

Strategic Environmental Assessment Statement

Blackwater (Munster)

Strategic Environmental Assessment Statement

For

River Basin (18) Blackwater (Munster) Flood Risk Management Plan

Areas for Further Assessment included in the Plan:

<i>Ceann Toirc</i>	<i>Kanturk</i>
<i>An Eaglais</i>	<i>Aglish</i>
<i>An Baile Dubh</i>	<i>Ballyduff</i>
<i>Mainistir Fhear Maí</i>	<i>Fermoy</i>
<i>Cillín an Chrónáin</i>	<i>Freemount</i>
<i>Mala</i>	<i>Mallow</i>
<i>Ráth Chormaic</i>	<i>Rathcormac</i>
<i>Tulach an Iarainn</i>	<i>Tallow</i>
<i>Eochail</i>	<i>Youghal</i>

Flood Risk Management Plans prepared by the Office of Public Works 2018

In accordance with

European Communities (Assessment and Management of Flood Risks) Regulations 2010 and 2015

Purpose of this Report

As part of the National Catchment-based Flood Risk Assessment & Management (CFRAM) programme, the Commissioners of Public Works have commissioned expert consultants to prepare Strategic Environmental Assessments, Appropriate Assessment Screening Reports and, where deemed necessary by the Commissioners of Public Works, Natura Impacts Assessments, associated with the national suite of Flood Risk Management Plans.

This is necessary to meet the requirements of both S.I. No. 435 of 2004 European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (as amended by S.I. No. 200/2011), and S.I. No. 477/2011 European Communities (Birds and Natural Habitats) Regulations 2011.

Expert Consultants have prepared these Reports on behalf of the Commissioners of Public Works to inform the Commissioners' determination as to whether the Plans are likely to have significant effects on the environment and whether an Appropriate Assessment of a plan or project is required and, if required, whether or not the plans shall adversely affect the integrity of any European site.

The Report contained in this document is specific to the Flood Risk Management Plan as indicated on the front cover.

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The OPW also acknowledges the participation of members of the public, representative organisations and other groups throughout each stage of consultation.

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1 Introduction

1.1 Background and Context

The national Catchment Flood Risk Assessment and Management (CFRAM) study commenced in Ireland in 2011. The CFRAM study is central to the medium to long-term strategy for the reduction and management of flood risk in Ireland. The study delivers on core components of the National Flood Policy, adopted in 2004, and on the requirements of the EU 'Floods' Directive. The Irish CFRAM study is being carried out in parallel with similar studies across the European Union.

The OPW is the lead agency for flood risk management in Ireland and is the national competent authority for the EU Floods Directive. OPW works in close partnership with all Local Authorities in delivering the objectives of the CFRAM study.

As part of the CFRAMs study, the OPW is required to prepare a set of Flood Risk Management Plans, and associated Strategic Environmental and Habitats Directive (Appropriate) Assessments. The plans set out the proposed strategies, measures and actions to achieve the most cost-effective and sustainable management of existing and potential future flood risk while minimising the potential impact on the receiving environment and taking full account of other plans, objectives and legislative requirements.

1.2 Purpose of this SEA Statement

This Strategic Environmental Assessment (SEA) Statement has been prepared as part of the SEA for the Flood Risk Management Plan (FRMP) for the Munster Blackwater River Basin, also known as Unit of Management 18 (UoM 18), which is located in the South Western River Basin District.

This SEA Statement describes how environmental consideration and the consultation responses have been taken into account in the development of the Flood Risk Management Plan (FRMP) for UoM 18 and fulfils the requirements of *European Union Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment* (the SEA Directive) as adapted under *Statutory Instrument (SI) No. 435 of 2004 European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (as amended) (the SEA Regulations)*.

1.3 Summary of SEA Process

1.3.1 Overview

Strategic Environmental Assessment (SEA) is a formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme, prior to a decision being made to adopt a plan or programme.

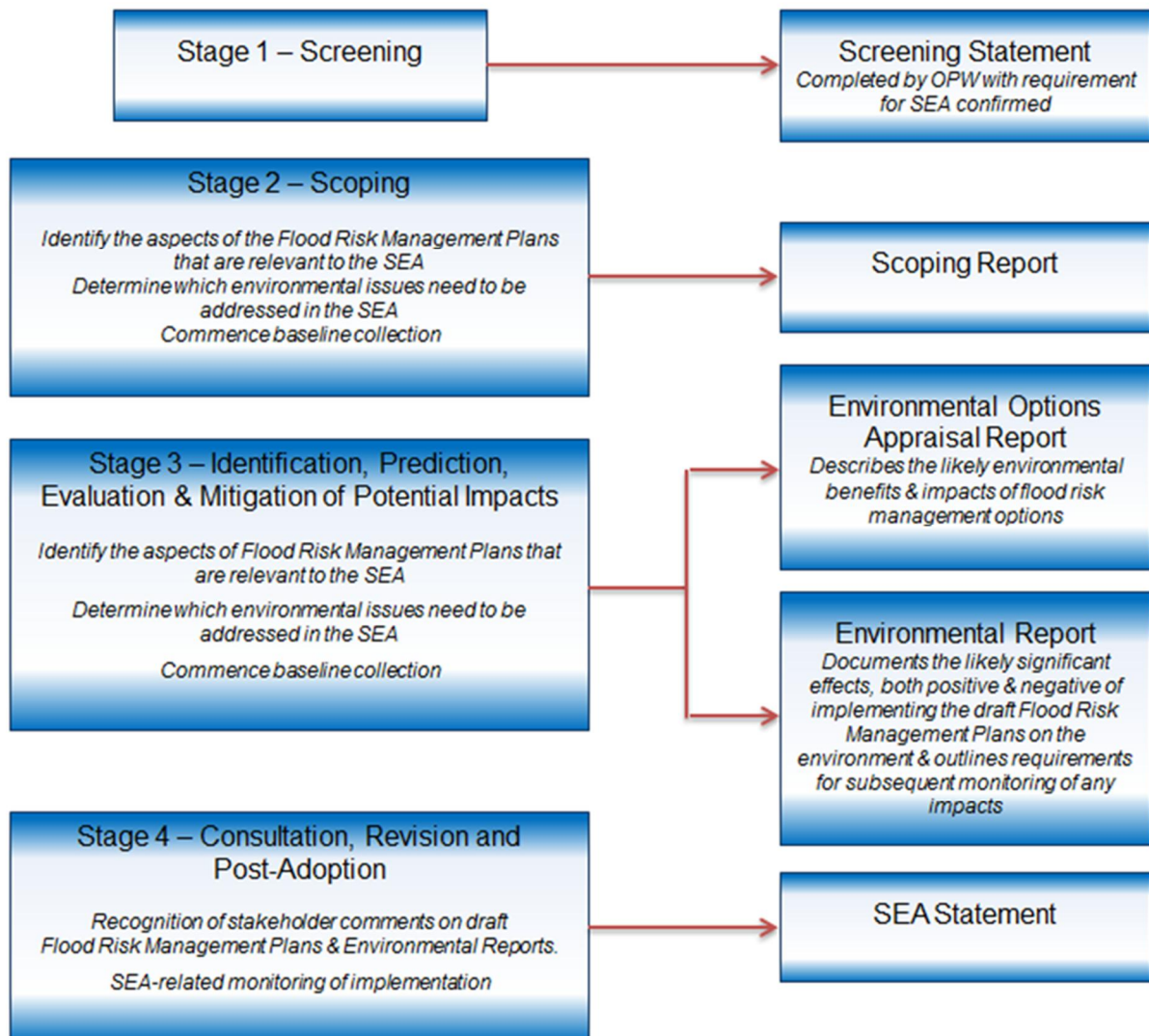
SEA in Ireland is based on *Directive 2001/42/EC (Assessment of the Effects of Certain Plans and Programmes on the Environment)*, more commonly known as the "SEA Directive".

The main objective of the SEA Directive is to:

“Provide for a high level of protection for the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.”

The stages of the SEA process are summarised in Figure 1.1 and discussed further in the following sections.

Figure 1.1: Stages of SEA



1.3.2 Stage 1: SEA Screening

The OPW conducted a screening assessment for the CFRAM studies in September 2011. In the Strategic Environmental Assessment Screening Report it was proposed that an SEA should be undertaken as a matter of good practice for all CFRAM Studies to ensure that environmental effects and potential benefits

are fully integrated into the decision-making process on appropriate flood risk management measures and strategies that will form the core of the FRMPs.

This position was further validated by way of a two-stage screening process where the context of the FRMPs have been assessed against the screening check and the environmental significance criteria as set out in Schedule 1 of the *Planning and Development (Strategic Environmental Assessment) Regulations 2004*. (S.I. No. 435 of 2004) as amended. This assessment identified the requirement for SEA based on the following criteria:

- ┆ The outcome of the screening assessment having full regard to Schedule 1 of the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 as amended indicates that SEA is required;
- ┆ The FRMPs will cover an areas typically greater than 1000 km² and collectively they will cover the entire landmass of the Republic of Ireland. The outcomes of the FRMPs therefore have the potential to have a significant effect on the environment. Carrying out SEAs will allow for the early consideration of environmental issues and the incorporation of these issues into the formulation of the recommendations for flood risk management within the FRMPs;
- ┆ The FRMPs will form a framework for future projects and allocation of resources concerning reduction of flooding risk;
- ┆ The FRMPs will influence spatial plans at both regional and local level;
- ┆ The FRMPs are likely to require an assessment under Article 6 of the EU Habitats Directive.

1.3.3 Stage 2: SEA Scoping

The SEA Scoping report for the South Western CFRAM study was prepared and presents the following details:

- ┆ The key environmental characteristics of each Unit of Management in the South Western River Basin District and an understanding of how flood risk management measures may influence these environmental characteristics;
- ┆ The approach, scope, and level of detail to be included in the Environmental Report to be produced as part of the SEA process, established through consultation with statutory and non-statutory consultees;
- ┆ The SEA Objectives that will be utilised in the appraisal of the Flood Risk Management Plans.

A set of proposed SEA objectives were compiled for each of the key environmental issues as relevant to the Flood Risk Management Plans. The SEA objectives were developed to provide an index against which the environmental effects of the Flood Risk Management Plans could be assessed. The SEA objectives identified in this Scoping Report are outlined in Table 1.1.

Table 1.1: SEA Objectives, Sub-Objectives Indicators and Targets

Objective	Sub-Objective	Indicator	Basic Requirement	Aspirational Target
Minimise risk to human health and life	Minimise risk to human health and life of residents	Annual Average number of residential properties at risk from flooding	Number of residential properties at risk from flooding does not increase	Reduce the number of residential properties at risk from flooding to 0
	Minimise risk to high vulnerability properties	Number of high vulnerability properties at risk from flooding	Do not increase number of high vulnerability properties at risk from flooding	Reduce the number of high vulnerability properties at risk from flooding to 0
Minimise risk to community	Minimise risk to social infrastructure and amenity	Number of social infrastructure	Do not increase number of social infrastructure	Reduce the number of social infrastructure

Objective	Sub-Objective	Indicator	Basic Requirement	Aspirational Target
		receptors at risk from flooding	receptors at risk from flooding	receptors at risk from flooding to 0
	Minimise risk to local employment	Number of enterprises at risk from flooding	Do not increase number of enterprises at risk from flooding	Reduce the number of enterprises at risk from flooding to 0
Support the objectives of the WFD	Provide no impediment to the achievement of water body objectives and, if possible, contribute to the achievement of water body objectives.	Ecological status of water bodies	Provide no constraint to the achievement of water body objectives	Contribute to the achievement of water body objectives
Support the objectives of the Habitats and Birds Directives	Avoid detrimental effects to, and where possible enhance, Natura 2000 network, protected species and their key habitats, recognising relevant landscape features and stepping stones.	Area of site at risk from flooding and qualitative Assessment of impact of option on habitat	No deterioration in the conservation status of designated sites as a result of flood risk management measures	Improvement in the conservation status of designated sites as a result of flood risk management measures
Avoid damage to, and where possible enhance, the flora and fauna of the catchment	Avoid damage to and where possible enhance the flora and fauna of the catchment	Avoid damage to and where possible enhance, legally protected sites / habitats and other sites / habitats of national regional and local nature conservation importance	No deterioration on condition of existing sites due to implementation of option	Creation of new or improved condition of existing sites due to implementation of option
Protect, and where possible enhance, fisheries within the catchment	Maintain existing, and where possible create new, fisheries habitat including the maintenance or improvement of conditions that allow upstream migration for fish species.	Area of suitable habitat supporting fish. Number of upstream barriers	No loss of integrity of fisheries habitat. Maintenance of upstream accessibility	No loss of fishery habitat. Improvement of habitat quality / quantity. Enhanced upstream accessibility
Protect, and where possible enhance, landscape character and visual amenity within the river corridor	Protect, and where possible enhance, visual amenity, landscape protection zones and views into / from designated scenic areas within the river corridor.	Changes to reported conservation status of designated sites relating to flood risk management Extent of affected Natura 2000 site, NHA/pNHA or other affected National or International designations (e.g. Nature reserves and Ramsar sites)	1. No significant impact on landscape designation (protected site, scenic route/amenity, natural landscape form) within zone of visibility of measures 2. No significant change in the quality of existing landscape characteristics of the receiving environment	1. No change to the existing landscape form. 2. Enhancement of existing landscape or landscape feature
Avoid damage to or loss of features, institutions and collections of	Avoid damage to or loss of features, institutions and collections of architectural value	a) The number of architectural features, institutions and collections subject to flooding. b) The	a) No increase in risk to architectural features, institutions and collections at risk from flooding. b) No	a) Complete removal of all relevant architectural features, institutions and collections from the risk of harm by extreme floods.

Objective	Sub-Objective	Indicator	Basic Requirement	Aspirational Target
cultural heritage importance and their setting	and their setting and improve their protection from extreme floods.	impact of flood risk management measures on architectural features, institutions and collections.	detrimental impacts from flood risk management measures on architectural features, institutions and collections.	b) Enhanced protection and value of architectural features, institutions and collections importance arising from the implementation of the selected measures.
	Avoid damage to or loss of features, institutions and collections of archaeological value and their setting and improve their protection from extreme floods where this is beneficial.	a) The number of archaeological features, institutions and collections subject to flooding. b) The impact of flood risk management measures on archaeological features, institutions and collections.	a) No increase in risk to archaeological features, institutions and collections at risk from flooding. b) No detrimental impacts from flood risk management measures on archaeological features, institutions and collections.	a) Complete removal of all relevant archaeological features, institutions and collections from the risk of harm by extreme floods. b) Enhanced protection and value of archaeological features, institutions and collections importance arising from the implementation of the selected measures.

1.3.4 Stages 3: Environmental Assessment and Environmental Report

This stage of the SEA process requires the assessment and evaluation of the FRMP measures to identify the potential significant effects of the flood risk management options on the receiving environment and to identify the preferred options and appropriate mitigation and monitoring required to offset potential impacts.

Based on a detailed understanding of the flood risk identified for each Area of Further Assessment (AFA) a number of different flood alleviation risk management options were developed. Each option was then assessed based on a multi-criteria option assessment (MCA) process. The MCA used a suite of project objectives, which include the SEA objectives to rate each of the proposed plan options. This assessment was then used to identify the preferred flood risk management options. In order to facilitate a more accurate assessment a semi-quantitative approach was adopted whereby each plan option was assessed against the SEA objectives and sub-objectives having regard to the indicators, basic requirements and aspirational targets:

1. Indicator: The indicators are parameters, measurable and numeric where possible by which the success of an option in meeting a particular objective is gauged;
2. Basic Requirements: A basic requirement is set for each objective as a measure to gauge whether the proposed option meets a minimum standard with regard to each objective. The Basic requirement is a measure below which the proposed objective would have a negative effect.
3. Aspirational Targets: This is a target set for each objective and defines the perfect outcome with regard to the potential impact of the objective.

Each option was scored against the objectives and sub-objectives based on the scoring matrix outlined in Table 1.2. Once a score was defined for each objective then a global weighting was applied which defined the perceived importance of the objective in question.

Table 1.2: MCA Scoring

Score	Description of the Scoring
5	An option that meets the aspirational target should be given a score of 5.
1 to 4	An option that performs somewhere between the basic requirement and the aspirational target should be given a score between 1 and 4.
0	An option that meets the basic requirement only should be given a score of 0.
-1 to-5	An option that performs worse than the basic requirement i.e. creates a dis-benefit or does not perform to an acceptable standard should be given a negative score down to -5.
-999	There are exceptions to the negative scoring where the performance or impact of the option becomes unacceptable and the option should be rejected on the basis of its performance on the given option alone.

Following the identification of preferred flood risk management options from the MCA process, the next stage of the study comprised the development of an overall flood risk management strategy which would comprise a combination of flood prevention measures, flood protection measures and flood preparedness.

1.3.5 Stage 4: SEA Statement

The function of the SEA Statement is to identify how the SEA process has influenced the plan and how responses from consultees were taken into account. Another requirement of the SEA Statement is the inclusion of reasons for choosing the plan as adopted in light of the other reasonable alternatives considered.

The Plan for UoM18 was finalised in July 2017. This Plan, along with the SEA Environmental Report, SEA Statement, and NIS are to be supplied to the Minister for Public Expenditure and Reform. The Minister can adopt the Plan, reject the Plan or adopt with recommended amendments. National prioritisation of all the CFRAM studies will take place once the relevant Plan has been adopted.

1.4 Structure of this SEA Statement

The SEA Statement includes the following information;

- i Summary of How environmental considerations have been integrated into the Plan;
- i Summary of How Consultations Responses have been taken into account in the Plan;
- i Reasons for choosing the FRMP, in light of the alternatives assessed;
- i Summary of Monitoring; and
- i Conclusion and Next Steps.

2 How Environmental Considerations have been Integrated into the Plan

2.1 Background

The purpose of the CFRAM Programme is to assess the existing fluvial and coastal flood risk, and the potential increase in risk due to climate change, ongoing development and other pressures that may arise in the future, and develop a Flood Risk Management Plan (hereafter referred to as the 'Plan') setting out a sustainable, long-term strategy to manage this risk.

The objectives of the CFRAM Programme are to:

- i Identify and map the existing and potential future fluvial and coastal flood hazard and flood risk in the Areas for Further Assessment (AFAs),
- i Identify viable structural and non-structural options and measures for the effective and sustainable management of flood risk in the AFAs,
- i Prepare a set of Plans, and associated Strategic Environmental and Habitats Directive (Appropriate) Assessments, that sets out the proposed strategies, measures and actions that should be pursued by the relevant bodies, including the OPW, local authorities and other Stakeholders, to achieve the most cost-effective and sustainable management of existing and potential future flood risk, taking account of environmental plans, objectives and legislative requirements and other statutory plans and requirements.

The CFRAM Programme has been implemented for seven large areas called River Basin Districts (RBDs) that cover the whole country. Each RBD is then divided into a number of River Basins (Units of Management, or 'UoMs'), where one Plan has been prepared for each River Basin. In this case the UoM is the Munster Blackwater River Basin which is located in South Western River Basin District.

2.2 Flood Risk Management Objectives

SEA analysis was undertaken to assess alternatives and preferred plan measures utilising the SEA Objectives, sub objectives and the associated indicators and targets. The analysis was undertaken as part of a Multi-criteria analysis (MCA) which included environmental, social, technical and economic objectives for the projects. The analysis was undertaken in line with the National CFRAM Programme Guidance Note No. 28.

A key element of the SEA process is the development of the of SEA Objectives, Sub-Objectives, indicators and targets. These form the basis on which the environmental impact of the proposed plan measures can be assessed. The SEA Objectives are developed based on an understanding of the receiving environment in terms of spatial scale, sensitivity and existing problems. They were intended to be used as an index to measure the potential for the plan measures to impact the receiving environment positively or negatively. It is important that the SEA objectives were developed to allow for the identification of opportunities as well as problems arising from the plan measures.

These objectives, sub-objectives and indicators will also perform a role in monitoring of the effectiveness of the flood risk management measures as part of a monitoring programme to inform future reviews and revisions to the Flood Risk Management Plans. These objectives, sub-objectives and indicators utilised for the purposes of this strategic environmental assessment are outlined in Table 1.1

2.3 FRMP for the South Western CFRAMs

2.3.1 Overview

The Plan sets out a sustainable, long-term strategy to manage the flood risk within the UoM 18 (Munster Blackwater River Basin), focused on the areas of potentially significant flood risk (AFAs), and the sources of flooding giving rise to that risk. The Plan includes feasible measures developed through a range of programmes or policy initiatives including:

- i Non-structural flood risk prevention and preparedness measures that are applicable nationally, aimed at reducing the impacts of flooding, to implement the recommendations of the Report of the Flood Policy Review Group, 2004
- j Structural flood protection measures for communities at significant flood risk, aimed at reducing the likelihood and/or degree of flooding, identified through the National Catchment Flood Risk Assessment and Management (CFRAM) Programme

The Plan builds on and supplements the programme of flood protection works completed previously, that are under design and construction at this time or that have been set out through other projects or plans, and the ongoing maintenance of existing drainage and flood relief schemes.

2.3.2 Baseline Environment

The Munster Blackwater River Basin (UoM18) covers an area of approximately 3,295 km². The large majority of the area is in North County Cork, with parts in County Waterford. The River Basin also includes small parts of Limerick, Kerry and Tipperary, and only has a few kilometres of coastline at Youghal Bay. The main rivers within the River Basin are the Blackwater and its tributaries, the Allow and the Bride.

As part of this study, there are nine Areas for Further Assessment (AFAs) within the Munster Blackwater River Basin. Associated with the AFAs is over 240km of high and medium priority watercourse. High priority watercourses are any modelled watercourse within an AFA. Medium priority watercourses are all other modelled watercourses.

Table 2.1: AFAs within UoM18

UoM	Name	Unique ID	Fluvial	Coastal	County	Easting	Northing	Viable Structural Options
18	Aglish	180247	Yes	No	Waterford	212250	91500	Yes
18	Ballyduff	180248	Yes	No	Waterford	196500	99500	Yes
18	Fermoy	180252	Yes	No	Cork	182750	99500	No
18	Freemount	180253	Yes	No	Cork	139500	114250	No
18	Kanturk	180254	Yes	No	Cork	138250	102750	Yes
18	Mallow	180262	Yes	No	Cork	155250	98500	No
18	Rathcormac	180265	Yes	No	Cork	181750	91000	Yes
18	Tallow	180266	Yes	No	Waterford	199750	93750	No
18	Youghal	180267	No	Yes	Cork	210250	78750	Yes

2.3.3 Methodology

A comprehensive process of plan development was undertaken with the principle tasks being as follows:

- Data collection relating to topography, geology, soils and groundwater, land use and land management, etc;
- Hydrological analysis including sub-catchments and coastlines, rainfall distribution, hydrometric data, flooding records, etc;
- Hydraulic analysis;
- Development of flood maps;
- Strategic Environmental Assessment and Habitats Directive Appropriate Assessment;
- Flood risk assessment of people, economy and environment;
- Development and assessment of flood risk mitigation options; and,
- Development of the Flood Risk Management Plan (FRMP).

The resultant FRMP sets out recommendations for the management of existing flood risk and the potential for significant increases in this risk due to climate change, ongoing development and other pressures that may arise in the future at each of the AFA's located within UoM18.

2.3.4 Environmental Considerations

The Environmental Report identifies, evaluates and describes the likely significant effects on the environment of implementing the potential measures set out in the Draft Plan, with a view to avoiding adverse effects, and also, where appropriate, to set out recommendations as to how any identified adverse effects can be mitigated, communicated and monitored.

A Natura Impact Statement has been prepared which sets out the potential impacts of possible measures on the integrity of the Natura 2000 sites (core breeding and resting sites for rare and threatened species, or sites for some rare natural habitat types)¹.

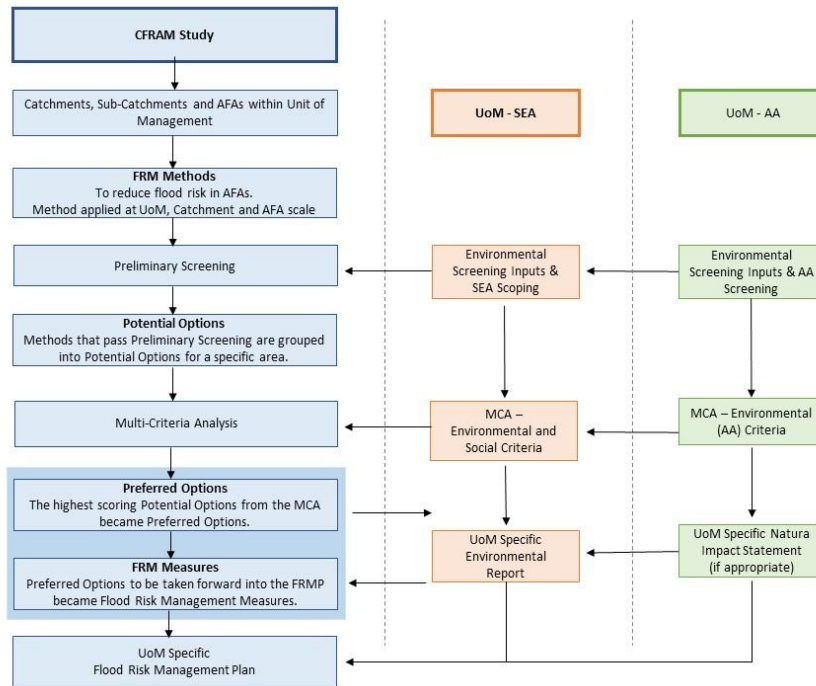
Following consideration of observations made in response to the public and statutory consultation on the Draft Plan, including comments received on the SEA Environmental Report and the Natura Impact Statement, the final Plan has been prepared.

It should be noted that the SEA and AA undertaken in relation to the Draft Plan are plan-level assessments. The Plan will inform the progression of the preferred measures, but project-level assessments will need to be undertaken as required under the relevant legislation for consenting to a Scheme or works that involves physical works and that may progress in the future. The approval / adoption of the Plan does not confer approval or permission for the installation or construction of any physical works.

The interaction between the Strategic Environmental Assessment process, the Appropriate Assessment process and the plan are presented below in Figure 2.1.

¹ http://ec.europa.eu/environment/nature/natura2000/index_en.htm

Figure 2.1: Interaction and Stages of Plan Development, SEA and AA Process



2.3.5 Recommendations

The strategic environmental assessment has as part of the plan development identified the preferred flood risk management options for each of the AFAs in the UoM18. The SEA assessment also identified that the non-structural measures proposed for the UoM18 have either positive or neutral impacts and as a result do not require the implementation of mitigation measures. These included the following preferred options:

- ┆ Sustainable Planning and Development Management
- ┆ Preparation of Local Adaptation Planning
- ┆ Sustainable Urban Drainage System (SUDS)
- ┆ Emergency Response Planning
- ┆ Promotion of Individual and Community Resilience
- ┆ Individual Property Protection
- ┆ Land Use Management and Natural Flood Risk Management Measures

The proposed structural measures were developed through the multi-criteria analysis (MCA) of a number of alternative options for each AFA. The MCA Analysis was integrated into the SEA process with the SEA objectives used to rate each of the flood management options in order to identify the preferred option. The preferred structural measures for each AFA are as follows:

- ┆ The preferred option for Kanturk is Storage and Flood Defences.
- ┆ The preferred option for Ballyduff is Flood Defences.
- ┆ The preferred option for Aglish is Flood Defences.
- ┆ The preferred option for Youghal is Monitoring and Flood Defences.
- ┆ The preferred option for Rathcormac is Flow Diversion.

Section 10 of the SEA Environmental Report outlines the mitigation measures proposed to be included in the Plan for each AFA within UoM18.

These mitigation measures aim to prevent, reduce, and fully as possible offset any significant adverse effects on the environment due to the implementation of the Plan. Mitigation has been further enhanced following consultation of the draft Plan.

2.3.6 General Mitigation Preconstruction/ Detail Design

The preferred structural flood risk management options could give rise to some environmental impacts, both positive and negative of short term and long-term duration. For each of the proposed measures that have a potential negative impact, mitigation measures have been formulated to minimise the potential negative impacts arising from the options to be adopted.

Measures to reduce/eliminate any likely impacts of a flood risk management scheme on environmental, social and cultural receptors must adopt the mitigation hierarchy;

1. **Avoidance**- avoid creating impacts from the outset design optimisation by careful spatial or temporal placement of infrastructure or disturbance;
2. **Minimisation** – measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided;
3. **Rehabilitation/restoration**- measures taken to improve degraded or removed ecosystems following exposure to impacts;
4. **Compensation**; measures taken to compensate for any residual, adverse impacts.

The principal mitigation recommendation is that potential impacts should be considered further during the next stage of option development, when detailed design of the preferred structural option progresses. Furthermore, Section 25 of the Regulations permits the OPW to carry out such hydrometric, engineering, environmental, topographical, valuation and other surveys as deemed necessary to prepare a flood scheme. This will allow the proposed option to be optimised through detailed design in order to limit the potential negative impacts on the receiving environment. Environmental studies based on the detailed design and construction methodology will be undertaken as appropriate. These studies include but are not limited to:

- i Habitat & species surveys²;
- i Ornithological surveys;
- i Bat surveys;
- i Fish surveys;
- i Water quality surveys;
- i WFD hydro-morphological assessments;
- i Archaeological surveys;

² In the context of ecological mitigation, the habitat and species surveys are conducted as required to assess the various aspects for the project, such as ecological surveys for:

- protected or notable habitats and species, including Annex 1 habitats, Annex II and Annex IV species,
- species protected under the Wildlife Acts,
- species protected under the Flora Protection Order,
- the resting and breeding places of relevant species and,
- invasive species, both plant and animal

- i Landscape and visual assessments;
- i Land valuation surveys; and
- i Other surveys as deemed necessary to prepare a project.

Where it is not feasible to avoid impacts on protected wild birds / animals or protected flora/habitats (through for example alternative flood protection measures, design and construction methods), it will be necessary to attain a derogation from the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs (issued through NPWS, and IFI). In accordance with Circular letter NPWS 2/07, any application for a derogation must be submitted prior to seeking planning permission or approval for a scheme.

If potential impacts on archaeological heritage (Record of Monument and Places, RMP) cannot be avoided, written notice must be issued to the Minister 2 months in advance of commencing the work. Any instruction or information request issued by the Minister in response must be adhered to.

If in the course of the implementation of a scheme it is proposed to alter in any way a structure listed on the Local Authority's Record of Protected Structures (RPS), a declaration must be sought from the Local Authority under Section 57 of the Planning and Development Act 2000 which will set out whether planning permission is required or not for the proposed works.

It is an offence under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended), to plant, disperse, allow or cause to disperse, spread or otherwise cause to grow any plant specified in the Third Schedule of the Regulations (invasive plant species). Similarly, it is an offence to release or allow / cause to disperse any animal in the Third Schedule of the Regulations. Where invasive species are determined to be present within the zone of influence of a scheme, an Invasive Species Management Plan must be produced in advance of the works. Note recommendations on the use of pesticides for the control of invasive species can only be done by a Pesticide Advisor registered with the Department of Agriculture, Food and the Marine (DAFM). Therefore, the Invasive Species Management Plan must be prepared by suitably qualified person(s) (note also that the use of pesticides can only be carried out by a registered 'Pesticide user' with DAFM).

2.3.7 General Mitigation Construction Stage

Mitigation measures should also refer to a monitoring regime that will be carried out over the following 6 yearly cycle. Review of national available data (i.e. catchments.ie) and associated report published as and when they become available will inform the 6 -yearly review of the CFRAM Studies. The information should be also in line with the 6-yearly cycle review for the WFD.

The opportunity for environmental enhancement should be assessed and implemented as appropriate at design stage and should include both aquatic and terrestrial enhancements as appropriate. Environmentally sensitive design should be adopted e.g. use of channel deflectors.

The feasibility /appropriateness of applying green engineering instead of hard flood protection measures should be assessed and implemented as appropriate at design stage.

An appropriate assessment will be conducted at project stage having regard to the specific design details and construction methods that will be set out for each option at project level.

The OPW will ensure that a Construction Environmental Management Plan (CEMP) is produced for every scheme which is to be progressed under Section 25 of the European Communities (Assessment and Management of Flood Risks) Regulations, 2010. The CEMP will incorporate all environmental commitments, mitigation measures, environmental requirements relevant to the construction of the works, as required by;

- i Relevant legislation;
- i The flood Risk Management Plan (FRMP) and SEA and AA;
- i Environmental Impact statements, Appropriate Assessments, Conditions of Planning Approval;
- i Recommendations set out by statutory authorities, IFI, NPWS, and EPA;
- i Recommendations of surveys conducted under Section 25 of the Flood Risk Regulations;
- i The OPW Arterial Drainage Maintenance Environmental Management Protocols & Standard Operating procedures.

Best Practice construction mitigation shall include, but not be limited to, the following best practice guidance:

- i Construction Industry Research and Information Association (CIRIA) 'Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors' (CIRIA, 2001);
- i CIRIA C648: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006);
- i CIRIA C649 Control of Water Pollution from Linear Construction Projects: Site Guide (Murnane et al. 2006);
- i Inland Fisheries Board 2016/ 4298 Guidance Document "Guidelines on protection of fisheries during construction works in and adjacent to waters";
- i UK Environment Agency: Pollution Prevention Guidelines; and
- i BS 5228: Part 1 and the European Communities (Noise Emission by Equipment for Use Outdoors) Regulations, 2001

The CEMP should be site-specific. Work should only commence once the CEMP (and detailed method statements as appropriate) has been approved by IFI and NPWS as relevant.

An Ecological/Environmental Clerk of Works as appropriate should be engaged for each scheme.

AFA specific mitigation measures are outlined in full in Chapter 10 of the SEA Environmental Report.

3 How Consultation Responses have been Considered

Consultation has been an integral part of the SEA of the FRMP. Environmental input has been taken into consideration at every stage of the development of the plans. An overview of the CFRAM consultation stages and structures is provided diagrammatically in Figure 3.1. A multipronged approach was taken throughout the development of the Plans. This was achieved through a range of consultation activities including, but not limited to,

- i National and Regional Stakeholder Group Workshop;
- i Elected Members Briefings;
- i Public Consultation Events;
- i Web based consultation including a dedicated website.

3.1.1 Stakeholder Group Workshops

Stakeholder Groups were formed at national and regional level to provide an opportunity for input by non-governmental stakeholder groups to participate in the 'Floods' Directive and CFRAM processes. The National CFRAM Stakeholder Group was established in 2014. It was established to provide for the engagement of key national non-governmental stakeholder organisations at key stages in the process of the implementation of the National CFRAM Programme. Members of the organisations listed in Appendix D.3 of the Plan were invited to meetings of this Group.

The South Western CFRAM Stakeholder Group was also established in 2012, and met on three occasions to the date of publication of this Plan. It was established to provide for the engagement of local non-governmental stakeholder organisations at key stages in the process of the implementation of the South Western CFRAM Project. The organisations listed in Appendix D.4 of the Plan attended meetings of this Group, although many other organisations were also invited to attend.

3.1.2 Public Consultation and Engagement

In addition to the structured engagement with relevant stakeholders through the Steering, Progress and Stakeholder Groups, the public have also been given the opportunity and encouraged to engage with the implementation of the 'Floods' Directive and the CFRAM and SEA process. These events enabled local groups and members of the public to meet with and discuss the development of the Plan and its supporting environmental reports at key stages in the development of the Study. Briefing were also provided to Elected Members These engagement and consultation steps are set out in Figure 3.1, and are described in the sub-sections below.

3.1.2.1 Consultation on Preliminary Flood Risk Assessment

The public and stakeholder consultation and engagement in the Preliminary Flood Risk Assessment (PFRA) was carried out by the OPW. The PFRA in Ireland was finalised in December 2011, following public consultation.

3.1.2.2 Consultation on Flood Maps

The initial preparation of the flood maps involved extensive consultation with the South-Western Progress Group and planners within the various relevant local authorities. This led to the development of draft flood maps that were then consulted upon with the public through local Public Consultation Days and a national,

statutory consultation. Key environmental considerations raised through stakeholder consultation process pertain to the following:

- i The identification of additional sources of environmental receptor data e.g. the EPA SEA WebGIS, EPA bathing water mapping, GSI mapping data;
- j The identification of newly available data e.g. aggregate potential mapping, aquifer storage / recharge data;
- k The requirement of the SEA objectives to include the protection of geological heritage, all protected habitats and species (not just Natura 2000 sites);
- l The requirement to consider the interactions between the Flood Risk Management Plan and previously unidentified plans including those currently in draft format;
- m Comments on Appropriate Assessment screening.

3.1.2.3 Public Consultation Days

The OPW identified that effective consultation and public engagement would require local engagement at a community level, and hence determined that Public Consultation Days (PCDs) would be held in each AFA (where possible and appropriate) to engage with the communities at various stages of the Projects, including during the production of the flood maps.

The PCDs were advertised locally in advance, and were held at a local venue in the community during the afternoon and early evening. OPW, Local Authority and MacDonald Ireland staff were present to explain the maps that were displayed in the venue and answer any questions on the maps and the CFRAM process, and to collate local information to refine or confirm the maps. The PCDs in the Munster Blackwater River Basin were held for consultation on the flood maps at the venues listed in Appendix D.5 of the FRMP.

3.1.2.4 National Flood Map Consultation

The European Communities (Assessment and Management of Flood Risks) Regulations (SI No. 122 of 2010) require that a national consultation exercise should be undertaken³. The consultation on the flood maps for all areas was launched in November 2015. Observations and objections submitted through the national consultation process have been assessed and the flood maps amended accordingly, where appropriate.

3.1.2.5 Consultation on SEA Scoping on the Flood Risk Management Objectives

The Flood Risk Management Objectives of the National CFRAM Programme define what the process is trying to achieve in terms of reduction of flood risk, and where possible provide wider benefits, to human health, the environment, cultural heritage and economic activity. The Flood Risk Management Objectives have a key role in the preparation of the Plan and the measures proposed, as the options that are assessed against these objectives to determine how well each option will contribute towards meeting the defined goals. During the scoping phase of the SEA, a number of consultation exercises were undertaken to inform the decision making process during the Scoping phase and these are as follows:

- i The OPW considered it appropriate to publicly consult on the proposed flood risk management objectives. As a result a public consultation was launched in October 2014 and 71 submissions were received during this consultation which were subsequently considered and amendments made to the Objectives where appropriate.

³ Sections 12, 13 and 14, SI No. 122 of 2010

- i Furthermore, in order to provide a robust scoping of the SW CFRAM Study, baseline information on each of the environmental headings set out in Annex 2(f) of the *European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations, 2004* was gathered for each Unit of Management. This information was also subject to consultation with the project stakeholders and the public. Following this consultation, a final set of project objectives including SEA objectives were adopted in March 2015.
- j A Multi-Criteria Assessment (MCA) has been used as part of the process for assessing potential options for reducing or managing flood risk in each AFA. The MCA makes use of weightings to rank the importance of the Objectives. The OPW considered it appropriate to consult on the weightings that would be assigned to each Objective, and commissioned an independent poll of over 1000 members of the public on the weightings through a structured questionnaire. The results of this poll were analysed and the weightings for each of the Objectives then set.

3.1.2.6 Consultation on Options

Based on the flood hazard and risk identified in the flood maps, options for reducing or managing flood risk in each AFA were developed and assessed.

PCDs, similar to those held for the consultation on the flood maps were held during the development and assessment of options. These were an opportunity to engage with the community to identify local issues that were particularly important and the measures they considered would be most effective and appropriate. The PCDs in the Munster Blackwater River Basin were held during the option development stage at the venues listed in Appendix D.6 of the FRMP.

3.1.2.7 Consultation on Draft Plans

The Draft Plan for the Munster Blackwater River Basin as published for the purposes of public consultation on 15 July 2016. The draft Plan was accompanied by the draft SEA Environmental Report and where applicable a draft NIS. Observations from the public and from relevant Local Authorities were submitted to the OPW. Presentations were made to Local Authorities during the public consultation period.

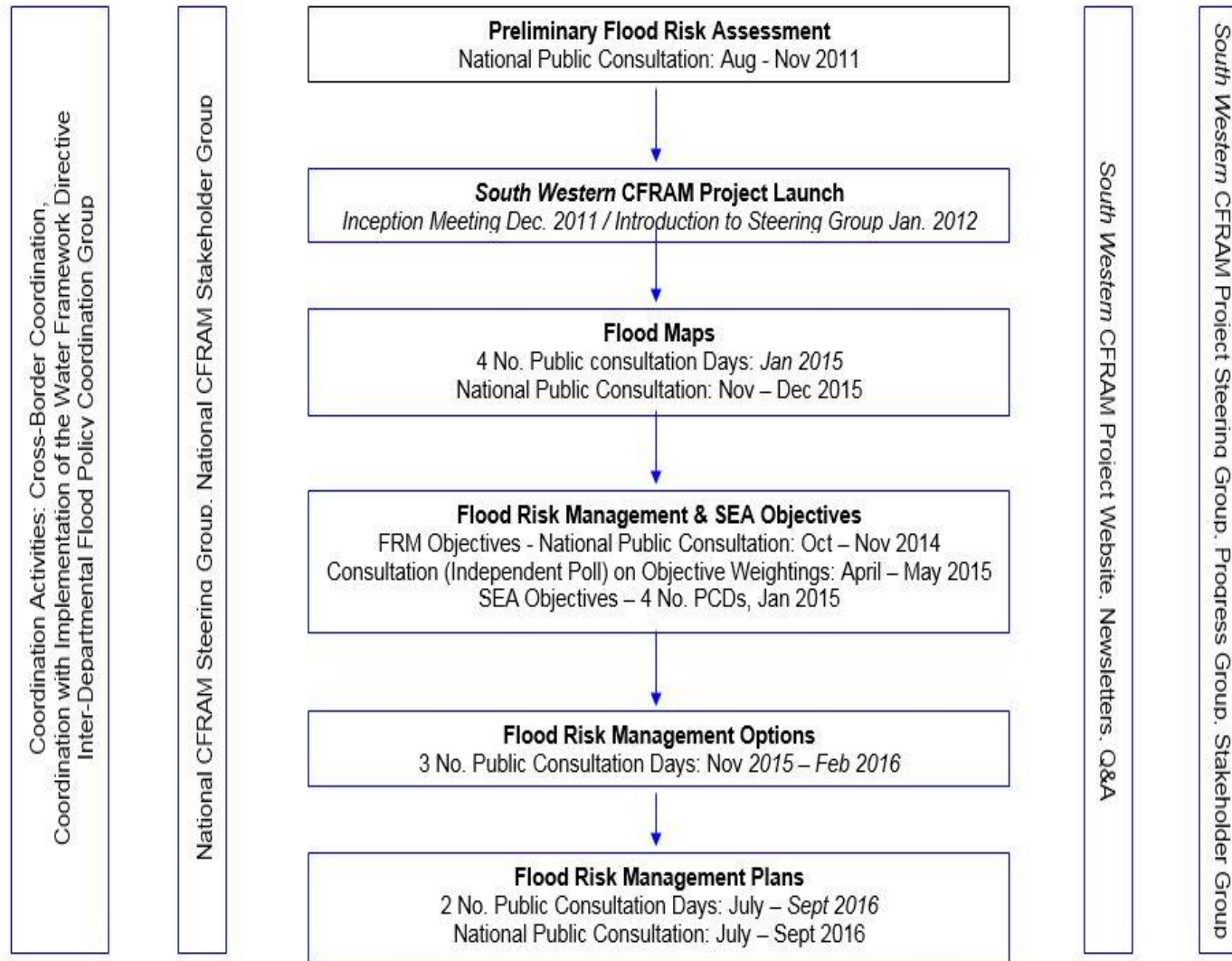
In parallel and complementary to the formal public consultation process, a series of PCDs, similar to those held for the consultation on the flood maps were held to engage locally and directly with the community and provide people with opportunity to discuss and fully understand the Draft Plans. The PCDs undertaken in the Munster Blackwater River Basin are listed in Appendix D.7 in the FRMP.

The observations submitted to the OPW through the public consultation processes were considered and the Plans and accompanying environmental assessments amended accordingly where appropriate. A synopsis of the observations submitted and amendments made to the SEA and NIS arising from the observations is provided in Appendix A of this Statement.

3.2 Changes to the Final Plan and SEA ER and NIS

Following receipt and review of all environmental submissions on the draft Plan, Draft SEA Environmental Report and NIS, amendments were made to the SEA Environmental Report and NIS. The amendments were made to provide greater clarity on the assessment approach, to ensure substantive issues identified during consultation were addressed and to ensure the documentation was completed in compliance with the relevant legislative requirements.

Figure 3.1: Overview of the CFRAM Consultation Stages and Structures



4 The Reasons for Choosing the FRM Measures over the Alternatives Assessed

4.1 Alternatives Considered

There are a wide range of different approaches, or methods, that can be taken to reduce or manage flood risk. Flood risk measures include non-structural methods that do not involve any physical works to prevent flooding but rather comprise actions typically aimed at reducing the impacts of flooding. Structural works are also considered to reduce flood flows or levels in the area at risk or to protect an area against flooding. The range of methods for managing flood risk that are considered include those outlined below:

- i Flood risk Prevention Methods
 - Sustainable Planning and Development Management
 - Sustainable Urban Drainage Systems (SUDS)
 - Voluntary Home Relocation
 - Preparation of Local Adaptation Planning
 - Land Use Management and Natural Flood Risk Management Measures
- j Flood Protection Measures typically include
 - Enhance Existing Protection Works
 - Flood Defences
 - Increasing Channel Conveyance
 - Diverting Flood Flows
 - Storing Flood Waters
 - Implementing Channel Maintenance Programmes
 - Maintenance of Drainage Schemes
 - Land Commission Embankments
- k Flood Preparedness (Resilience) Methods
 - Flood Forecasting and Warning
 - Emergency Response Planning
 - Promotion of Individual and Community Resilience
 - Individual Property Protection
 - Flood-Related Data Collection
- l Continue existing Regime /Do nothing// Minor Measures
 - Continue existing regime/maintain
 - Do nothing
 - Minor Measures.

These alternatives were assessed via the methodology summarised in Section 2 of this SEA Statement which includes environmental assessment and influence at all stages of the FRMP process.

4.2 Final Plan Flood Relief Measures

4.2.1 Non-Structural Measures

There are certain prevention and preparedness measures related to flood risk management, as described above and in Section 7 and Appendix F of the Plan, that form part of wider Government policy. These

measures, set out below under the themes of prevention, protection and preparedness, should be applied across all areas of the River Basin, including properties and areas outside of the AFAs, as well as within.

Table 4.1: Measures Applicable to all Areas

Measure Theme	Measure Name	Details	Implementation
Prevention	Application of the Guidelines on the Planning System and Flood Risk Management (DHPCLG/OPW, 2009)	The Planning Authorities will ensure proper application of the Guidelines on the Planning System and Flood Risk Management (DHPCLG/OPW, 2009) in all planning and development management processes and decisions. This includes where appropriate a review of existing land use zoning and the potential for blue/green infrastructure in order to support sustainable development taking account of the flood maps produced through the CFRAM Programme and parallel projects	Planning Authorities
Prevention	Implementation of Sustainable Urban Drainage Systems (SUDS)	In accordance with the Guidelines on the Planning System and Flood Risk Management (DHPCLG/OPW, 2009), planning authorities should seek to reduce the extent of hard surfacing and paving and require, subject to the outcomes of environmental assessment, the use of sustainable drainage techniques	Planning Authorities
Prevention	Voluntary Home Relocation	Qualifying home owners affected by the flood event in Winter 2015/16 may avail of a Voluntary Homeowner Relocation Scheme that has been put in place by Government	Humanitarian assistance to Home-Owners qualifying under the Voluntary Homeowners Relocation Scheme, 2017
Prevention	Local Adaptation Planning	Local authorities should take into account the potential impacts of climate change on flooding and flood risk in their planning for local adaptation, in particular in the areas of spatial planning and the planning and design of infrastructure	Local Authorities
Prevention	Land Use Management and Natural Flood Risk Management Measures	The OPW will work with the EPA, local authorities, and other agencies during the project-level approvals processes for physical works and more broadly at a catchment-level. This will allow for the identification where possible of measures that will have benefits for both WFD and flood risk management and also for biodiversity and potentially other objectives.	Local Authority WFD Offices, OPW, EPA, Others
Protection	Minor Works Schemes	The OPW will continue the Minor Works Scheme subject to the availability of funding and will keep its operation under review to assess its continued effectiveness and relevance	OPW, Local Authorities
Protection	Maintenance of Arterial Drainage Schemes and Existing Flood Relief Schemes	There are 5 Arterial Drainage Schemes and existing flood relief schemes within the Munster Blackwater River Basin. The OPW has a statutory duty under the Arterial Drainage Act, 1945, and the Amendment of the Act, 1995, to maintain the Arterial Drainage and the flood relief Schemes. The local authorities should also maintain those flood relief schemes for which they have maintenance responsibility. The Plan does not amend these responsibilities to provide additional flood relief. The Plan therefore does not set out additional measures in this regard	OPW
Protection	Maintenance of Drainage Districts	There are 2 No. Drainage Districts within the Munster Blackwater River Basin, namely the Annaslinga DD and the Awbeg DD. The local authorities have a statutory duty to maintain the Drainage Districts, and this Plan does not amend these responsibilities to provide additional	Local Authority

Measure Theme	Measure Name	Details	Implementation
		flood relief. The Plan therefore does not set out additional measures in relation to the maintenance of Drainage Districts	
Maintenance	Maintenance of Channels Not Part of a Scheme	Outside of the Arterial Drainage and Drainage District Schemes, landowners who have watercourses on their lands have a responsibility for their maintenance. Work to develop guidance to clarify the rights and responsibilities of landowners in relation to the maintenance of water courses on or near their lands is being developed through the Inter-Departmental Flood Policy Review Group	Landowners
Preparedness	Flood Forecasting	The establishment of a new operational unit in Met Éireann to provide, in the medium term, a national flood forecasting service and the establishment of an independent Oversight Unit in the OPW	OPW, D/HPCLG, Met Éireann and Local Authorities
Preparedness	Review of Emergency Response Plans for Severe Weather	Ongoing, regular appraisal of emergency management activities to improve preparedness and inter-agency coordination and to shape future MEM developments as part of the major emergency development programmes, taking into account in particular the information developed through the CFRAM Programme and this Plan	Principal Response Agencies, Regional Steering Groups, National Steering Group
Preparedness	Individual Property Protection	Property owners may consider the installation of Individual Property Protection measures. The Inter-Departmental Flood Policy Review Group is considering the policy options around installation of Individual Property Protection measures for consideration by Government	Home owners, Inter-Departmental Flood Policy Review Group
Preparedness	Individual and Community Action to Build Resilience	All people at flood risk should make themselves aware of the potential for flooding in their area, and take long-term and short-term preparatory actions (subject to environmental assessment, where relevant) to manage and reduce the risk to themselves and their properties and other assets	Public, business owners, farmers and other stakeholders
Preparedness	Flood-Related Data Collection	The OPW, Local Authorities / EPA and other organisations collecting and, where appropriate, publishing hydro-meteorological data and post-event event flood data should continue to do so to improve future flood risk management	OPW, Local Authorities / EPA and other hydro-meteorological agencies

4.2.2 Structural Measures

The viable Structural Options identified for each AFA are noted below.

4.2.2.1 Aglish AFA Measures

Potentially viable flood relief works for Aglish that are proposed in the FRMP include Fluvial Flood Defences. The Flood Defence walls and embankments will be up to 1.1m in height. The feedback at the Public Consultation Day at Optioneering stage was in support of Flood Defences. No further feedback was received on the preferred option during the statutory consultation on the draft FRMP. The potentially viable flood relief works are expected to provide protection against a 100-Year flood (1% Annual Exceedance Probability).

4.2.2.2 Ballyduff AFA Measures

Potentially viable flood relief works proposed in the FRMP for Ballyduff include fluvial Flood Defences. These measures consist of walls and embankments up to a maximum height of 2.5m. Road raising will also be carried out in certain locations. The feedback at the Public Consultation Day at Optioneering stage was in support of Flood Defences. It has been determined that fluvial flood forecasting is a viable option for Ballyduff, if implemented before the preferred structural option.

4.2.2.3 Kanturk AFA Measures

Potentially viable flood relief works identified for Kanturk include Storage and Flood Defences. These measures consist of the provision of a storage area on the Dalua River upstream of the town along with fluvial Flood Defences on the Dalua and Allow rivers comprising of walls and embankments along with storm water pump stations. The feedback at the Public Consultation Day at Optioneering stage was in support of Storage & Flood Defences. The feedback received was against the removal of the weirs which are important to local angling. Feedback received during the statutory consultation on the Draft FRMP expressed concern at the proposal to store flood waters upstream of the town in a storage area. The point was made that the impact that the flood storage area could have on the environment needs to be investigated further.

4.2.2.4 Rathcormac AFA Measures

Potentially viable flood relief works identified for Rathcormac include Flow Diversion. These works consist of the diversion of flood flows from the Kilbrien Stream via a 1200mm diameter culvert to the Shanowen River and will protect against the 1% AEP fluvial flood event. At the Draft Flood Risk Management Plan stage, a local interest group strongly supported the option of flow diversion, however consultation also identified that the Shanowen River may not have sufficient capacity to take the additional flow from the Kilbrien Stream upstream of the town. The alignment and details of the flow diversion option needs to be developed further during the planning stage of the project.

4.2.2.5 Youghal AFA Measure

Potentially viable flood relief works identified in the FRMP for Youghal include Monitoring and Flood Defences. Tidal monitoring is to be carried out in advance of any mitigation works to review and determine the design tide plus surge level. Tidal Flood Defences along the quays and to the rear of properties comprising of sea walls, and removable barriers / gates are included at certain locations to maintain existing access points along with storm water pump stations. These Flood Defences are

expected to provide protection against the 0.5% AEP tidal flood event. The feedback from the consultation at Optioneering stage was in support of Monitoring and Flood Defences.

5 Monitoring

5.1 Introduction

A mitigation monitoring programme has been formulated for each AFA within the FRMP based on the SEA objectives sub objectives and the associated indicators. The monitoring programme is required for the following reasons:

- i To monitor the predicted significant negative effects of the FRMP; and
- i To monitor the baseline environmental conditions for all SEA objectives.

The monitoring programme will also help to identify any unforeseen negative effects of the plan and ensure that action can be taken to mitigate them.

5.2 Responsibilities for Monitoring

The OPW will monitor progress in the implementation of measures for which the OPW has responsibility on an ongoing basis as part of its normal business management process.

The OPW will coordinate and monitor progress in the implementation of the Plans through an inter-departmental coordination group.

On a six-yearly cycle, the OPW will undertake a full review of the progress in the implementation of the Plan and the level of flood risk, and will report this progress publicly and to the European Commission as part of obligations of Ireland under the 'Floods' Directive.

In addition to monitoring of the implementation of the measures set out in the Plan, monitoring will also be undertaken in relation to:

- Continued collection and analysis of hydro-meteorological data for improved flood flow and sea level frequency analysis and for observation of the potential impacts of climate change
- Ongoing recording of flood events through established systems, with photographs, peak water levels, duration, etc., for recording and publication on the National Flood Event Data Archive (www.floodmaps.ie)
- Monitoring of compliance with the Guidelines on the Planning System and Flood Risk Management through ongoing review of development plans, local area plans and other forward planning documents
- Changes that may affect the areas prone to flooding as shown on the flood maps, with the flood maps updated on an ongoing basis as necessary

This monitoring will be carried out at various stages of scheme implementation e.g. before, during and after scheme development, such that the success of measures to protect or enhance environmental, social and cultural receptors can be assessed.

As part of the monitoring programme, relevant and appropriate thresholds will be agreed in consultation with the competent authorities to determine when remedial action is required for the particular aspect of the environment being monitored. Existing environmental monitoring is currently undertaken throughout Ireland

by the OPW and other organisations like the EPA, IFI, and NPWS, for a number of environmental elements in accordance with environmental legislation. These sources will be used as baseline data or reference.

The proposed monitoring programme applicable to each AFA within the Plan is set out below in Table 5.1.

Table 5.1: AFA Monitoring Programme

Environmental Topic	Objective	Sub Objective	Indicator	Proposed Monitoring
Population and Human Health	Minimise risk to human health and life	Minimise risk to human health and life of residents	Annual Average number of residential properties at risk from flooding	<p>Review of national available population data when it becomes available i.e. CSO published reports</p> <p>Review of location and details of services data during detail design</p> <p>Consultation with competent authorities prior to works should ensure all impacts are kept to minimum over a short timescale</p>
		Minimise risk to high vulnerability properties	Number of high vulnerability properties at risk from flooding	
	Minimise risk to community	Minimise risk to social infrastructure and amenity	Number of social infrastructure receptors at risk from flooding	
		Minimise risk to local employment	Number of enterprises at risk from flooding	
Water Resources	Support the objectives of the WFD	Provide no impediment to the achievement of water body objectives and, if possible, contribute to the achievement of water body objectives.	Ecological status of water bodies	<p>Review of national available data and associated reports published as and when they become available including catchment.ie/ EPA and IFI/EREP monitoring programme and NPWS datasets, catchments.ie monitoring programme for WFD compliance</p> <p>Review of available published environmental and ecological surveys for other schemes with hydrological linkage to the proposed works area.</p>
Ecology	Support the objectives of the Habitats and Birds Directives	Avoid detrimental effects to, and where possible enhance, Natura 2000 network, protected species and their key habitats, recognising relevant landscape features and stepping stones.	Area of site at risk from flooding and qualitative Assessment of impact of option on habitat	<p>Review of national available data and associated reports published as and when they become available</p> <p>Conservation Status Assessment Reports (CSARs), Backing Documents and Maps prepared in accordance with Article 17 of the Habitats Directive</p>

Environmental Topic	Objective	Sub Objective	Indicator	Proposed Monitoring
	Avoid damage to, and where possible enhance, the flora and fauna of the catchment	Avoid damage to and where possible enhance the flora and fauna of the catchment	Avoid damage to and where possible enhance, legally protected sites / habitats and other sites / habitats of national regional and local nature conservation importance	Review of national available data and associated reports published as and when they become available including EPA monitoring programme for WFD compliance, biodiversity Ireland data, IFI where appropriate
	Protect, and where possible enhance, fisheries resource within the catchment	Maintain existing, and where possible create new, fisheries habitat including the maintenance or improvement of conditions that allow upstream migration for fish species.	Area of suitable habitat supporting fish. Number of upstream barriers	Monitoring during Construction and post construction. Review of available published environmental and ecological surveys and monitoring for other schemes with hydrological linkage to the proposed works area including scheme maintenance and for minor works Monitoring of Receiving Waters during Construction
Landscape and Visual	Protect, and where possible enhance, landscape character and visual amenity within the river corridor	Protect, and where possible enhance, visual amenity, landscape protection zones and views into / from designated scenic areas within the river corridor.	Changes to reported conservation status of designated sites relating to flood risk management Extent of affected Natura 2000 site, NHA/pNHA or other affected National or International designations (e.g. Nature reserves and Ramsar sites)	Review of County Development Plan landscape designations and landscape character areas in the detail design stage
Archaeology and Architectural and Cultural Heritage	Avoid damage to or loss of features, institutions and collections of cultural heritage importance and their setting	Avoid damage to or loss of features, institutions and collections of architectural value and their setting and improve their protection from extreme floods.	a) The number of architectural features, institutions and collections subject to flooding. b) The impact of flood risk management measures on architectural features, institutions and collections.	Review of County Development Plan designations and sensitive areas in the detail design stage
		Avoid damage to or loss of features, institutions and collections of archaeological value and their setting and improve their protection from extreme floods where this is beneficial.	a) The number of archaeological features, institutions and collections subject to flooding. b) The impact of flood risk management measures on archaeological features, institutions and collections.	Review of County Development Plan designations and sensitive areas in the detail design stage

6 Conclusions and Next Steps

The SEA and AA process carried out during the preparation of the FRMP for the Munster Blackwater River Basin have ensured that the potential significant environmental impacts associated with the implementation of the Plan have been identified and have been given appropriate consideration during the development of the plan.

In accordance with the requirements of the EU 'Floods' Directive, the PFRA, flood maps and Plans will be reviewed on a six-yearly cycle, with the first reviews of the PFRA, maps and final Plans due by the end of 2018, 2019 and 2021 respectively.

The review of the flood maps on an ongoing basis and formally by the end of 2019, will take account of additional information received and/or physical amendments such as the construction of new infrastructure, and, where appropriate, the amendment of the flood maps.

This review of the Plans shall include any changes or updates since the publication of the Plans, including:

- A summary of the review of the PFRA and the flood maps, taking into account the potential impacts of climate change, including where appropriate the addition or removal of AFAs;
- An assessment of the progress made towards the achievement of the flood risk management Objectives;
- A description of, and an explanation for, any measures foreseen in the final version of the Plan which were planned to be undertaken and have not been taken forward;
- A description of any additional measures developed and/or progressed since the publication of the Plan.

The review of the Plan which will include assessments under SEA and Habitats Directives as appropriate, taking into account new information available at that time (e.g., as available from the Environmental Monitoring Framework and from the www.catchments.ie website), will be published in line with relevant legislation, following public and stakeholder engagement and consultation.

Appendices

Appendix A. Summary of Consultations _____ 31

Appendix A. Summary of Consultations

Ref No.	UoM	Submission Point	Response
114	18 & 19	<p>Kanturk - a significant area of storage is proposed on the River Dalua in option 2. This option which has found favour with the public seeking to retain weir structures within the town which are proposed removed in option 3.</p> <p>Local concerns over the loss of weirs affecting specific fishing spots is noted, however those concerns should also be weighed against potentially more significant negatives for the fisheries resource that may arise in pursuing option 2</p>	<p>The flood storage area will only come into action during a flood event. It is expected that the storage area will fill during the 50% AEP flood event (once every 2 years). When there is no flood the river channel will act as normal with no impediment to fish passage.</p>
115	18	Better co-ordination between the WFD and the FRMP is required	The OPW has been coordinating with the EPA and the D/HPCLG
115	18	WFD Exemptions are required for measures that will prevent good water quality status.	This is outside the scope of this SEA and will be assessed in detail at a project level. Section 6.6 of the FRMP sets out the progression of measures and assessment of future works.
115	18	Specific Natural flood risk management measures are not included in the FRMP	A specific measure for Natural Flood Risk Management is included in Section 7.4.1.5 of the final FRMP
115	18	Don't use fast growing grass on embankments, use appropriate riparian vegetation.	Riparian vegetation can promote burrowing animals. This is to be avoided.
115	18	There was not enough public participation in the process.	Public participation took place at all stages of the project. Details of the public participation are contained in section 4.4 of the final FRMP and Section 4 of the SEA Environmental Report
135	All	Flood defence works involve many types of physical modifications which can deteriorate and impair the hydromorphological conditions of water bodies including structure of the river bed and of the riparian zone. Hydromorphological elements support the biological elements, and both are quality elements for the classification of ecological status as described above. These physical modifications can result in changes to water flow and morphology and impair sediment dynamics, which in turn has many negative ecological impacts	The impact of the proposed works on the environment was considered in the SEA Environmental Report and Plan AA. Project level assessments as set out in Section 6.6 Progression of Measures and Assessment of Future Works of the final FRMP will be required prior to the installation or construction of any physical works.
135	All	It is to be welcomed that the plan recognises that land use can be managed so as to reduce runoff and also that it recognises the benefits that NWRMs can bring to other areas, including water quality and integrated catchment management. It is therefore disappointing that this broad recognition is not then reflected in any proposed measures	A revised measure description for Land use management and Natural Flood Risk Management is set out in Section 7.4.1.5 of the final FRMP
135	All	The full potential of taking an integrated catchment management approach has not been realised in the FRMP, as there has been a lack of full coordination with the WFD and integration and alignment with the development of the RBMP	The coordination with the Water Framework Directive has taken place and is described in Section 6.6 of the final Plan. A revised measures Land Use Management and Natural Flood Risk Management is set out in Section 7.4.1.5 of the final FRMP

Ref No.	UoM	Submission Point	Response
135	All	For all the Management Plans in the South West soft-engineering flood prevention measures should be utilised as much as possible so as to minimise disturbance of the river bed and its delicate ecosystems. We would also highlight again the need to ensure that there is an integrated catchment based approach with greater public participation.	A revised measure description for Land use management and Natural Flood Risk Management is set out in Section 7.4.1.5 of the final FRMP
143	18	Plan should look at community as well as wildlife	The impacts are assessed in the MCA under the social, environmental, technical and Economic criteria, as set out in Section 1.4.2 of the final FRMP.
143	18	Rathcormac- Resident believes that the ha-ha in Rathcormac is one of the finest examples of this type of structure in Ireland and to encase this with mass concrete, as outlined in the FRMP would be vandalism of local heritage	Potentially viable flood relief works identified for Rathcormac include Flow Diversion. These works consist of the diversion of flood flows from the Kilbrien Stream via a 1200mm diameter culvert to the Shanowen River
152	18	Youghal- Resident objects to the planned wall around the quay as it is not in keeping with the public realm plan for the area, will not fit in with the heritage plan and will be an eyesore in the area Wall will also disrupt local pastimes and tourism	The impacts are assessed in the MCA under the environmental criteria, as set out in Section 1.4.2 of the final FRMP.
162	18	Rathcormac- Council is concerned with the environmental impact of dredging the rivers. Currently the environmental assessment places all the emphasis on wild life in the rivers rather than the impact on the surrounding community	The MCA considers people, society and wildlife, see Section 1.4.2 Definition of the Flood Risk Management Objectives of the final FRMP
162	18	Rathcormac- Council do not believe that there is sufficient risk to flora and fauna within the stretch of streams and rivers that pass through communities and that dredging could take place at this point with minimal environmental impact. They also believe that their proposed solution would have less environmental impact than that proposed	River dredging could have an impact on the Blackwater SAC as sediment could be discharged to sensitive receptors. The potential impacts on the Natura 2000 sites were subject to Appropriate Assessment. Project level assessments, as set out in Section 6.6 Progression of Measures and Assessment of Future Works of the final FRMP, will be required prior to the installation or construction of any physical works.

Ref No.	UoM	Submission Point	Response
162	18	Rathcormac- When existing culverts and gullies are not maintained appropriately this has a more devastating impact on flora and fauna with manmade and natural detritus polluting the water	Noted in the Public consultation outcomes Section of Appendix G.4 of the final FRMP
241	All	Cultural heritage. It is recommended that a detailed assessment is carried out of all proposed works within the study area. This assessment shall be licensed to the DAHRRGA.	All proposed works will be assessed further at project stage. Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	Kanturk- Impacts on the Blackwater SAC in the storage area are not known. It is unwise to conclude that there will be no adverse effects in the absence of field survey.	This is a plan stage assessment. Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	Kanturk- Effects on spawning habitat should not be ruled out. These species should be added to the list on p20.	This is a plan stage assessment. Section 6.6 of the FRMP sets out progression of measures and assessment of future works. The Dalua River and the Allow River have strong depositional features on approach to Kanturk with numerous meanders and large sediment banks evident. Degradation of fishery habitat due to sediment runoff from embankment material depositing within the watercourse is extremely unlikely given the existing condition of the watercourse.
241	18	Kanturk- The impact of prolonged flooding on trees in the storage area should be assessed.	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	Kanturk- The maintenance of the storage area should be assessed.	The operation of the storage was considered during the extreme flooding events. Maintenance of the storage area will be considered further at project level assessment Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	Kanturk -Details of the operation of the storage area are not included in the assessment. These need to be assessed.	The operation of the storage was considered during the extreme flooding events. Maintenance of the storage area will be considered further at project level assessment Section 6.6 of the FRMP sets out progression of measures and assessment of future works.

Ref No.	UoM	Submission Point	Response
241	18	Kanturk -There may be crowfoot starwort in the storage area.	SEA ER and NIS has been updated to include additional mitigation. Mitigation is also updated in Section 6 of the final FRMP
241	18	Kanturk - The negative impact on fisheries of this option could be mitigated with the installation of groynes and pools. This option could represent a win win situation and should be considered.	The possibility has been recorded in the final FRMP
241	18	Youghal -Pile driving should be avoided during winter months.	Chapter 10 of the SEA ER and NIS and FRMP have been updated. Legislation pathways for securing consent for a project is outlined in Section 3.6 of the SEA ER
241	18	Youghal -Temporary works that may impact on sand next to quay walls need to be considered.	Chapter 10 of the SEA ER and NIS and FRMP have been updated. Legislation pathways for securing consent for a project is outlined in Section 3.6 of the SEA ER
241	18	Ballyduff - Construction machinery should only enter the SAC when necessary.	Chapter 10 of the SEA ER and NIS and FRMP have been updated. Legislation pathways for securing consent for a project is outlined in Section 3.6 of the SEA ER
241	18	Ballyduff - The impact of flooding of the wastewater tank needs to be considered under in combination effects.	Chapter 10 of the SEA ER and NIS and FRMP have been updated. Legislation pathways for securing consent for a project is outlined in Section 3.6 of the SEA ER
241	18	Youghal - Disturbance of birds wintering in the Cork Harbour SPA needs to be avoided.	Chapter 10 of the SEA ER and NIS and FRMP have been updated. Legislation pathways for securing consent for a project is outlined in Section 3.6 of the SEA ER

Ref No.	UoM	Submission Point	Response
241	18	Youghal -Impact on the Great Island SAC needs to be considered	Chapter 10 of the SEA ER and NIS and FRMP have been updated. Legislation pathways for securing consent for a project is outlined in Section 3.6 of the SEA ER
241	18	The SEA needs to indicate if an EIS is necessary to carry out the works.	Planning and development management decisions are a matter for the planning authorities. There is a specific measure <i>Sustainable Planning and Development Management</i> in Section 7.4.1.1 of the final FRMP
241	18	Otter survey is required to assess if otters will be impacted on by the works.	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	Mitigation for pollution from silt needs to be mentioned in the SEA.	SEA ER and NIS has been updated to include additional mitigation. Mitigation is also updated in Section 6 of the final FRMP
241	18	Flora on Quay walls needs to be assessed.	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	Impact on Daubenton's bat needs to be considered	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	The impact of the works on betony will have to be assessed	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	The impact of pile driving on protected species will have to be assessed.	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.

Ref No.	UoM	Submission Point	Response
241	18	The impact on otters needs to be assessed	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	If works are to proceed here, the impact on the SAC needs to be assessed.	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
241	18	If works are to proceed here, the impact on otters needs to be assessed.	Detailed surveys and assessments will be carried out at project level in order to inform detailed design and construction methodologies . Section 6.6 of the FRMP sets out progression of measures and assessment of future works.
	18	It is incorrect to say that the FPM population is not reproducing/ recruiting	The Plan NIS has been updated to reflect this comment.
	18	It is incorrect to say that there is no potential for cumulative impacts as maintenance operations have already had an impact.	The Plan NIS has been updated to reflect this comment.
248	All	There is a need for national coordinated oversight to ensure that the MCA methodology has been applied and followed through in a consistent manner across the CFRAM series of studies and Plans	The process was overseen by the OPW. The methodology was discussed at a National Technical Coordination Group by the CFRAM studies consultants and the OPW.
248	All	The Adaptation Strategy Guideline should be referenced in the Flood Risk Prevention Methods section of the Plans	The guidelines are referenced in Section F.1.4 Preparation of Local Adaption Planning of the final FRMP
248	All	Relevant water related infrastructure, including for example storm-water-overflows and sedimentation ponds and building design standards, should be reviewed and updated as appropriate to reflect the modelling and risk assessment in the CFRAM Studies. This should be included as a specific measure in the plans.	This is outside the scope of the FRMP

Ref No.	UoM	Submission Point	Response
248	All	The use of green infrastructure strategies to manage flood risk should be explored by the Local Authorities. Existing strategies should be taken into account in the measures in the plan and updated in line with the findings in the plans.	NFM measures are described in the plan. These may augment measures proposed in the plan but would not alter them. They could , if adopted contribute to the mitigation of the risk associated with climate change.
248	All	It is recommended that the development of CFRAM/Plan Specific Flood Preparedness Strategies be considered as an action / measure in the Plans.	A specific measure for flood preparedness strategies is included in Section 7.4.1.5 of the final FRMP
248	All	The Plans should include a more detailed description of the linkages between the Water Framework Directive (WFD) and the Floods Directive and their respective Plans	The relationship and coordination with the WFD is outlined in Section 6.5 Consultation with Water Framework Directive of the final FRMP and is summarised in section 4 of the SEA ER.
248	All	The preferred measures selected in the Plans should not compromise the requirements of the WFD. Mitigation measures need to be described in more detail.	Additional mitigation measures have been included with Chapter 10 of the SEA ER and summarised in Section 6 of the final FRMP
248	All	The Plans should examine the interrelationships between the proposed flood risk management measures and the WFD Programmes of Measures for individual water bodies	The impact of the proposed measures on the potential of a water body from achieving good status is assessed in the MCA. Other assessment would stray from the nationally agreed methodology.

Ref No.	UoM	Submission Point	Response
248	All	The Plans should include a detailed account of how the SEA and HDA processes have influenced and informed their preparation.	This has been set out in Section 6.1 of the final FRMP
248	All	A summary of alternatives considered and the justification for selection of the preferred approach should also be provided.	This is set out in Section 7 of the final FRMP and summarised in Section 9 of the SEA ER
248	All	Each Plan should include in the title the timescale over which the Plans will be operational.	Monitoring programme is set out in Section 10 of the SEA ER and Monitoring is proposed in Section 8 of the final FRMP
248	All	The SEA ERs for all Plans should include the information set out in Annex I (a) to (j) of the SEA Directive. The full range of effects on the environment should be assessed and reported on.	This has been considered and addressed in the SEA and summarised in Section 3.3.5 of the SEA ER
248	All	The non-technical summary (NTS) should reflect the information required under Annex II of the SEA Directive. Suitable maps and Figures and summary tables should be included as appropriate.	NTS includes information as set out in Annex II.
248	All	Where SEA-related environmental topics are scoped out of the assessment, this should be explained along with the relevant justification	Approach and methodology of Scoping was agreed during scoping consultation stage. This is set out in Section 3.3.4 of the SEA ER
248	All	The SEA ERs should reflect the relevant updated information in the EPA publication Ireland's Environment 2016.	Section 6 of the SEA ER has been updated to include this reference.
248	All	The implementation and monitoring of the plan should be reviewed mid cycle.	Section 10 of the SEA Environmental Report has been updated and Section 8 of the final FRMP sets out how the plan will be implemented monitored and reviewed.
248	All	The Plans and SEA ERs should include and consider, where appropriate, the most recently available information on flooding within the individual Plan areas.	The Plans and SEA ER have included and considered all information on flooding that could feasibly be used.

Ref No.	UoM	Submission Point	Response
248	All	In describing the key environmental characteristics of the Plan area, where relevant, a description of existing environmental problems associated with specific topics should be included.	key environmental characteristics have been addressed in section 6 of the SEA ER
248	All	For each environmental topic included within the scope of the assessment, a description should be provided on the evolution of the specific topic in the absence of the Plan.	key environmental characteristics have been addressed in section 6 of the SEA ER
248	All	Where data gaps or technical deficiencies have been encountered during the SEA process, these should be highlighted along with the implications for the Plan and the SEA.	Section 3.7 of the SEA has been updated to reflect this comment.
248	All	Where the preferred MCA option is not selected, clear justification should be provided for the selection of the preferred alternative	This is set out in Section 8 of the Assessment of alternatives of the SEA ER.
248	All	Where there is potential for significant cumulative negative effects associated with implementation of the Plans, this should be acknowledged in the SEA ERs and also reflected in the Plans	Cumulative and in combination effects are addressed in Section 9.7of the SEA ER
248	All	The potential impacts of the Plans on wider biodiversity including fisheries should be considered	This is considered in the MCA under biodiversity/fisheries resources and is an SEA objective
248	All	It would be useful to clarify the extent to which flood prevention options such as re-zoning or de-zoning existing undeveloped local authority zoned lands at high risk of flooding has been considered.	Planning and development management decisions are a matter for the planning authorities. There is a specific measure Sustainable Planning and development management in Section 7.4.1.1 of the Final FRMP
248	All	Reference should be included to a number of key relevant national and sectoral plans/programmes, some of which are in preparation and will be finalised during the lifetime of the Plans.	Section 4 of the SEA ER has been updated to reflect this comment.
248	All	Where significant adverse environmental impacts are identified for the preferred options, where possible, detailed descriptions of Plan-level mitigation measures should be provided.	Mitigation measures will be developed in more detail at the project stage. Where specific mitigation is referenced in the NIS this is included in the SEA Environmental Report and Section 6.3.3 of the final FRMP
248	All	The Plans and SEA ERs should promote a standardised approach to the application of appropriate buffer zones between features of biodiversity and proposed projects.	Mitigation measures have been added to Section 6.3.3 of the final FRMP

Ref No.	UoM	Submission Point	Response
248	All	The proposed Monitoring Framework should incorporate trigger levels for specific environmental aspects which would determine when remedial actions would need to be implemented in response to adverse effects identified.	Mitigation and Monitoring proposed in the SEA ER and NIS. Monitoring is included in Section 8 of the FRMP.
248	All	Monitoring of the effectiveness of mitigation measures required to be put in place should be captured in the overall Monitoring Framework.	Mitigation and Monitoring proposed in the SEA ER and NIS. Monitoring is included in Section 8 of the FRMP.
248	All	The relevant key findings and recommendations in the HDA should be incorporated into the SEA ERs and the Plans.	Mitigation and Monitoring proposed in the SEA ER and NIS. Monitoring is included in Section 8 of the FRMP.
248	All	Greater certainty should be provided to demonstrate that the flood management measures proposed, along with relevant mitigation, where required, will not adversely affect the integrity of European sites.	FRMP options were subject to appropriate Assessment and where potential for significant effects were uncertain for a proposed option these were progressed to Stage 2. Legislative pathways for securing consent for a project was set out in the SEA Environmental Report and NIS. Each scheme is subject to Appropriate Assessment a project level. Information on progression of measures and assessment of future works also provided in Section 6.6 of the final FRMP
248	All	It should be clarified whether the preferred options/measures will introduce additional channel modifications,	This is described in the option description as set out in Appendix G Description of potentially viable flood relief works of the final FRMP.
248	All	If the impact of the option on hydromorphology is considered to be insignificant, this should be stated with reasons why.	The impacts are assessed in the MCA under the environmental criteria, as set out in Section 1.4.2 of the final FRMP.
248	All	The Plans should address the potential for increased sediment in receiving water bodies during on-going channel maintenance activities arising out of any preferred options/measures	The impacts are assessed in the MCA under the environmental criteria, as set out in Section 1.4.2 of the final FRMP.

Ref No.	UoM	Submission Point	Response
248	All	The SEA ERs and Plans should emphasise the requirements for the protection of existing and proposed critical service infrastructure (wastewater, waste, drinking water, electricity etc.) from risk of flooding	The impacts are assessed in the MCA under the economic criteria, as set out in Section 1.4.2 of the final FRMP.
122	All	OPW need to explain how they are currently working with the EPA on the co-ordination of the WFD and the FD projects.	The relationship and coordination with the WFD is outlined in Section 6.5 Consultation with Water Framework Directive of the final FRMP and is summarised in section 4 of the SEA ER.
122	All	Reference should be made to the EIA (Agricultural) Regulations 2011 and the Planning & Development (Amendment) (No. 2) Regulations	Reference is made in Section 5 of the SEA Environmental Report
122	All	A review of Recommendations for Site development Works for Housing Areas is urgently required in the context of SUDS.	This is a matter for DHPCLG
122	All	The impact of the maintenance of arterial drainage schemes on water bodies as a whole needs to be included in the FRMP. Was this assessed in the MCA?	Arterial Drainage Schemes are referenced in the Plans as existing flood risk management measures.
122	All	How is proposed to enhance natural features that perform a flood defence function	This will be considered at the next stage of development of measures.
122	All	It is disappointing that NFM measures are not included in the plan.	A revised measure Land use management and Natural Flood Risk Management is set out in Section 7.4.1.5 of the final FRMP
122	All	There has been a lack of co-ordination between the WFD and the FRMP	The relationship and coordination with the WFD is outlined in Section 6.5 Consultation with Water Framework Directive of the final FRMP and is summarised in section 4 of the SEA ER.
122	All	There is an over reliance on structural measures.	Structural measures are required to achieve the target standard of protection. NFM measures cannot achieve this on their own. NFM could offset the impact of predicted climate change.
122	All	Structural measures should be adapted to take account of WFD obligations.	Scheme design will aim to ensure WFD objectives are not compromised. To that end the watercourses affected by the scheme will be subject to a River Hydromorphology Assessment Technique Survey (RHAT) for pre and post scheme scenarios.

Ref No.	UoM	Submission Point	Response
122	All	The approach taken in "Farming floodplains for the future" should be included in the FRMP	A revised measure Land use management and Natural Flood Risk Management is set out in Section 7.4.1.5 of the final FRMP



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