

Strategic Environmental Assessment Statement

Bandon – Ilen

Strategic Environmental Assessment Statement

For

River Basin (20) Bandon – Ilen Flood Risk Management Plan

Areas for Further Assessment included in the Plan:

<i>Droichead na Bandan</i>	<i>Bandon</i>
<i>Cloich na Coillte</i>	<i>Clonakilty</i>
<i>Dún Mánmhaí</i>	<i>Dunmanway</i>
<i>Inis Eonáin</i>	<i>Inishannon</i>
<i>An Sciobairín</i>	<i>Skibbereen</i>
<i>An Scoil</i>	<i>Schull</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 Bandon Ilen River Basin, also known as Unit of Management 20 (UoM 20), which is located in the South Western River Basin District.

The 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 20 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.

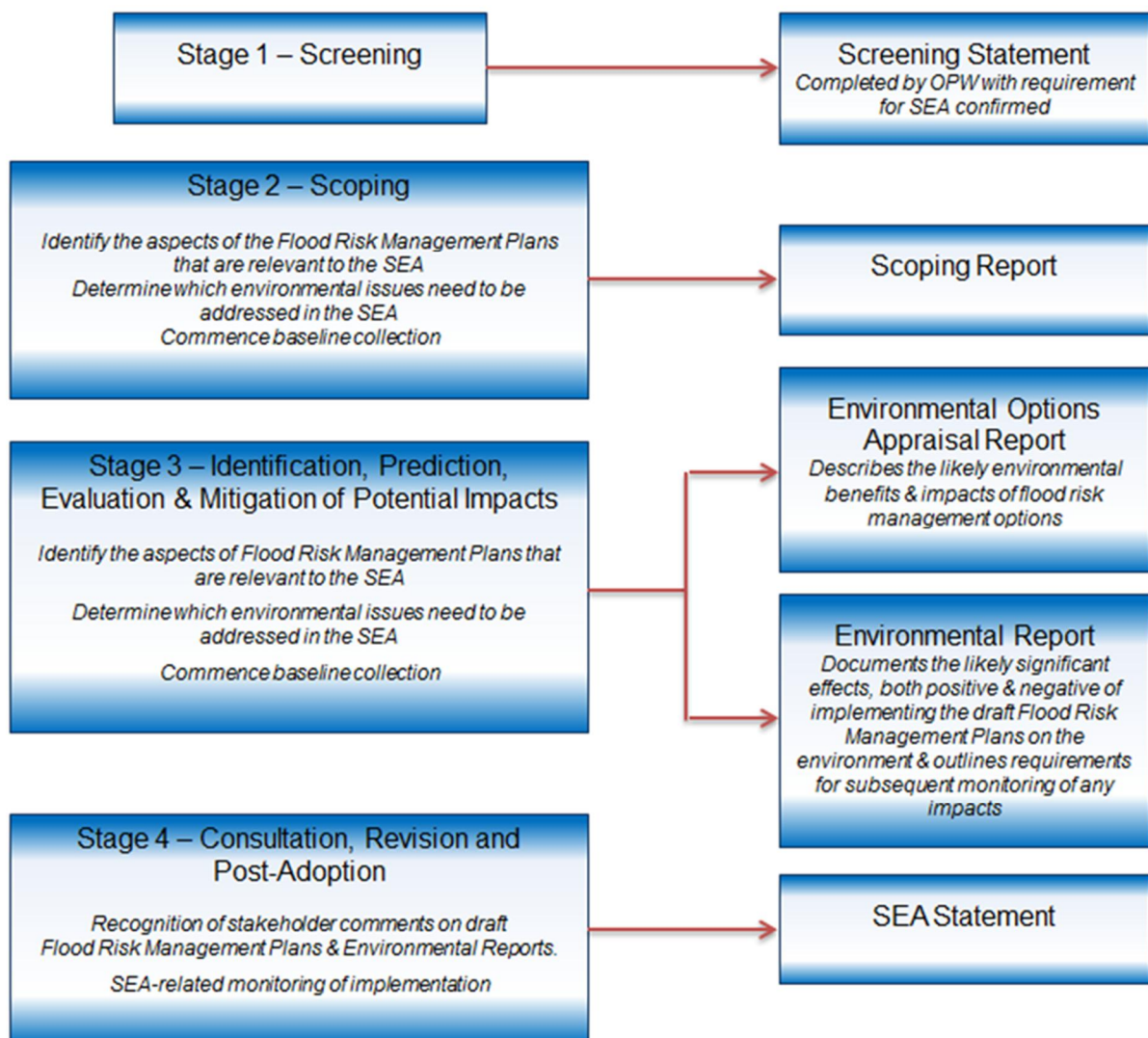
SEA in Ireland is based on *Directive 2001/42/EC (Assessment of the Effects of Certain Plans and Programmes on the Environment)*, more commonly known as the "SEA Directive".

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:

- i 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;
- i The FRMPs will be carried out for 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;
- i The FRMPs will form a framework for future projects and allocation of resources concerning reduction of flooding risk;
- i The FRMPs will influence spatial plans at both regional and local level;
- i 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 River Basin District was prepared and presents the following details:

- i 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;
- i 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;
- i 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 UoM 20 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 Bandon-Ilen River Basin which is located in the 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 Strategic environmental 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 20 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 Bandon-Ilen River Basin covers an area of approximately 1,796 km². The entire area of the Bandon-Ilen River Basin is within County Cork. The main rivers are the Bandon, the Ilen and the Argideen.

As part of this study, there are six Areas for Further Assessment (AFAs) within the Bandon-Ilen River Basin. Associated with the AFA's is over 46km of high and medium priority watercourse. Of these AFAs, Clonakilty CFRAM has been progressed as an accelerated works and is therefore excluded from this study. The development of Clonakilty has been assessed and reported separately. It should also be noted that the Bandon Flood Relief Scheme, which is within UoM20, is also progressed as an accelerated scheme and outside the scope of this study. High priority watercourses are any modelled watercourse within an AFA. Medium priority watercourses are all other modelled watercourses.

Table 2.1: AFAs within UoM20

UoM	Name	Unique ID	Fluvial	Coastal	County	Easting	Northing	Viable Structural Options
20	Clonakilty	200294	Yes	Yes	Cork	138000	41250	Not part of this study
20	Dunmanway	200297	Yes	No	Cork	122250	52750	Yes
20	Inishannon	200298	Yes	No	Cork	155000	57000	Yes
20	Schull	200303	Yes	No	Cork	92500	31500	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 map;

- Strategic Environmental Assessment and a 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 UoM20.

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.

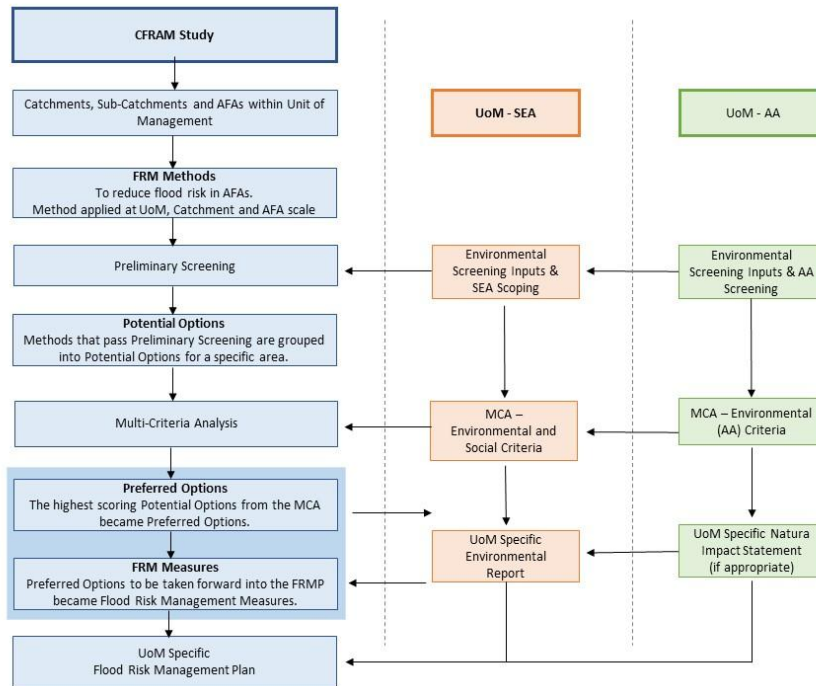
Following consideration of observations made in response to the public and statutory consultation on the Draft Plan, including comments received on the SEA Environmental Report and the Natura Impact Statement, the final Plan has been prepared.

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 UoM20. The SEA assessment also identified that the non-structural measures proposed for the UoM20 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 Dunmanway is Flood Defences.
- ┆ The preferred option for Innishannon is Flood Defences.
- ┆ The preferred option for Schull is Culvert and Flow Diversion.

Section 10 of the SEA Environmental Report outlines the mitigation measures proposed to be included in the Plan for each AFA within UoM20.

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

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

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;

- | Relevant legislation;
- | The flood Risk Management Plan (FRMP) and SEA and AA;
- | Environmental Impact statements, Appropriate Assessments, Conditions of Planning Approval;
- | Recommendations set out by statutory authorities, IFI, NPWS, and EPA;
- | Recommendations of surveys conducted under Section 25 of the Flood Risk Regulations;
- | 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:

- | Construction Industry Research and Information Association (CIRIA) 'Control of Water Pollution from Construction Sites, Guidance for Consultants and Contractors' (CIRIA, 2001);
- | CIRIA C648: Control of water pollution from linear construction projects: Technical guidance (Murnane et al. 2006);
- | CIRIA C649 Control of Water Pollution from Linear Construction Projects: Site Guide (Murnane et al. 2006);
- | Inland Fisheries Board 2016/ 4298 Guidance Document "Guidelines on protection of fisheries during construction works in and adjacent to waters";
- | UK Environment Agency: Pollution Prevention Guidelines; and
- | 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;
- i The identification of newly available data e.g. aggregate potential mapping, aquifer storage / recharge data;
- i The requirement of the SEA objectives to include the protection of geological heritage, all protected habitats and species (not just Natura 2000 sites);
- i The requirement to consider the interactions between the Flood Risk Management Plan and previously unidentified plans including those currently in draft format;
- i 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 Bandon-Ilen 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 Bandon-Ilen 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 Bandon-Ilen River Basin as published for the purposes of public consultation on 15 July 2016. The draft Plan was accompanied by the draft SEA Environmental and where applicable a draft NIS. Observations from the public and from relevant Local Authorities were to be 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 Bandon-Ilen River Basin were held in relation to the Draft Plans at the venues listed in Appendix D.7 in the FRMP.

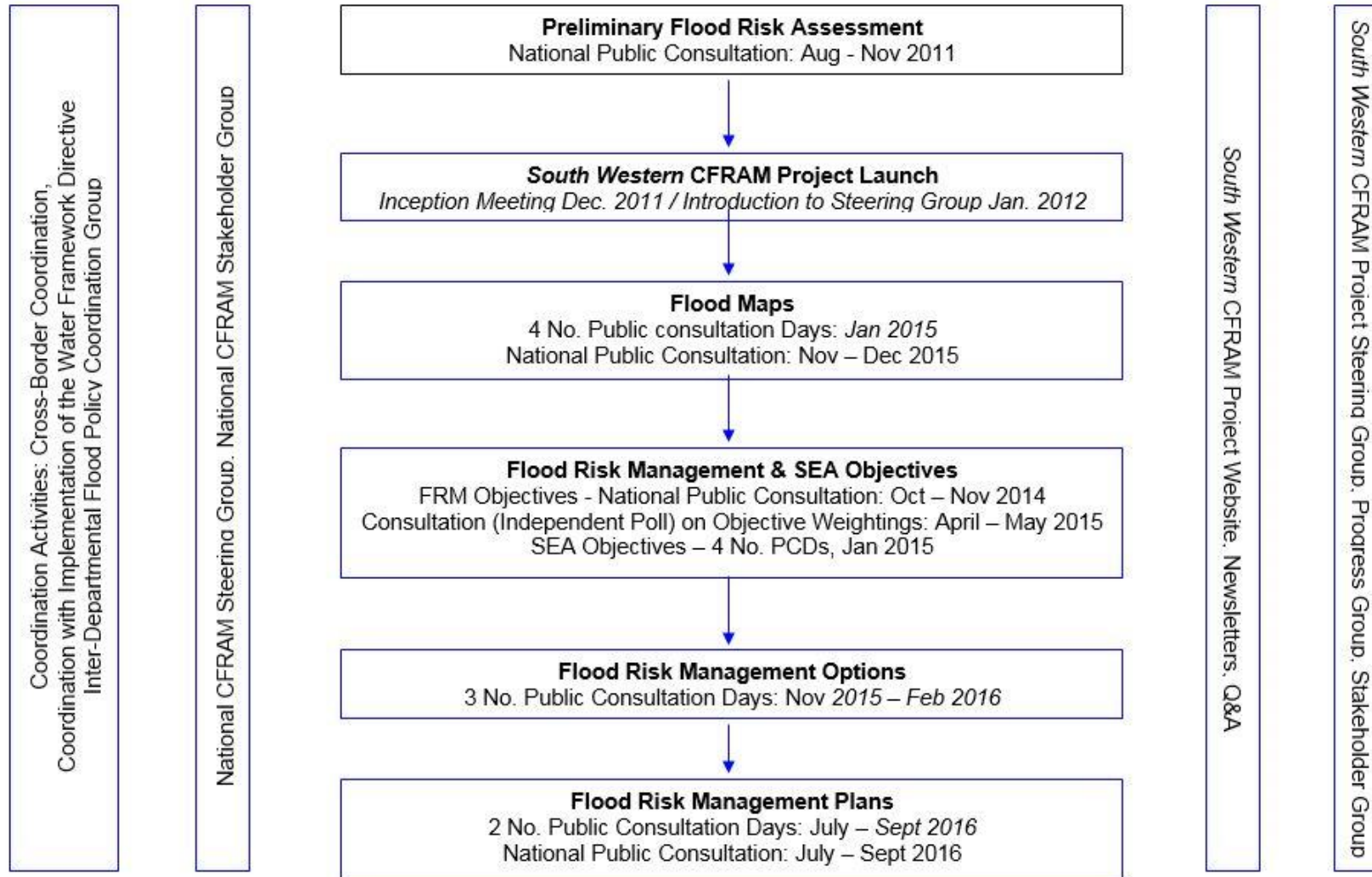
The observations submitted to the OPW through the public consultation processes were considered and the Plans and accompanying environmental assessments amended accordingly where appropriate. A synopsis of the observations submitted and amendments made to the SEA and NIS arising from the observations 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 FRMP 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 4 Arterial Drainage Schemes and existing flood relief schemes within the Bandon-Ilen 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

Measure Theme	Measure Name	Details	Implementation
Protection	Maintenance of Drainage Districts	There are 3 No. Drainage Districts within the Bandon-Ilen River Basin, namely the Clonakilty DD, the Myles & Templebryan DD and the Owenkeagh DD. The local authorities have a statutory duty to maintain the Drainage Districts, and this Plan does not amend these responsibilities to provide additional flood relief. The Plan therefore does not set out additional measures in relation to the maintenance of Drainage Districts	Local Authority
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 Innishannon AFA Measures

Potentially viable flood relief works for Innishannon that are proposed in the FRMP include Flood Defences. The proposed flood relief works consist of walls and embankments with a maximum height of 2.0m along the River Bandon. The feedback at the Public Consultation Day at Optioneering stage was in support of Flood Defences. These potentially viable flood relief works are expected to provide protection against a 100-Year flood (1% Annual Exceedance Probability).

4.2.2.2 Schull AFA Measures

Potentially viable flood relief works proposed in the FRMP include a Culvert and Flow Diversion. The potentially viable flood relief works consists of the construction of a new culvert along the Schull Stream, located along the road and diversion of the Meenvane Stream to an alternative watercourse via a flow diversion culvert. The feedback at the Public Consultation Day at Optioneering stage was in support of the Culvert & Flow Diversion.

4.2.2.3 Dunmanway AFA Measures

Potentially viable flood relief works identified in the FRMP for Dunmanway include Flood Defences. The proposed flood relief works consists of the walls and embankments on the Brewery and Dirty River to protect vulnerable properties. The walls will be to a height of 1.1m and the embankments will range from 1.0 – 2.0m in height. The limited feedback at the Public Consultation Day at Optioneering stage was in support of 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 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 South Western 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 _____ 30

Appendix A. Summary of Consultations

Ref No.	UoM	Submission Point	Response
53	19, 20 & 21	<p>The EIS may need to address the following:</p> <p>1. Assessment of Existing Conditions, both within the proposed works area and to the limits of the zone of influence of any proposed works may require the following data:</p> <p>a) Mapping the range , location and extent of each aquatic habitat type e.g.. pools, nursery and spawning beds</p> <p>b) Redd counting in the proposed study area and upstream to the limits of the zone of influence of any proposed works</p> <p>c) Mapping of both the extent and nature of bankside vegetation, highlighting in particular all areas subject to river bank erosion at present</p> <p>d) A complete stock survey of all fish species</p> <p>e) Characterisation and quantification of each habitat area, identified in (a), based in its macro invertebrate population</p> <p>f) Detailed assess and characterisation of all potentially impacted channels in terms of their surface and sub-surface sedimentology</p>	<p>Each scheme must be subjected to project level assessment under the relevant legislation for consenting the project. 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. Section 3.6 of the SEA Environmental Report sets out the legislative pathways for a project</p>
53	19, 20 & 22	<p>2. Impact Assessment</p> <p>The following requirements apply from a fisheries perspective in relation to impact assessment of any proposed works:</p> <p>a) Quantification of habitat losses and the impact on both flora and fauna</p> <p>b) Impact of any proposed works on fish stock densities for each species</p> <p>c) Changes in flow dynamics, the consequent impact on fish migrations and the loss of opportunity for fish movement</p> <p>d) Compatibility of any proposed measures with existing legislative requirements</p>	<p>Each scheme must be subjected to project level assessment under the relevant legislation for consenting the project. 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. Section 3.6 of the SEA Environmental Report sets out the legislative pathways for a project</p>
97	20	<p>Dunmanway- Option 1 Flood defences: "The construction of this option may require excavation of the bank of the Brewery River could result in temporary negative impacts on the water body status without appropriate mitigation, resulting from sedimentation, accidental pollution and loss of riparian habitat." Yes I agree with this statement. I think, as already suggested, that major construction works should be avoided. I agree with the idea of a storage area but I think there are other ways of diverting water than the building of banks. An over-river culvert that only catches the flow when the river is at flood would suffice to divert flood waters into a safe zone. I do not think this area should be excavated. A natural site could be identified in a field survey</p>	<p>The impacts are assessed in the MCA under the environmental, technical and economic criteria, as set out in Section 1.4.2 of the final FRMP.</p> <p>Flow diversion was considered as part of this study. This was not cost beneficial</p>

Ref No.	UoM	Submission Point	Response
97	20	Dunmanway -There was no mention of lampreys, an important species with particular needs. "The Dunmanway flood scheme took place directly upstream of and also within the vicinity of the Freshwater Pearl Mussel populations in the catchment and was likely to have caused significant direct and indirect damage to Freshwater Pearl Mussel, lamprey and salmonid populations in this catchment." from https://lampreysurveys.com/2015/11/09/bandon-flood-scheme/	The final FRMP concluded that the preferred option (and all alternative viable options) were not economically viable. i.e. no flood risk management options have been determined for Dunmanway AFA
97	20	Dunmanway- Overall I think the approach is all wrong. I appreciate that people are crying out for flood defences and I saw the devastation wrought on Bandon in recent years, but the current plan will cost too much and will not work. Dredging and channelling only increase a river's destructive power and thereby makes flooding worse. In England they are beginning to try soft-engineering to good effect. See here: http://www.forestry.gov.uk/fr/slowingtheflow and the results were quite promising last year: https://www.theguardian.com/environment/2016/apr/13/500000-tree-planting-project-helpedyorkshire-town-miss-winter-floods	A revised measure describing Land Use Management and Natural Flood Risk Management is set out in Section 7.4.1.5 of the final FRMP
114	20 & 19	Due to the likelihood that flood events will arise in the winter when both salmon and trout spawning activities occur, there exists the potential for negative effect on salmonid spawning recruitment within the river channel contained in the storage area. Salmon spawn situated in the storage area will lose the water flow by which they get oxygenated and also cause potential smothering of the spawn as sedimentation build up occurs	The flood storage area will only come into action during a flood event. When the flood passes the storage area will empty. This is no more a barrier to fish passage than dry weather.
116	20	Better co-ordination between the WFD and the FRMP is required	The coordination with the Water Framework Directive has taken place and is described in Section 6.6 of the final Plan. Stakeholder Consultation is set out in Section 4 of the SEA Environmental Report
116	20	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.
116	20	The impact that the maintenance of drainage schemes has on water quality should be assessed as part of the FRMP	This is a Plan Stage assessment. The impact that the maintenance of drainage schemes have on water quality will be assessed at the Project Stage
116	20	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

Ref No.	UoM	Submission Point	Response
116	20	The incorrect option for Dunmanway is in the SEA and the NIS	The SEA and NIS state that there is no viable option for Dunmanway.
116	20	Don't use fast growing grass on embankments, use appropriate riparian vegetation.	Riparian vegetation may promote burrowing animals in embankments. This is to be avoided. Mitigation measures have been added to Section 10 of the SEA Environmental Report and Section 8 of the final FRMP
116	20	They object to the culverting of the Meenvane Stream in Schull. This could have a significant impact on fish passage and degrade the ecology and restrict movement of Otters	The Meenvane stream is unlikely to have potential for juvenile habitat for fish species. However this will be assessed at Project Stage.
116	20	There was not enough public participation in the process.	We engaged with the public at all stages of the process to get their views on where the flood risk was and how to manage it. Section 4.4 outlined the public consultation process engaged throughout the plan process
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
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
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.

Ref No.	UoM	Submission Point	Response
241	20	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	20	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	20	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	20	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	20	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	20	The assessment of the Dunmanway scheme needs more work. It is recommended that the plan as currently worded is not adopted until this assessment is complete.	The maintenance of the Existing Dunmanway scheme is subject to a separate AA. The Final FRMP does not propose any physical works in the Dunmanway AFA.
SUB:16-241	21	Will pile driving be required as part of 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	20	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.

Ref No.	UoM	Submission Point	Response
241	20	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.
241	20	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	20	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	20	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.
241	20	It is not correct to say that there are no FPM downstream of the Long Bridge	The Plan NIS has been updated to reflect this comment.
	20	It is incorrect to say that the FPM population is not reproducing/ recruiting	The Plan NIS has been updated to reflect this comment.
	20	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
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.

Ref No.	UoM	Submission Point	Response
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.
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.

Ref No.	UoM	Submission Point	Response
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.
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	Cumulative and in combination effects are addressed in Section 9.7 of 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	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
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	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.

Ref No.	UoM	Submission Point	Response
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.
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.)	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.

Ref No.	UoM	Submission Point	Response
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	20	Innishannon - A project specific EIA is required for Innishannon as the river Bandon hosts Salmon and freshwater pearl mussels.	Each scheme must be subjected to project level assessment under the relevant legislation for consenting the project. 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
122	20	The works could have an impact on Otters. A stage II AA is required.	Each scheme must be subjected to project level assessment under the relevant legislation for consenting the project. 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
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.
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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