gain in channels. It is feasible that the IFI team could undertake pre- and post- maintenance hydromorphology assessments (via RHAT surveys, for example) in order to assess the degree of uptake of the advanced elements of the environmental maintenance strategies.

Context for the EREP

The main focus of the EREP is to achieve enhancement and environmental methods of work to maximise the environmental quality of the Irish drained river corridor, while balancing the channel's drainage outfall and flood conveyance capacity, which is carried out in compliance with the maintenance provisions of the Arterial Drainage Acts 1945 and 1995. It is an implementation tool for Ireland that assists comply with the WFD legislative obligations for Hydromorphology. A suite of monitoring is important to demonstrate the environmental gain due to these works and this gives EREP works a sound scientific foundation. In parallel, it allows Government to clearly demonstrate compliance with the National Biodiversity Plan

(NBP) 2017-2021, 'Target 4.3.2.' arterial drainage maintenance will be assessed for its implications for biodiversity, and 'Indicator 1: Inclusion of biodiversity considerations in drainage programs'.

EREP is a proactive project and may represent best international practice in terms of how public authorities can set up a multi annual coordinated approach to river improvement works and implement the same very efficiently in tandem with statutory operations. It demonstrates how two public authorities working in partnership can deliver environmental gain, while still balancing the drainage / flood relief functions for citizens, and achieve more that the organisations could working individually. EREP is strategically aligned with the European legislation through the WFD, is a tool for Ireland in implementation of Hydromorphological Measures and puts Ireland into a strong position for implementation of these demanding Measures. The EREP is also strategically aligned with national policy in terms of the NBP and is directly relevant to the indicator to demonstrate inclusion of biodiversity improvements in drainage programmes. Several of the large OPW drainage schemes lie within catchments designated as Natura 2000 sites under the EU Habitats Directive and the EREP strategies directly support the Habitats Directive implementation with environmental gain to certain qualifying interests.

Evolution of the EREP

The impacts of channel maintenance on the biota and habitat in drained rivers has been examined in studies by OPW and IFI since 1990 (Environmental Drainage Maintenance or EDM studies). These have informed guidance documents and training delivered to OPW field staff and form the basis of the OPW's current environmental guidance on channel maintenance. In addition, there has been a long history of positive river enhancement work undertaken between IFI and OPW. This goes back to the Tourism Angling Measures (TAM) in the 1990's and many other small isolated works being completed on an *ad hoc* basis over the intervening years. These two strands – environmental maintenance and enhancement - combined to form part of the EREP 2008-2012 which was the first formal river enhancement programme in partnership between IFI and OPW. Many specialised skills and knowledge have being developed and are expanding out to many staff, much baseline monitoring has been established, and both organisations are now becoming highly competent in the

implementation of river enhancement works.

An associated scientific investigation programme formed part of the EREP, as had been the case with EDM, where specific topics were investigated and management options and strategies brought forward.

Deliverables 2018-2022

Senior OPW and IFI personnel met in spring 2018 to identify the framework for future shared activity within the EREP. The following broad heads were agreed upon as underpinning shared actions within EREP over a 5-year framework:

- the EREP study has a significant institutional value to both OPW and IFI working together in a project with strongly shared interests
- the Water Framework Directive, with the requirement to improve ecological quality of rivers and water courses to Good or High status, underpins any EREP activities
- the principal relevant element in WFD, for the EREP, is that of hydromorphology – with an emphasis on longitudinal connectivity and on the morphology of the instream and riparian zones
- Studies identifying and addressing deficiencies in these areas of hydromorphology within drained channels are seen as highly relevant to EREP
- IFI's work within EREP would focus on scientific studies that would inform management decisions and there was agreement on the broad heads of this topic
- The outcomes of scientific studies, in turn, may provide a platform for wider delivery of appropriate measures in drained channels with particular hydromorphology characteristics
- IFI should provide strategic oversight to OPW in regard to particular topics such as (a) review of auditing processes, (b) review of the environmental guidance for maintenance and (c) contributing to a 3-tier series of annual meetings (ACEs and Regional Engineers; Resident engineers and technicians; Foremen's meeting)
- Information generated by IFI within EREP should be available to OPW as a series of GIS-usable layers to permit OPW engineers and foremen to review such relevant information in planning for channel maintenance

- It is desirable to have input from both IFI Regional and IFI R&D staff, in regard to OPW flood schemes design and this will be trialled under the EREP
- Restructuring of staffing and of costs of EREP would be required within IFI with an envisaged staffing of two persons dedicated to EREP to be recruited by IFI. A proposed budget was to be developed by IFI for review by OPW

Specific elements of a scientific programme in EREP 2018-2022

- River connectivity: Studies here to identify barriers in drained channels, via the IFI desk- and field methods, with a view to addressing a sub-set of these through routine maintenance procedures. Such works would constitute a valid use of monies allocated to EREP by OPW for 'Capital Works'. Studies to include more detailed barrier/fish passability assessments on large OPW barriers such as weirs, gravel traps e.t.c. using the UK SNIFFER *(Scotland and Northern Ireland Forum for Environmental Research*) and the French ICE (*Information sur la Continuité Ecologique*) methodologies.
- Generating Environmental Quality Ratio (EQR) Scores for fish community and hydromorphology within OPW catchments. Requirement to generate a GIS-layer of this material for OPW.
- Instream and Riparian works: Agreed need to generate fish and hydromorphology EQR scores in advance of any proposed enhancement or restoration works to identify actual need for works and to specify works, if required, that would be appropriate to the hydromorphological character of the channel. This is relevant in regard to any IFI RBD or local community initiatives, wishing to undertake works in drained channels.
- The scientific evaluation of the performance and delivery from instream and riparian enhancement works may provide a blueprint for further roll-out of these measures in OPW catchments. The matching of enhancement measures to channel must be undertaken in a holistic manner, dependant on the character and needs of the catchment and on the channel's hydromorphological characteristics.
- Specific scientific studies including trial studies, pre- and post- monitoring etc. on a range of elements including -
    - On-going investigations of maintenance impacts on lamprey and crayfish

- Ground truthing and enhancement feasibility-testing of Hydromorphological Measures under WFD and progress resultant enhancement works
- Riparian measures to address climate change scenario
- Meander re-connection and biodiversity gain
- Tree management and use of thinned material for instream structures
- Continued development of a long-term monitoring portfolio of sites where maintenance and/or enhancement works were undertaken under previous EDM study; sites of river enhancement works under TAM programme; pre-arterial drainage studies - over time periods extending to 35 + years.

Reports (2018 – 2022)

- Issue an Annual Report at the end of each year, concisely setting out progress on the deliverables.
- Issue an overall 5-year review at the end of 2022, setting out in detail the overall progress on the deliverables and associated findings, presenting the overall biodiversity and hydromorphological gains and make recommendations for any changes in a future enhancement programme.
- IFI will, where appropriate and relevant, produce a number of peer-review publications relating to EREP which in some cases may be with OPW as co-authors. These publications will help increase awareness of the EREP and further public and research access to the information developed under the programme.

Resources (2018 – 2022)

- OPW's EREP resources in terms of management staff, operational staff, plant and materials are integrated with the resources of statutory Arterial Drainage Maintenance service. IFI's EREP resources are applied through a combination of statutory fisheries functions and specific project staff. Both parties also allocate staff resources to ongoing interactions.
- An envisaged staffing of two persons dedicated to EREP to be recruited by IFI. A proposed budget was to be developed by IFI for review by OPW's senior engineers and it is envisaged that EREP costs for IFI in a full year would be in the order of €160,000. Monies would be invoiced quarterly and the sum would cover salaries,

overheads, travel & subsistence, vehicles, tools and equipment etc.

- IFI will provide, at its own cost, scientific supervision to the IFI staff, at appropriate senior R&D level. The IFI senior person(s) will also input at a strategic level along with senior OPW personnel to oversight of a range of measures including the auditing process of driver implementation, training protocols in environmental measures, contribution to a series of annual meetings etc
- Staff from OPW's Environment Section will work directly on EREP with IFI project staff to assist delivery of the programme.
- If specialised skills are required for the project that are not available from the EREP project team assigned, purchasing in this expertise through specialists can be considered where deemed a cost effective approach. Associated cost will be the responsibility of the OPW with approval subject to budgets.

Specification of Deliverables (2018 – 2022)

River connectivity: IFI has been funded by Dept of Housing, Planning and Local Government to develop a National Barriers Programme over the period 2018-2021. The brief includes development of protocols, an extensive survey programme, creation of a national database and prioritisation of structures and of mitigation strategies. This programme is relevant to OPW, with the EREP studies providing an opportunity to input to the national layer. IFI is currently refining its protocols and data collection forms and any revised protocols will be used in barrier data collection in EREP studies during 2018-22. During 2017, the protocol was implemented in the lower Inny catchment and it is planned to complete the Inny catchment for barrier assessment during 2018.

IFI has been using the SNIFFER coarse resolution barrier passability tool for some years to assess larger barriers or those in which mitigation measures are proposed. Seven such structures were surveyed under EREP during 2017 and further structures will be thus surveyed going forward. The protocol will be applied to any structures in OPW schemes where mitigations are proposed. Post-works surveying is also scheduled.

OPW identifies the national focus on barriers in rivers, as highlighted in the recent National

River Basin Management Plan, as being highly pertinent to it. OPW is of the view that barrier surveys by IFI, undertaken in OPW catchments, may highlight issues and scenarios that OPW may be able to address directly as Capital Works exercises or in the course of routine channel maintenance. A GIS layer of barriers in any catchment enables the OPW planning out maintenance to identify in advance that there may be barriers issues to be addressed. A preliminary visual inspection may identify measures to address the problem and these can be incorporated into the channel works programme. In this way OPW can contribute to easement of hydromorphology issues in the course of its normal channel works. Extensive use of this strategy can have benefit in contributing to easement of pressures relating to barriers at a national level.

Assessing Water Framework Directive status in OPW catchments: The WFD has a requirement that water quality, as determined by a range of ecological quality elements, should reach GOOD status as a minimum and that HIGH quality sites should be retained at this level. The timed electric fishing programme that has been undertaken within EREP has been structured in a way that surveys an individual OPW scheme catchment-wide in any one year. Each survey examines the fish community composition at each location sampled and this allows for status assessment to be made at each site. An EQR – Ecological Quality Ratio – is generated in respect of the fish community at each site and the EQR is scored on a 5-level basis – HIGH, GOOD, MODERATE, POOR and BAD.

In addition to the fish EQR scores the EREP team has been undertaking hydromorphology scoring for WFD at locations that encompass each fishing site. The team uses the RHAT protocol to assess the hydromorphology and this in turn permits the generating of hydromorphology EQR values. In this way a series of 'paired' fish and hydromorphology EQR values is generated for a series of sites within each OPW scheme. Such data can be geo-referenced, permitting OPW to identify areas of both satisfactory ecological quality (HIGH and GOOD sites) as well as sites of reduced ecological quality (less than GOOD). This has the potential to focus any instream and riparian works to areas where such works may bring about an improvement in EQR. The instream and riparian measures may consist of Capital Works approaches, where materials may be imported, or may consist of Enhanced Maintenance approaches where the machine driver team can effect changes by

implementing specific measures from their environmental protocol, particularly those relating to over-digging and manipulating the cross-section and / or the longitudinal profile.

This paired EQR data collection strategy will be continued over the 5-year period 2018-2022 with the 2018 proposal involving a survey of the upper Inny basin, completing the survey for this OPW scheme, commenced in 2017. In the subsequent 4 years, it is envisaged that the fish-RHAT surveys for EQR will address other larger catchments where a two-year approach may be required e.g. Brosna, Corrib-Clare.

Selection of instream and riparian measures and their use in improving EQR scores: The measure described previously will provide an evidence base for determining the appropriateness or otherwise of undertaking hydromorphological works in specific locations to bring about improved EQR scores.

Requests or proposals to undertake instream and riparian works in OPW catchments will be subject to test, in advance, to assess appropriateness of interventions and, where interventions are proposed, to select the measures most suited to address the identified shortfall in ecological quality. In effect, this means that proposals from 3rd parties to undertake instream and/or riparian works should be tested in advance to assess appropriateness of interventions and the most relevant measures, if works are to proceed. The works should lead to improved EQR scores, as assessed by fish and RHAT scoring. OPW and IFI are agreed on this strategy. It will inform OPW-IFI approaches in addressing Capital Works and Enhanced Maintenance priorities. It will also inform all requests to OPW to undertake such works, from 3rd parties such as angling clubs, community groups etc. It is understood that IFI, in undertaking surveys in this context could handle a small number of cases annually.

Specific focused scientific studies: Many of the measures included in the OPW's environmental guidance on maintenance were the outcome of specific studies. OPW's interest is in establishing factual information in regard to negative impacts of measures as well as quantifying positive outcomes. OPW also wishes to make scientific outcomes available in the public domain. Such an approach is consistent with IFI's R&D unit and OPW

wishes to continue with agreed specific studies in the next iteration of EREP.

Among the focused scientific studies considered pertinent to the EREP 2018-2022 are:

- On-going investigations of maintenance impacts on lamprey and crayfish. These have been reported on in EcIA documents published on the OPW website and in a peer-review paper. OPW require to retain this topic as a forefront one due to the potential for adverse impact of maintenance on these Habitats Directive taxonomic groups and the imperative of seeking mitigation measures to reduce adverse impact to a minimum.
- Ground truthing and enhancement feasibility testing of Hydromorphological Measures under WFD and progress resultant enhancement works. The focus on any instream and riparian measures aimed at river 'restoration' must be to undertake works that are appropriate to the hydromorphology of the target channel. Control – Experimental trials on specific measures require to be undertaken in the period 2018-22. One such involves thinning out excessive tree cover and using some of the removed tree material as soft-engineering low-level paired- or single- structures to create localised acceleration of flows, localised backwaters, woody habitat in the channel – all facets of improved or diversified hydromorphology
- Riparian measures to address climate change scenarios. Global warming will lead to increased water temperature in rivers. This is particularly problematic for salmon and trout, being cold-water species. Fencing measures can permit instream growth of vegetation and this in turn can reduce the insolation impact and reduce heating effect. Similarly, tree retention, fencing and planting can also modify adverse impacts of direct sunlight on waters. Management strategies for tree cutting or thinning can also assist in reducing direct sunlight impact into channels. It would be important to quantify the impact and value of these measures and thereby contribute to the management requirements already identified by IFI in a recent peer-review paper emerging from EREP studies.
- Meander re-connection and biodiversity gain. The potential of this measure was flagged previously in EREP and a desk-study in 2017 developed criteria for selection of candidate sites and also compiled a list of possible sites for this topic, spread across the three OPW regions. This measure requires field surveying to examine

feasibility, discussion with landowners at candidate sites and a programme of pre-works monitoring and this should be commenced in 2018. Successful completions and lessons learned could be carried forward to other sites to be re-connected in the period 2019-2022.

- Continued development of a long-term monitoring portfolio of sites where maintenance and/or enhancement works were undertaken under previous EDM study; sites of river enhancement works under TAM programme; pre-arterial drainage studies - over time periods extending to 35+ years. This work was commenced during an earlier phase of EREP and is viewed by both OPW and IFI as being highly valuable. A significant shortcoming of many monitoring programmes, undertaken as pre- and post- impact studies, is the short period of time generally available for monitoring following an intervention or impact. This is commonly alluded to in scientific literature. Therefore, the opportunity to develop and maintain a long-term monitoring record for specific scenarios would be highly valuable.
    - By way of example, in 2017 the series of sites on the River Clodiagh (Brosna CDS) were examined a full 20 years after the initial studies, which followed the impact of a radical maintenance operation on the fish, physical habitat and riparian cover. While the riparian cover had recovered dramatically and a substantial fish population was present, the trends in the fish population structure pointed to problems with the instream habitat. The physical measurements taken over the various years of monitoring pointed to an absence of development of diversity in instream water depth. Channel width remained very stable but there was little development of pool and riffle areas and a lack of niche cover for trout in low flow conditions. This scenario had not developed within the 20 years of monitoring.

Public Sharing of Data

An underpinning philosophy is that environmental data funded by public money should be made available for the benefit of other public authorities or the general public as it can reduce their costs for environmental assessments. It is acknowledged that this data is not to be used for formal publication by a third party and IFI and OPW should have the first call on using the data to develop scientific journal papers or other publications.

Signed on behalf of: _____ **Date** 26/06/18

Engineering Services, OPW

John Curtin, Director

Signed on behalf of: _____ **Date** 26/06/18

Inland Fisheries Ireland

Ciaran Byrne, CEO