

Appropriate Assessment Screening Report

Nanny – Delvin

Appropriate Assessment Screening Report

For

River Basin (08) Nanny – Delvin Flood Risk Management Plan

Areas for Further Assessment included in the Plan:

<i>Domhnach Bat</i>	<i>Donabate</i>
<i>Port Reachrann</i>	<i>Portrane</i>
<i>Cill Dhéagláin</i>	<i>Ashbourne</i>
<i>Baile Brigín</i>	<i>Balbriggan</i>
<i>Baile an Bhiataigh</i>	<i>Bettystown</i>
<i>Baile Mhic Gormáin</i>	<i>Gormanston</i>
<i>Damhliag</i>	<i>Duleek</i>
<i>Na Sceirí</i>	<i>Skerries</i>
<i>Lusca</i>	<i>Lusk</i>
<i>Baile Stafaird / Tuirbhe</i>	<i>Staffordstown / Turvey</i>
<i>An Seanbhaile</i>	<i>Oldtown</i>
<i>Ráth Tó</i>	<i>Ratoath</i>
<i>Sord</i>	<i>Swords</i>
<i>An Ros</i>	<i>Rush</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.

Copyright

Copyright - Office of Public Works. All rights reserved. No part of this report may be copied or reproduced by any means without prior written permission from the Office of Public Works.

Maps in the Report include Ordnance Survey of Ireland (OSI) data reproduced under licence.

Acknowledgements

The Office of Public Works (OPW) gratefully acknowledges the assistance, input and provision of data by a large number of organisations towards the implementation of the National CFRAM Programme. In particular, the OPW acknowledges the assistance of RPS Consulting Engineers and the valuable input and support of the Local Authorities at project level in each of the study areas.

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

Eastern CFRAM Study

UoM08 Flood Risk Management Plan

Screening for Appropriate Assessment

Document Control Sheet

Client:	The Office of Public Works
Project Title:	Eastern CFRAM Study
Document Title:	Eastern CFRAM Flood Risk Management Plan – Screening of UoM08 Flood Risk Management Plan for Appropriate Assessment
Document No:	IBE0600_Rp00081_F01

Text Pages:	37pp	Appendices:	0 No.
-------------	------	-------------	-------

Rev.	Status	Date	Author(s)	Reviewed By	Approved By
D01	Draft	14 th Sept 2017	SM <i>S. McKenna</i>	RB <i>Richard Bignall</i>	MM <i>N. J. McKenna</i>
F01	Final	22 nd Sept 2017	SM <i>S. McKenna</i>	RB <i>Richard Bignall</i>	MM <i>N. J. McKenna</i>

Copyright

Copyright - Office of Public Works. All rights reserved. No part of this report may be copied or reproduced by any means without prior written permission from the Office of Public Works.

LEGAL DISCLAIMER

Is le haghaidh comhairliúcháin amháin atá na dréacht-Phleananna um Bainistiú Priacal Tuile ceaptha. Ní ceart iad a úsáid ná brath orthu chun críche ar bith eile ná mar chuid de phróiseas cinnteoireachta. Féadfar iad a uasdhátú, a bheachtú nó a athrú sula gcríochnófar iad. Is ceartas forchoimeádtha é ag Coimisinéirí na nOibreacha Poiblí in Éirinn athrú a dhéanamh ar an ábhar agus/nó cur i láthair d'aon chuid den bhfaisnéis atá curtha ar fáil ar na dréacht-Phleananna um Bainistiú Priacal Tuile ar a ndiscreíd féin amháin.

The draft Flood Risk Management Plans are intended **for the purpose of consultation only**. They should not be used or relied upon for any other purpose or decision-making process. They are likely to be updated, refined or changed before finalisation. The Commissioners of Public Works in Ireland reserve the right to change the content and/or presentation of any of the information provided in the draft Flood Risk Management Plans at their sole discretion.

ACKNOWLEDGEMENTS

The Office of Public Works (OPW) gratefully acknowledges the assistance, input and provision of data by a large number of organisations towards the implementation of the National CFRAM Programme and the preparation of this Flood Risk Management Plan, including:

- RPS Consulting Engineers
- WFD Local Authorities Water and Communities Office LAWCO
- Cavan County Council
- Dún Laoghaire - Rathdown County Council
- Dublin City Council
- Fingal County Council
- Kildare County Council
- Louth County Council
- Meath County Council
- Offaly County Council
- South Dublin County Council
- Westmeath County Council
- Wexford County Council
- Wicklow county Council
- Mid-East Regional Authority
- Dublin and Mid-Eastern Regional Authority
- The Environmental Protection Agency
- Met Éireann
- All members of the National CFRAM Steering and Stakeholder Groups

Maps in the FRMP include Ordnance Survey of Ireland (OSI) data reproduced under licence.

TABLE OF CONTENTS

1	INTRODUCTION AND BACKGROUND.....	1
1.1	LEGISLATIVE CONTEXT	1
2	APPROACH.....	4
2.1	GUIDANCE	4
2.2	APPROACH USED IN THIS EXERCISE.....	5
3	DESCRIPTION OF THE PLAN.....	6
3.1	THE CFRAM PROGRAMME.....	6
3.2	SPATIAL SCOPE OF THE PLAN	8
3.3	ELEMENTS OF THE NANNY – DELVIN RIVER BASIN FRMP WITH POTENTIAL TO CAUSE ADVERSE IMPACTS ON EUROPEAN SITES	8
3.4	IMPLEMENTATION OF THE PLAN.....	12
3.5	RELATIONSHIP WITH OTHER RELEVANT PLANS AND PROGRAMMES.....	13
3.5.1	The FEM-FRAM Study.....	13
3.5.2	Arterial Drainage	14
3.5.3	Drainage Districts	15
3.5.4	Maintenance of Channels Not Part of a Scheme.....	15
4	SCREENING FOR APPROPRIATE ASSESSMENT	18
4.1	MANAGEMENT OF THE EUROPEAN SITE.....	18
4.2	ESTABLISHING AN IMPACT PATHWAY	18
4.3	IN-COMBINATION WITH OTHER PLANS AND PROJECTS.....	32
5	CONCLUSION OF THE SCREENING ASSESSMENT	37
5.1	CONCLUSION OF SCREENING FOR APPROPRIATE ASSESSMENT	37
	GLOSSARY OF TERMS	39

LIST OF FIGURES

Figure 3.1:	The Eastern CFRAM Study Area and its Associated Units of Management.....	7
Figure 4.1:	European Sites included in AA Screening Search Exercise.....	19

LIST OF TABLES

Table 3.1:	Flood Risk Management Methods proposed in the FRMP	9
Table 3.2:	Summary of Flood Risk Management Options proposed in FEM- FRMP	14
Table 3.3:	List of Other Plans and Projects with potential for in-Combination Effects	16
Table 4.1:	European Sites found within Screening Search Area for Nanny-Delvin Basin (UoM08) FRMP	20
Table 4.2:	Potential cumulative and in-combination effects with other Plans, Programmes and Projects.....	32

LIST OF ABBREVIATIONS

AA	Appropriate Assessment
AFA	Area for Further Assessment
CBA	Cost Benefit Analysis
CFRAM	Catchment Flood Risk Assessment and Management
CJEU	Court of Justice of the European Union
DAFM	Department of Agriculture, Food and the Marine
DAHG	Department of Arts, Heritage and the Gaeltacht
DCENR	Department of Communications, Energy and Natural Resources
DD	Drainage District
DECLG	Department of Environment, Community and Local Government
DEHLG	Department of Environment, Heritage and Local Government
DHPCLG	Department of Housing, Planning, Community and Local Government
EC	European Commission
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
ERBD	Eastern River Basin District
FCC	Fingal County Council
FEMFRAMS	Fingal East Meath Flood Risk Assessment and Management Study
FEMFRMP	Fingal East Meath Flood Risk Management Plan
FPM	Freshwater Pearl Mussel
FRA	Flood Risk Assessment
FRM	Flood Risk Management
FRMP	Flood Risk Management Plan
GIS	Geographical Information System
GSI	Geological Survey Ireland
HA	Hydrometric Area
HPW	High Priority Watercourse
IFI	Inland Fisheries Ireland
IPP	Individual Property Protection
IRBD	International River Basin District
IROPI	Imperative Reasons of Overriding Public Interest
LA	Local Authority
LAP	Local Area Plan
MCA	Multi-Criteria Analysis
MIDA	Marine Irish Digital Atlas
MPA	Marine Protected Area
MPW	Medium Priority Watercourse
NHA	Natural Heritage Area
NIS	Natura Impact Statement
NPWS	National Parks and Wildlife Service
OD	Ordnance Datum
OPW	Office of Public Works
OSI	Ordnance Survey Ireland
OSPAR	(Oslo Paris) Convention for the Protection of the Marine Environment of the North-East Atlantic

P/P	Plan or Programme
PFRA	Preliminary Flood Risk Assessment
RBD	River Basin District
RBMP	River Basin Management Plan
SAC	Special Area of Conservation
SEA	Strategic Environmental Assessment
SERBD	South Eastern River Basin District
SI	Statutory Instrument
SOP	Standard Operating Procedure
SoP	Standard of Protection
SPA	Special Protection Area
SSA	Spatial Scale of Assessment
SuDS	Sustainable Drainage Systems
SWRBD	South Western River Basin District
UNESCO	United Nations Educational, Scientific and Cultural Organization
UoM	Unit of Management
WFD	Water Framework Directive
WHO	World Health Organisation
WRBD	Western River Basin District

1 INTRODUCTION AND BACKGROUND

The EU Directive on the assessment and management of flood risks [2007/60/EC], often referred to as the 'Floods Directive' came into force in late 2007. This is a framework directive that requires Member States to follow a certain process, namely:

- Undertake a Preliminary Flood Risk Assessment (PFRA) by 22 December 2011, to identify areas of existing or foreseeable future potentially significant flood risk (initially referred to as 'Areas of Potential Significant Risk', or 'APSRs', but now referred to as 'Areas for Further Assessment', or 'AFAs')
- Prepare flood hazard and risk maps for the AFAs by 22 December 2013; and,
- Prepare flood risk management plans by 22 December 2015, setting objectives for managing the flood risk within the AFAs and setting out a prioritised set of measures for achieving those objectives.

The directive requires that the PFRA, flood maps and flood risk management plans are prepared in cooperation and coordination with neighbouring states in cross-border river basins, and with the implementation of the Water Framework Directive (WFD). The Floods Directive also requires that the PFRA and flood maps are published, and that public and stakeholder consultation and engagement is undertaken in the preparation of the Flood Risk Management Plans (FRMPs).

The FRMPs arising from the Eastern CFRAM Study are strategic plans and are therefore subject to the provisions of Article 6(3) of the EU Habitats Directive via the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) ('the 2011 Regulations'). The 2011 Regulations transpose the provisions of the Habitats Directive 92/43/EEC into Irish law and consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, as well as addressing transposition failures identified in judgements of the Court of Justice of the European Union (CJEU).

As with Strategic Environmental Assessment (SEA), it is accepted best-practice for the Appropriate Assessment of strategic planning documents, in the context of the 2011 Regulations, to be run as an iterative process alongside the Plan development, with the emerging proposals or options continually assessed for their possible effects on European sites and modified or abandoned (as necessary) to ensure that the subsequently adopted Plan is not likely to result in significant adverse effects on any European sites, either alone or 'in combination' with other plans.

1.1 LEGISLATIVE CONTEXT

The 'Habitats Directive' (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) provides legal protection for habitats and species of European importance. The main aim of the Habitats Directive is *"to contribute towards ensuring biodiversity through the conservation of natural habitats of wild fauna and flora in the European territory of the Member States to which the treaty applies"*. Actions taken in order to fulfil the Directive must be designed to: *"maintain or restore, at a favourable conservation status, natural habitats and species of wild fauna and flora of Community interest"*.

A key outcome of the Habitats Directive is the establishment of Natura 2000, an ecological infrastructure developed throughout Europe for the protection of sites that are of particular importance for rare, endangered or vulnerable habitats and species. In Ireland, Special Areas of Conservation (SACs), together with Special Protection Areas (SPAs) designated under the 'Birds Directive' (Council Directive 2009/147/EC - codified version of Directive 79/409/EEC on the Conservation of Wild Birds, as amended), are included in the Natura 2000 network¹, and are hereafter referred to as 'European sites'.

A central protection mechanism of the Habitats Directive is the requirement of competent authorities to undertake Appropriate Assessment² (AA) to consider the possible nature conservation implications of any Plan or Project on European sites before any decision is made to allow the plan or project to proceed.

The 2011 Regulations provide the following definition of a plan: *"subject to the exclusion, except where the contrary intention appears, of any plan that is a land use plan within the meaning of the Planning Acts 2000 to 2011, includes-*

- (a) any plan, programme or scheme, statutory or non-statutory, that establishes public policy in relation to land use and infrastructural development in one or more specified locations or regions, including any development of land or on land, the extraction or exploitation of mineral resources or of renewable energy resources and the carrying out of land use activities, that is to be considered for adoption authorisation or approval or for the grant of a licence, consent, permission, permit, derogation or other authorisation by a public authority, or*
- (b) a proposal to amend or extend a plan or scheme referred to in subparagraph (a)"*

Not only is every new plan or project captured by the requirements of the 2011 Regulations, but each plan or project, when being considered for approval at any stage, must take into consideration the possible effects it may have in combination with other plans and projects.

Article 6(3) of the Habitats Directive states: *"Any plan or project not directly connected with or necessary to the management of the [European] site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and if appropriate, after having obtained the opinion of the general public."*

¹ Natura 2000 sites are protected by Article 6(3) of the Habitats Directive. Protection is given to SACs from the point at which the European Commission and the Government agree the site as a 'Site of Community Importance' (SCI). Article 6(3) of the Habitats Directive and Article 4(4) of the Birds Directive also apply (respectively) to any other site or area that the Commission believes should be considered as an SAC or SPA, until their status is determined. Under the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended) the term 'European site' applies to any designated SAC or SPA; any SCI; any candidate SCI (cSCI); any candidate SAC (cSAC); and any candidate or proposed SPA (pSPA).

² 'Appropriate Assessment' has been historically used as an umbrella term to describe the process of assessment in its entirety from screening to IROPI (Imperative Reasons of Overriding Public Interest). The assessment process is now more commonly divided into distinct stages, one of which (Stage 2) is the 'appropriate assessment' stage. The overall process is often referred to as an 'Article 6 Assessment' or 'Habitats Directive Assessment' for convenience, although these terms are not included within the legislation.

Article 6(4) is the procedure for allowing derogation from this strict protection, in certain restricted circumstances:

Article 6(4) of the Habitats Directive states: *"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted."*

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the plan should aim to avoid any impacts on European sites by identifying possible impacts early in the plan-making process and writing the plan in order to avoid such impacts. Second, mitigation measures should be applied, if necessary, during the AA process to the point where no adverse impacts on the site(s) remain. If the plan is still likely to result in impacts on European sites, and no further practicable mitigation is possible, then it must be rejected. If no alternative solutions are identified and the plan is required for imperative reasons of overriding public interest (IROPI test) under Article 6(4) of the Habitats Directive, then compensation measures are required for any remaining adverse effect.

Appropriate assessment should be based on best scientific knowledge and competent authorities should ensure that scientific data (ecological and hydrological expertise) is utilised. This report concludes in a screening statement to inform the AA process which will be finalised by the competent authority.

2 APPROACH

The European Commission (EC) has produced non-mandatory methodological guidance (EC, 2000, 2002, 2007) in relation to the process of AA which suggests a four-stage process, although not all steps may necessarily be required. A summary of the stages is given below.

Stage One: Screening or ‘Test of Likely Significance’ - the process which identifies the likely impacts upon a European site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant;

Stage Two: Appropriate Assessment - the consideration of the impact on the integrity of the European site of the project or plan, either alone or in combination with other projects or plans, with respect to the site’s structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts;

Stage Three: Assessment of Alternative Solutions - Where adverse effects remain after the inclusion of mitigation, this Stage examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of European Sites;

Stage Four: Assessment Where Adverse Impacts Remain - an assessment of compensatory measures where, in the light of an assessment of Imperative Reasons of Overriding Public Interest (IROPI), it is deemed that the project or plan should proceed.

2.1 GUIDANCE

Appropriate Assessment Guidelines for Planning Authorities have been published by the Department of the Environment, Heritage and Local Government (DEHLG, 2010a). In addition to the advice available from the Department, the European Commission has published a number of documents which provide a significant body of guidance on the requirements of Appropriate Assessment, most notably including, *‘Assessment of Plans and Projects Significantly Affecting Natura 2000 sites - Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC’* (EC, 2001), which sets out the principles of how to approach decision making during the process.

These principal national and European guidelines have been followed in the preparation of this AA Screening. The following list identifies these and other pertinent guidance documents:

- Communication from the Commission on the Precautionary Principle., Office for Official Publications of the European Communities, Luxembourg (EC, 2000a);
- Managing Natura 2000 Sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg (EC, 2000b);
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2001);

- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission; (EC, 2007);
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin (DEHLG, 2010a) and;
- Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities (DEHLG, 2010b).

EC (2000a) notes that the implementation of an approach based on the precautionary principle should start with a scientific evaluation, as complete as possible, and where possible, identifying at each stage the degree of scientific uncertainty, and also that decisions taken based on the precautionary principle should be maintained so long as scientific information is incomplete or inconclusive. EC (2001) notes also that predicting the response of a receptor to a disturbance effect can be difficult and, in the absence of firm scientific information, requires a precautionary approach.

In relation to mitigation measures the EC (2001) Guidance states that *“project and plan proponents are often encouraged to design mitigation measures into their proposals at the outset. However, it is important to recognise that the screening assessment should be carried out in the absence of any consideration of mitigation measures that form part of a project or plan and are designed to avoid or reduce the impact of a project or plan on a Natura 2000 site”*. This direction in the European Commission’s guidance document is unambiguous.

2.2 APPROACH USED IN THIS EXERCISE

The threshold for a likely significant effect is treated in the screening exercise as being above a *de minimis* level. A *de minimis* effect is a level of risk that is too small to be concerned with when considering ecological requirements of an Annex I habitat or a population of Annex II species present on a European site necessary to ensure their favourable conservation condition. If low-level effects on habitats or individuals of species are judged to be in this order of magnitude and that judgment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be likely significant effects.

Following the principle outlined in EC (2001), the screening exercise has not taken into consideration mitigation measures proposed as part of the Plan.

The most up-to-date Conservation Objectives available have been applied to the analysis documented in this report and are clearly identified by their date of publication (or otherwise) on a site-by-site basis.

3 DESCRIPTION OF THE PLAN

3.1 THE CFRAM PROGRAMME

The CFRAM Programme has been implemented for seven large Study 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. The UoMs/HAs and the AFAs in the Eastern RBD are shown in Figure 3.1.

The Eastern RBD and CFRAM Study area includes four Units of Management (UoM) / Hydrometric Areas³ (HAs). These are UoM07 (Boyne), UoM08 (Nanny-Delvin), UoM09 (Liffey-Dublin Bay) and UoM10 (Avoca-Vartry). The UoMs constitute major catchments / river basins (typically greater than 1000km²) and their associated coastal areas, or conglomerations of smaller river basins and their associated coastal areas. Within the Eastern CFRAM Study area, each UoM boundary generally matches the boundary of a corresponding Hydrometric Area (HA).

The CFRAM Programme is focused on a number of areas which are referred to as Areas for Further Assessment⁴, or 'AFAs' where the risk has been determined through the 2011 Preliminary Flood Risk Assessment (PFRA) to be potentially significant, and on the sources of flooding within these areas that were determined to be the cause of significant risk.

The aim of the Plan for UoM08 is therefore to set out a sustainable, long-term strategy to manage the flood risk within the Nanny-Delvin River Basin, and the sources of flooding giving rise to that risk. It is not an objective of these studies to develop detailed designs for individual risk management measures.

³ HAs are areas comprising a single large river catchment, or a group of smaller ones, that have been delineated across Ireland and Northern Ireland for the purposes of hydrological activities.

⁴ AFAs are settlement areas which were defined as a result of the first phase of implementation of the Floods Directive, the Preliminary Flood Risk Assessment (PFRA), completed in 2011. The PFRA identified areas of existing or foreseeable future potentially significant flood risk (originally referred to as 'Areas of Potential Significant Risk', or 'APSRs') and these areas are what are now referred to in the FRMPs as 'Areas for Further Assessment', or 'AFAs'.



Figure 3.1: The Eastern CFRAM Study Area and its Associated Units of Management

3.2 SPATIAL SCOPE OF THE PLAN

The Plan is focussed on Unit of Management 08, the Nanny-Delvin River Basin (shown in red in Figure 3.1). This river basin covers an area of approximately 772 km² which includes parts of Counties Meath and Dublin within the Meath and Fingal County Council administrative areas.

The Nanny – Delvin River Basin FRMP represents a stand-alone Plan that supplements the existing Fingal East Meath Flood Risk Management Plan (FEM FRMP) from 2011 with positive Governance & Policy recommendations. The additional measures in the Nanny – Delvin River Basin FRMP, above and beyond the FEM FRMP, are solely Governance & Policy Changes, and these are the only measures to which the Nanny – Delvin River Basin FRMP gives effect.

There was broad agreement between the PFRA and the Fingal East Meath Flood Risk Assessment and Management Study ('FEM FRAMS'), with no additional AFAs being identified in the PFRA for Nanny – Delvin River Basin. The overall CFRAM methodology used for the Eastern CFRAM remains broadly consistent with the FEM-FRAMS process. The CFRAM Study has not resulted in any amendments to what has been proposed in the FEM FRMP, which is the Plan that gives effect to the AFA level measures contained within the UoM.

The Nanny – Delvin River Basin FRMP therefore supplements the existing FEM FRMP rather than replacing it and sets out the range of policies and measures, which are in place or under development that can contribute to the reduction and management of flood risk throughout the River Basin. These include spatial planning, emergency response planning and maintenance of drainage schemes and are described in more detail below in section 3.3.

3.3 ELEMENTS OF THE NANNY – DELVIN RIVER BASIN FRMP WITH POTENTIAL TO CAUSE ADVERSE IMPACTS ON EUROPEAN SITES

Table 3.2 summarises the FRM methods that, following option appraisal, have been included for potential implementation within the FRMP. A full description of the measures is provided in Chapter 7 of the Plan.

In the National CFRAM programme, measures to manage flood risk may be applied at a range of spatial scales, namely the whole River Basin, at a catchment- or sub-catchment level, or at an AFA or local level. In the case of the Nanny-Delvin River Basin, the Plan only includes measures identified under the CFRAM Programme that are applicable to the whole River Basin. The 'Do Nothing' Method was screened out of the Plan during option appraisal, as it is likely to increase the flood risk to an area, through abandonment of all FRM activities, and would therefore not be feasible on technical grounds.

Table 3.1: Flood Risk Management Methods proposed in the FRMP

Measure Name	Description	Implemented By
Prevention: Sustainable Planning and Development Management 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, including 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. This Plan element is considered environmentally neutral as it is a policy option to prevent inappropriate development. It is unlikely to result in significant negative impacts at a strategic level.	Planning Authorities
Prevention: Sustainable Urban Drainage Systems 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. This Plan element is considered environmentally neutral as it is a policy option to improve the sustainability of future development. It is unlikely to result in significant negative impacts at a strategic level.	Planning Authorities
Prevention: Voluntary Home Relocation Voluntary Home Relocation Scheme	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. The Inter-Departmental Flood Policy Coordination Group is considering the future policy options for voluntary home relocation for consideration by Government. This Plan element is considered environmentally neutral as it is a potential assessment of policy options. It is unlikely to result in significant negative impacts at a strategic level.	Home-Owners (with humanitarian assistance to those qualifying under the Voluntary Homeowners Relocation Scheme, 2017)
Prevention: Local Adaptation Planning Consideration of Flood Risk in 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. This Plan element is considered environmentally neutral as it is a policy option to prepare Adaptation Plans at local scale. At this early stage in its development, the strategic-level policy is unlikely to result in significant negative impacts.	Local Authorities
Prevention: Land Use Management and Natural Flood Risk Management Measures Assessment of Land Use and Natural Flood Risk Management Measures	The OPW will work with the EPA, local authorities and other agencies during the project-level assessments of physical works and more broadly at a catchment-level to identify, where possible, measures that will have benefits for both WFD and flood risk management objectives, such as natural water retention measures, and also for biodiversity and potentially other objectives, including the use of pilot studies and applications, where possible. The Plan element has the potential for both positive and negative environmental impacts; however the next stage of implementation of land use management and natural flood management following from the FRMP will be further assessment and feasibility studies. Therefore, at this early stage in its development, the strategic-level policy is unlikely to result in significant negative impacts.	Local Authority WFD Offices, OPW, EPA, Others

Measure Name	Description	Implemented By
Protection: Minor Works Scheme	<p>The Minor Flood Mitigation Works and Coastal Protection Scheme (the 'Minor Works Scheme') is an administrative scheme introduced in 2009 and operated by the OPW under its general powers and functions to provide funding to local authorities to enable the local authorities, to address qualifying local flood problems with local solutions. 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.</p> <p>This Plan element has the potential for both positive and negative environmental impacts; however the next stage of implementation of minor works will be outside the Plan and the CFRAM studies. Where available, information on projects being currently progressed on the minor works scheme will be taken into consideration for cumulative or in combination impacts. Where relevant, future schemes undertaken via the Minor Works Scheme during the lifetime of the Plan should be assessed for cumulative or in-combination impacts with the Plan.</p>	OPW, Local Authorities
Protection: Maintenance of Arterial Drainage Schemes and Existing Flood Relief Schemes	<p>There are two Arterial Drainage Schemes within the Nanny-Delvin River Basin namely the Broadmeadow & Ward and the Matt. An existing Flood Relief Scheme is also active at Duleek. While new Arterial Drainage Schemes are no longer being undertaken, the OPW has a statutory duty to maintain the completed schemes in proper repair and in an effective condition. The annual maintenance programme is published by the OPW on the OPW website, and typically involves some clearance of vegetation and removal of silt build-up on a five-yearly cycle. The Plan does not amend these existing responsibilities to provide additional flood relief and does not set out any additional measures in this regard however these will be taken into account for cumulative or in-combination effects with the Plan.</p>	OPW, Local Authorities
Protection: Maintenance of Drainage Districts	<p>There are seven Drainage Districts within the Nanny-Delvin River Basin, namely the Ward, Curragha, Garristown & Devlin, Bartramstown, Nanny, Nanny Upper and Mornington Drainage Districts. The local authorities have a statutory duty to maintain the Drainage Districts, and the Plan does not amend these responsibilities to provide additional flood relief. The Plan does not set out any additional measures in relation to the maintenance of Drainage Districts however these will be taken into account for cumulative or in-combination effects with the Plan.</p>	Local Authorities
Maintenance: Maintenance of Channels Not Part of a Scheme	<p>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.</p> <p>This Plan element is considered environmentally neutral as it is a policy option to develop guidance and does not in itself involve physical works. It is unlikely to result in significant negative impacts at a strategic level.</p>	Landowners

Measure Name	Description	Implemented By
Preparedness: Flood Forecasting Establishment of a National Flood Forecasting and Warning Service	<p>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.</p> <p>The service will deal with flood forecasting from fluvial (river) and coastal sources and when established it will involve the issuing of flood forecasts and general alerts at both national and catchment scales.</p> <p>The Plan recommends progression of a Flood Forecasting and Warning System, comprising a forecasting model system and the use of gauging stations to project-level.</p> <p>Any implementation of this strategy where physical measures are required would be subject to the positive outcome of a project-level assessment.</p>	OPW, DHPCLG, Met Éireann and Local Authorities
Preparedness: Review of Emergency Response Plans for Severe Weather Ongoing Appraisal of Flood Event Emergency Response Plans and Management Activities	<p>Ongoing, regular appraisal of emergency management activities to improve preparedness and inter-agency coordination and to shape future Major Emergency Management (MEM) developments as part of the major emergency development programmes, taking into account in particular the information developed through the CFRAM Programme and the plan.</p> <p>This plan element is considered environmentally neutral as it is a policy option to review Emergency Response Plans. It is unlikely to result in significant negative impacts at a strategic level.</p>	Principal Response Agencies, Regional Steering Groups, National Steering Group
Preparedness: Individual and Community Resilience Individual and Community Action to Build Resilience	<p>While the State, through the OPW, local authorities and other public bodies can take certain actions (subject to environmental assessment, where relevant) to reduce and manage the risk of flooding, individual home-owners, businesses and farmers also have a responsibility to manage the flood risk to themselves and their property and other assets to reduce damages and the risk to personal health in the event of a flood.</p> <p>Research by the DHPCLG is informing a review of the national emergency framework and the supports that can be provided to communities to help them respond to all emergencies, including flooding emergencies. This will build on past initiatives and existing support.</p> <p>The option is considered environmentally neutral as it is a policy option to promote resilience to flooding. It is unlikely to result in significant negative impacts at a strategic level.</p>	Public, business owners, farmers and other stakeholders
Preparedness: Individual Property Protection	<p>Individual Property Protection can be effective in reducing the damage to the contents, furniture and fittings in a house or business, but are not applicable in all situations.</p> <p>The Inter-Departmental Flood Policy Review Group is considering the policy options around installation of Individual Property Protection measures (at properties where they are identified as a suitable method) for consideration by Government.</p> <p>This strategic-level policy is unlikely to result in significant negative impacts. Any implementation of this strategy involving physical measures which require planning consent would be subject to the positive outcome of a project-level assessment.</p>	Home owners, Inter-Departmental Flood Policy Review Group
Preparedness: Flood-Related Data Collection	<p>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.</p> <p>Any implementation of this strategy where physical measures such as new gauging stations are required would be subject to the positive outcome of a project-level assessment.</p>	OPW, Local Authorities / EPA and other hydro-meteorological agencies

The measures that have been put forward in the Plan are largely non-structural and cannot manage flood risk as a stand-alone method. They are likely to be established as the Plan is implemented, to complement other methods and measures (for example the Options put forward in the FEM FRMP) that could manage flood risk.

The following elements of the Plan have the potential to lead to physical measures within or adjacent to European Sites, or areas with pathways for effects:

- Preparedness: Flood Forecasting – may require the installation of additional gauging stations
- Preparedness: Individual Property Protection
- Preparedness: Flood-Related Data Collection – may require the installation of additional gauging stations

Individual property protection is considered to be unlikely to have any impact to designated sites in the vicinity of the properties at risk, as this method of flood risk management would generally be undertaken within the curtilage of existing properties and, as such, is considered environmentally acceptable.

The installation of new gauging stations has the potential to give rise to impacts in the following ways:

- Noise, visual disturbance and ground vibrations have the potential to disturb birds.
- Disturbance of the ground or river bed, or storage of excavated materials allowing suspended sediment to be released into adjacent watercourses, giving rise to a hydraulic pathway of potential effect upon hydrologically connected European sites, their water quality and favourable conservation status of habitats or deterioration of those habitats which the selection feature bird species depend upon.
- Potential for spillages to arise, allowing polluting substances to potentially enter adjacent watercourses, giving rise to a hydraulic pathway of potential effect upon European sites, their water quality and favourable conservation status of habitats or deterioration of those habitats which the selection feature bird species depend upon.

3.4 IMPLEMENTATION OF THE PLAN

The approval / adoption of the Plan has not and does not confer approval or permission for the installation or construction of any physical measures.

For the other River Basin Plans in the Eastern CFRAM Study area, the SEA Environmental Reports have proposed mitigation measures to be included within the Plans. These measures were recommended where potential negative impacts from flood risk management options on environmental topic areas have been identified. These mitigation measures aim to prevent, reduce and, as fully as possible, offset any significant adverse effects on the environment due to implementation of the Plan and were further enhanced following consultation of the draft Plans. It is recommended that, in order to be consistent with other Eastern River Basin FRMPs, these mitigation measures be adopted with the Nanny – Delvin River Basin FRMP, even though it does not contain any structural measures or set a framework for development. It should be noted, however, that as

discussed in section 2.1 the screening assessment will be carried out in the absence of any consideration of mitigation measures.

The implementation of any measures involving physical works will require an additional tier of licensing and / or consenting accompanied by a project-level assessment. In addition to planning or confirmation, licences may be required by the implementing body to progress certain physical works, such as those that may cause damage or disturbance to protected species or their habitats, and the granting of such licences during or following the project-level assessment would be required before such works could proceed.

The processes for progression of measures involving physical works within the Plan area are described in section 8 of the Plan. EIA and/or AA Screening, and, where so concluded from the screening, Environmental Impact Assessment and / or Appropriate Assessment, must be undertaken in accordance with the relevant legislation where relevant as part of the progression of measures that involve physical works. The body responsible for implementation of such measures, typically either the OPW or the relevant local authority is required to ensure that these requirements will be complied with.

It is a commitment of the OPW to ensure that best practice measures in construction are to be implemented by them and their appointed contractors to ensure that there are no harmful emissions to land, water or air. Standard measures include the implementation of Guidance for Pollution Prevention⁵ (GPPs) by the Contractor as part of their construction methodology to ensure best practice on-site in preventing pollution and suspended sediment release to surface watercourses and groundwater. Where relevant the contractor would also incorporate measures from the CIRIA Technical Guidance C532 'Control of water Pollution from Construction Sites: Guidance for consultants and Contractors' (CIRIA, 2001).

These measures would be built into any project as proposed and would not be applied as an outcome of any ecological evaluation and analysis to reduce the possibility of likely significant effects upon European sites. The measures are simple and straightforward, and their effectiveness is plainly established – they are not novel techniques. Any reasonably informed and competent contractor could implement such measures.

3.5 RELATIONSHIP WITH OTHER RELEVANT PLANS AND PROGRAMMES

The Eastern CFRAM Study is set in a flood risk management planning context, where plans, projects and activities and their associated SEA and AA requirements are all linked.

3.5.1 The FEM-FRAM Study

The Nanny-Delvin River Basin and the adjoining areas within the Boyne and Liffey -Dublin Bay River Basin Districts has also been studied under part of the Fingal East Meath Pilot CFRAM Project (the 'FEM-FRAM Study'). The Flood Risk Management Plan arising out of the FEM-FRAMS (Halcrow Barry, 2012) sets out the preferred flood risk management Options for AFAs in the Nanny-Delvin River Basin and incorporates a number of physical measures. A Statement for Appropriate Assessment for

⁵ Standard GPPs for the construction industry (which supersede the previous Pollution Prevention Guidance (PPGs)) have been developed by the UK Environmental Agency (EA), the Scottish Environmental Protection Agency (SEPA) and the Northern Ireland Environment Agency (NIEA) <http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series>

the FEM FRAMS FRMP was prepared in 2011 (Halcrow Barry, 2011). The Options, many of which are already in development, are summarised in Table 3.2. The FEM FRMP will be reviewed for potential in-combination or cumulative effects with the CFRAM FRMP.

Table 3.2: Summary of Flood Risk Management Options proposed in FEM- FRMP

Flood Relief Schemes and Works Progressed or Proposed through Other Projects or Plans			
Community (AFA)	Scheme or Works	Description	Status
Ashbourne	Ashbourne Flood Relief Scheme	Construction of an overflow weir to divert flow to the Broadmeadow river and the improvement of channel and culvert capacity along channel C1/7 of the Broadmeadow and Ward Scheme. Expected to provide protection against a 100-Year flood (1% Annual Exceedance Probability) for 69 properties.	Planning / Design Stage
Northlands	Northlands Flood Relief Scheme	Construction of flood defence walls and a non-return flap valve. Expected to provide protection against a 100-Year flood (1% Annual Exceedance Probability) for 27 properties.	Planning / Design Stage
Duleek	Duleek Flood Relief Scheme	Flood defence walls and embankments along the Nanny River and Paramadden stream and a storm water pumping station. Provides protection against a 100-Year fluvial flood (1% Annual Exceedance Probability) for 88 properties	Complete
Rowlestown	Rowlestown Minor Flood Relief Works	Spillway construction, embankment stability works and culvert improvements. Will provide protection to the Q50 Standard of Protection for three properties.	Complete
Skerries AFA	Skerries Flood Relief Scheme	Construction of hard defences (embankments & flood walls), culvert removal and the upgrade of three access bridges. Expected to provide protection to 61 properties against an estimated 100-Year fluvial flood (1% Annual Exceedance Probability) and a 200-Year coastal flood (0.5% Annual Exceedance Probability).	Planning / Design Stage (Fingal -East Meath Flood Risk Management Plan, 2014)
Laytown, Bettystown & Coastal Areas AFA	Laytown, Bettystown & Coastal Areas Flood Relief Scheme	Construction of hard defences (embankments & flood walls). Is expected to provide protection for 11 properties against an estimated 100-Year fluvial flood (1% Annual Exceedance Probability) and a 200-Year coastal flood (0.5% Annual Exceedance Probability) event. In addition to the works identified under the FEM FRAMS a culvert was replaced on the Brookside Stream in Bettystown.	Proposed (Fingal -East Meath Flood Risk Management Plan, 2014)
Undertake a Detailed Assessment of the Costs of the Potential Measure for the Communities set out below.			
Rush AFA	OPW and/or Fingal CoCo - To be confirmed	Improvement of channel conveyance together with construction of hard defences (embankments & flood walls). Expected to provide protection against an estimated 100-Year fluvial flood (1% Annual Exceedance Probability) for 27 properties.	OPW
Ratoath AFA	OPW and/or Meath CoCo - To be confirmed	Improvement of channel conveyance. Expected to provide protection against an estimated 100-Year fluvial flood (1% Annual Exceedance Probability) for 9 properties.	OPW

3.5.2 Arterial Drainage

Within the Nanny-Delvin River Basin the OPW has implemented and maintains the Broadmeadow and Ward Arterial Drainage Scheme and the Matt Arterial Drainage Scheme, completed by the OPW

during the 1960s, under the 1945 Arterial Drainage Act. The OPW continues to have statutory responsibility for inspection and maintenance of the Scheme, which includes much of the main channels and a large number of designated tributaries. The primary focus of arterial drainage schemes is not for flood relief but for the improvement of agricultural land. Whilst not intended as a flood alleviation scheme, the arterial drainage works have undoubtedly reduced the fluvial flood risk in certain parts of the Nanny-Delvin River Basin.

The OPW has undertaken separate environmental and appropriate assessments of the maintenance of their arterial drainage schemes. It is therefore assumed that maintenance programmes already in place recognise the requirements of the 2011 Regulations and that ongoing or future planned maintenance of existing flood defence measures is carried out in accordance with relevant legislation and incorporates any necessary mitigation measures.

Where relevant, arterial drainage maintenance in the UoM will be taken into consideration for cumulative or in combination impacts with measures proposed in the Plan.

3.5.3 Drainage Districts

Drainage Districts represent areas where the Local Authorities have responsibilities to maintain watercourse channels and therefore contribute to maintaining the existing regime. In relation to the seven Drainage Districts located within Nanny-Delvin River Basin, none are located directly on the key watercourses where fluvial and coastal flood risk is being considered within Ireland's first cycle assessment under the Floods Directive.

The local authorities shall maintain the Drainage Districts in their jurisdictional area in accordance with legislation. Any maintenance works to be carried out would be subject to the relevant environmental assessment requirements, including Screening for Appropriate Assessment and surveys for protected species.

Where relevant, the maintenance of drainage districts in the UoM will be taken into consideration for cumulative or in combination impacts with measures proposed in the Plan.

3.5.4 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.

Where relevant, the maintenance of channels not part of a scheme will be taken into consideration for cumulative or in combination impacts with measures proposed in the Plan. Table 3.4 identifies the main significant environmental plans, programmes and legislation, adopted at International, European Community or Member State level, which would be expected to influence, or be influenced by, the Eastern CFRAM Study's FRMPs. While it is recognised that there are many plans, programmes and legislation that will relate to the FRMPs, it is considered appropriate to deal only with those significant texts, to keep the assessment at a strategic level.

Table 3.3: List of Other Plans and Projects with potential for in-Combination Effects

Level	Plan / Programme / Legislation
EU Level	<ul style="list-style-type: none"> ▪ EU Floods Directive [2007/60/EC] ▪ A Blueprint to Safeguard Europe's Water Resources [COM(2012)673] ▪ Bathing Water Directive [2006/7/EC] ▪ Birds Directive [2009/147/EC] ▪ Bonn Convention [L210, 19/07/1982 (1983)] ▪ Drinking Water Directive [98/83/EC] ▪ EIA Directive [85/337/EEC] [2014/52/EU] ▪ Environmental Liability Directive [2004/35/EC] ▪ Environmental Quality Standards Directive [2008/105/EC] ▪ EU Biodiversity Strategy to 2020 [COM(2011)244] ▪ European Landscape Convention [ETS No. 176] ▪ Groundwater Directive [80/68/EEC] and Daughter Directive [2006/118/EC] ▪ Habitats Directive [92/43/EEC] ▪ Marine Strategy Framework Directive [2008/56/EC] ▪ Nitrates Directive [91/676/EEC] ▪ Renewable Energy Directive [2009/28/EC] ▪ SEA Directive [2001/42/EC] ▪ Second European Climate Change Programme [ECCP II] 2005. ▪ Sewage Sludge Directive [86/278/EEC] ▪ Soils Thematic Strategy [COM(2006) 231] ▪ Urban Wastewater Treatment Directive [91/271/EEC] ▪ Water Framework Directive [2000/60/EC] ▪ World Heritage Convention [WHC-2005/WS/02]
National Level	<ul style="list-style-type: none"> ▪ Arterial Drainage Maintenance and High Risk Designation Programme 2016-2021 (OPW, 2016) ▪ Capital Investment Programme 2015-2021 (Irish Water, 2014) ▪ Climate Change Sectoral Adaptation Plan for Flood Risk Management, 2015 (OPW, 2015) ▪ Fisheries Acts 1959 to 2007 (S.I. No. 14 of 1959 and No. 17 of 2007) ▪ Food Harvest 2020 (DAFM, 2010) ▪ Food Wise 2025 (DAFM, 2015) ▪ Grid 25 Implementation Plan 2011-2016 (EIRGIRD, 2010) ▪ Harnessing Our Ocean Wealth: An Integrated Marine Plan for Ireland (Inter-Departmental Marine Coordination Group 2012) ▪ Irish Geological Heritage (IGH) Programme (GSI 1998-) ▪ Lead in Drinking Water Mitigation Plan (Irish Water, 2016) ▪ National Biodiversity Plan (2nd Revision 2011-2016) (DAHG, 2011) ▪ National Climate Change Adaptation Framework (DEHLG, 2012) ▪ National Climate Change Strategy 2007-2012 (DEHLG, 2007) ▪ National (Climate) Mitigation Plan (DECLG, 2012) ▪ National Development Plan 2007-2013 (DECLG, 2007) ▪ National Forestry Programme 2014-2020 (DAFM, 2015) ▪ National Forest Policy Review (DAFM, 2014) ▪ National Landscape Strategy for Ireland (Draft) 2014 – 2024 (DAHG, 2014) ▪ National Monuments Acts (1930 to 2004) (S.I. No. 2 of 1930 & No. 22 of 2004) ▪ National Renewable Energy Action Plan (DCENR, 2010) ▪ National Secondary Road Needs Study 2011 (NRA, 2011) ▪ National Spatial Strategy 2002-2020 (DELG, 2002) ▪ National Sludge Wastewater Sludge Management Plan (Draft) (Irish Water, 2015) ▪ National Strategic Plan for Sustainable Aquaculture Development (DAFM, 2015) ▪ Offshore Renewable Energy Development Plan (DCENR, 2014) ▪ Planning System and Flood Risk Management (OPW, 2009) ▪ Raised Bog SAC Management Plan (Draft) (DAHG, 2014), ▪ National Peatland Strategy (Draft) (NPWS, 2014) ▪ Review of Raised Bog Natural Heritage Area Network (NPWS, 2014)

Level	Plan / Programme / Legislation
	<ul style="list-style-type: none"> Report of the Flood Policy Review Group (OPW, 2004) River Basin Management Plan for Ireland (2018-2021) (Draft) (DHPCLG, 2017) Rural Development Programme 2014-2020 (DAFM, 2015) Water Services Strategic Plan (Irish Water, 2014)
Regional Level	<ul style="list-style-type: none"> UoM08 Flood Risk Management Plan (OPW, 2016) Eastern River Basin District Management Plan 2009-2015 (DEHLG, 2010) Draft Transport Strategy for the Greater Dublin Area 2016-2035 (NTA, 2015) Regional Planning Guidelines for the Greater Dublin Area 2010-2022, (Regional Planning Guidelines Office, 2010)
Sub-Regional	<ul style="list-style-type: none"> County Meath Development Plan: 2013 – 2019 (Meath County Council, 2013) East Meath Local Area Plan 2014-2020 (Meath County Council, 2014) Draft Fingal Development Plan: 2017-2023 (Fingal County Council, 2016) Fingal Development Plan: 2011 – 2017 (Fingal County Council, 2011) Fingal Local Economic and Community Plan 2016-2021 (Fingal County Council, 2015) Fingal Housing Strategy 2017-2023 Appendix 1 (Fingal County Council, 2016) Ashbourne Local Area Plan 2009-2015 (Meath County Council, 2009) Balbriggan SE Local Area Plan (Fingal County Council, 2007) Balbriggan Stephenstown Local Area Plan 2007 (Fingal County Council, 2007) Ballyboghil Local Area Plan 2017-2022 (Fingal County Council, 2012) Donabate Local Area Plan 2014-2020 (proposed) (Fingal County Council, 2016) Dublin Airport Local Area Plan, June 2006 -2015 (Fingal County Council, 2015) Dunshaughlin Electoral Area Development Plan (Meath County Council, 2009) Garristown Local Area Plan 2015-2020 ((Fingal County Council, 2010) Kinsealy Local Area Plan 2014-2020 (proposed) (Fingal County Council, 2013) Lusk Local Area Plan 2009 (Fingal County Council, 2009) Oldtown Local Area Plan 2015-2022 (Fingal County Council, 2012) Portmarnock Local Area Plan 2006 (Fingal County Council, 2006) Portmarnock South Local Area Plan (Fingal County Council, 2013) Ratoath Local Area Plan 2009-2015 (Meath County Council, 2009) Rowlestown Local Area Plan 2013-2019 (Fingal County Council, 2013) Rush Kenure Local Area Plan 2009-2019 (Fingal County Council, 2009) Streamstown Local Area Plan 2009-2019 ((Fingal County Council, 2009) (Draft) County Meath Biodiversity Action Plan 2015-2021 (Meath County Council, 2015)

4 SCREENING FOR APPROPRIATE ASSESSMENT

4.1 MANAGEMENT OF THE EUROPEAN SITE

The first aspect of screening is to establish whether or not the proposed project is directly connected with or necessary to the management of any site as a European site. The UoM08 Flood Risk Management Plan is not directly connected with or necessary to the management of any European site. The Plan is therefore subject to Screening for Appropriate Assessment to assess, in view of best scientific knowledge and in view of the conservation objectives of those European sites considered, whether or not it is likely to have a significant effect on any European site either individually or in combination with other plans or projects.

4.2 ESTABLISHING AN IMPACT PATHWAY

The likely significance of effects on any European site from the proposed Plan was assessed using the source-pathway-receptor model. The 'source' is defined as the individual element of the proposed works that has the potential to impact on a European site, its qualifying features and its conservation objectives. The 'pathway' is defined as the means or route by which a source can affect the ecological receptor. The 'receptor' is defined as the Special Conservation Interests (of SPAs) or Qualifying Interests (of SACs) for which conservation objectives have been set for the European sites being screened. Each element can exist independently, however an effect is created when there is a linkage between the source, pathway and receptor.

As recommended in the *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities* (DEHLG, 2010), all European sites within the spatial scope of the Plan and within 15 kilometres of the spatial scope of the Plan were included in the initial capture for AA screening (see Figure 4.1 overleaf). The DEHLG Guidance also recommends that European sites beyond this distance should also be considered where there are hydrological linkages or other pathways that extend beyond 15 km.

In the case of this Plan, its spatial extent is defined by its corresponding Hydrometric Area, HA08. The boundary of the Hydrometric Area represents a defined watershed, outside of which watercourses will drain into a different river basin and to a different part of the coastline. It is thus considered that the boundary of the UoM incorporates a tangible boundary for hydraulic and hydrological impacts. As the Plan does not incorporate any physical measures along the coast, it is thus not considered necessary in this case to extend the screening area to sites within the adjoining coastal cells that are further than 15km away.

The OPW recognises that there are other potential impact pathways other than hydraulic/hydrological pathways for ecological receptors, such as groundwater, land and air and that mobile species, in particular birds, may range for distances beyond 15km. However, in the context of this Plan it is considered to be highly unlikely that pathways are present to sites located more than 15km outside the Plan area.

The initial selection exercise has resulted in a total of 26 European sites being identified for screening.

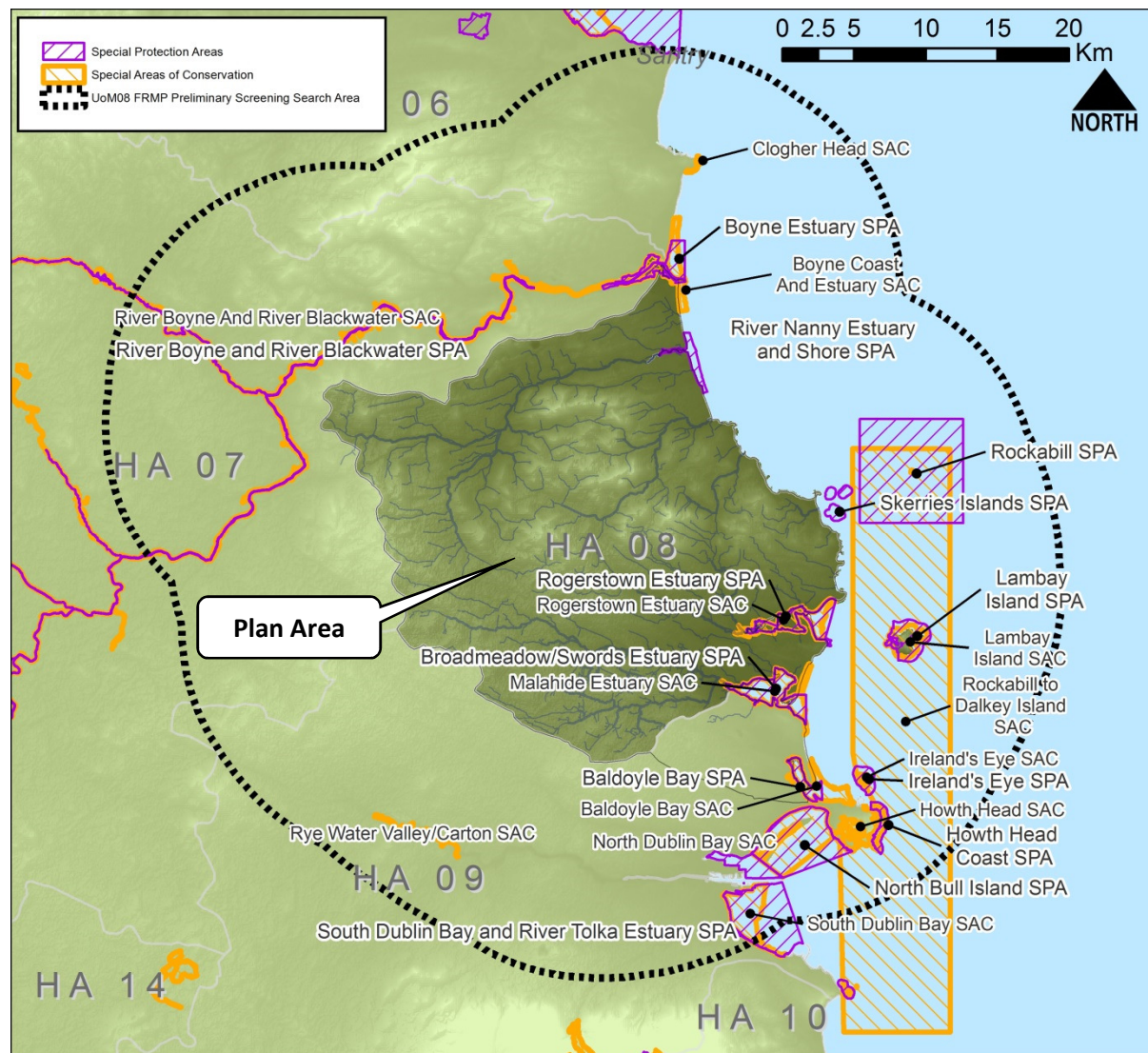


Figure 4.1: European Sites included in AA Screening Search Exercise

Each European site was individually reviewed to identify whether there were potential impact pathways evident from any of the Plan elements. The assessment reviewed the potential for:

Direct Impacts, examples of which include (but are not limited to):

- A construction footprint within the boundary of a European site, or
- A construction footprint outside a European site but which may obstruct the passage of a qualifying feature in accessing a European site.
- Visual or noise disturbance

Indirect Impacts, examples of which include (but are not limited to):

- Short-term water quality impacts associated with construction works, for example, suspended sediment and sedimentation impacts;
- Changes to existing hydrological and morphological regimes

Table 4.1: European Sites found within Screening Search Area for Nanny-Delvin Basin (UoM08) FRMP

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
000199	Baldoyle Bay SAC	3.9km	<p>Mudflats and sandflats not covered by seawater at low tide [1140], Salicornia and other annuals colonising mud and sand [1310], Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330], Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Conservation Objectives published 19 November 2012 Version 1.0</p>	<p>This site is located 3.9km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with the Plan elements. However, several of the listed species of conservation interest may at times use habitats situated in ecologically connected areas that are within the Zone of Influence of the Plan, such as Rogerstown Estuary and Broadmeadow / Malahide Estuary.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for these qualifying interests.</p> <p>No likely significant effect.</p>	Yes
004016	Baldoyle Bay SPA	3.7km	<p>Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046], Shelduck (<i>Tadorna tadorna</i>) [A048], Ringed Plover (<i>Charadrius hiaticula</i>) [A137], Golden Plover (<i>Pluvialis apricaria</i>) [A140], Grey Plover (<i>Pluvialis squatarola</i>) [A141], Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157], Wetland and Waterbirds [A999]</p> <p>Conservation Objectives published 27 February 2013 Version 1</p>	<p>This site is located 3.7km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with the Plan elements. However, several of the listed species of conservation interest may at times use habitats situated in ecologically connected areas that are within the Zone of Influence of the Plan, such as Rogerstown Estuary and Broadmeadow / Malahide Estuary.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant</p>	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
				deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for these species of conservation interest. No likely significant effect.	
001957	Boyne Coast And Estuary SAC	Within Plan Area	Estuaries [1130], Mudflats and sandflats not covered by seawater at low tide [1140], Annual vegetation of drift lines [1210], Salicornia and other annuals colonising mud and sand [1310], Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>) [1330], Embryonic shifting dunes [2110], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120], Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	This site immediately borders two sub-basins within the Plan area. However no watercourses from the Plan area drain directly or indirectly into this site. There is no hydrological pathway for potential impacts from any of the Plan elements. The European site is generally below the high water mark and it is therefore unlikely that any physical works for the installation of gauging stations would take place sufficiently close to the site to cause disturbance to birds. If noise or visual disturbance from construction were to occur, it would be temporary in nature. It is unlikely that such a temporary event would impede achieving the conservation objectives set for this site. No likely significant effect.	Yes
004080	Boyne Estuary SPA	Within Plan Area	Shelduck (<i>Tadorna tadorna</i>) [A048], Oystercatcher (<i>Haematopus ostralegus</i>) [A130], Golden Plover (<i>Pluvialis apricaria</i>) [A140], Grey Plover (<i>Pluvialis squatarola</i>) [A141], Lapwing (<i>Vanellus vanellus</i>) [A142], Knot (<i>Calidris canutus</i>) [A143], Sanderling (<i>Calidris alba</i>) [A144], Black-tailed Godwit (<i>Limosa limosa</i>) [A156], Redshank (<i>Tringa totanus</i>) [A162], Turnstone (<i>Arenaria interpres</i>) [A169], Little Tern (<i>Sterna albifrons</i>) [A195], Wetland and Waterbirds [A999] Conservation Objectives published 26 Feb 2013	This site immediately borders two sub-basins within the Plan area. No watercourses from the Plan area drain directly into this site, however there may be indirect influences via species of conservation interest which may at times use habitats situated in ecologically connected areas that have indirect hydrological connectivity with the Plan area, such as the Broadmeadow/Swords Estuary (Malahide Estuary) and Rogerstown Estuary. The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
			Version 1	deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for these species of conservation interest. No likely significant effect.	
004025	Broadmeadow/Swords Estuary (Malahide Estuary) SPA	Within Plan Area	Great Crested Grebe (<i>Podiceps cristatus</i>) [A005], Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046], Shelduck (<i>Tadorna tadorna</i>) [A048], Pintail (<i>Anas acuta</i>) [A054], Goldeneye (<i>Bucephala clangula</i>) [A067], Red-breasted Merganser (<i>Mergus serrator</i>) [A069], Oystercatcher (<i>Haematopus ostralegus</i>) [A130], Golden Plover (<i>Pluvialis apricaria</i>) [A140], Grey Plover (<i>Pluvialis squatarola</i>) [A141], Knot (<i>Calidris canutus</i>) [A143], Dunlin (<i>Calidris alpina</i>) [A149], Black-tailed Godwit (<i>Limosa limosa</i>) [A156], Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157], Redshank (<i>Tringa totanus</i>) [A162], Wetland and Waterbirds [A999] Conservation Objectives published 16 Aug 2013 Version 1	Many watercourses within the Plan area drain into this estuary and therefore there is the potential for indirect (downstream) impacts on species of conservation interest from elements of the plan. The European site is generally below the high water mark and it is therefore unlikely that any physical works for the installation of gauging stations would take place sufficiently close to the site to cause disturbance to birds. If noise or visual disturbance from construction were to occur, it would be temporary in nature. It is unlikely that such a temporary event would impede achieving the conservation objectives set for this site. The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at the European site in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of the site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this site. No likely significant effect.	Yes
001459	Clogher Head SAC	6.6km	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230], European dry heaths [4030]	As the qualifying interests are habitats located in a separate hydrometric area to the Plan, there are no direct or indirect pathways for potential impacts from any of the Plan elements to reach the qualifying interests of this site.	No

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
				No likely significant effect.	
004113	Howth Head Coast SPA	8.8km	Kittiwake (<i>Rissa tridactyla</i>) [A188]	<p>This site is located 8.8km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with the Plan elements. The species of conservation interest for this site would tend to feed and socialise offshore and are thus unlikely to be influenced by any of the Plan elements.</p> <p>There are no potential direct or indirect pathways for impacts from any of the Plan elements to reach the species of conservation interest of this site.</p> <p>No likely significant effect.</p>	No
000202	Howth Head SAC	8.7km	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230], European dry heaths [4030]	<p>As the qualifying interests are habitats located in a separate hydrometric area to the Plan, there are no direct or indirect pathways for potential impacts from any of the Plan elements to reach the qualifying interests of this site.</p> <p>No likely significant effect.</p>	No
002193	Ireland's Eye SAC	6.6km	Perennial vegetation of stony banks [1220], Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	<p>As the qualifying interests are habitats located on an offshore island, there are no direct or indirect pathways for potential impacts from any of the Plan elements to reach the qualifying interests of this site.</p> <p>No likely significant effect.</p>	No
004117	Ireland's Eye SPA	6.3km	<p>Cormorant (<i>Phalacrocorax carbo</i>) [A017], Herring Gull (<i>Larus argentatus</i>) [A184], Kittiwake (<i>Rissa tridactyla</i>) [A188], Guillemot (<i>Uria aalge</i>) [A199], Razorbill (<i>Alca torda</i>) [A200]</p> <p>Conservation Objectives [Generic]</p>	<p>Although this site is located offshore and is outside the Plan area, several of the species of conservation interest may at times use habitats situated in ecologically connected areas that are within the Plan boundary, such as the Boyne Estuary SPA.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant</p>	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
				deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for these species of conservation interest. No likely significant effect.	
000204	Lambay Island SAC	3.9km	Reefs [1170], Vegetated sea cliffs of the Atlantic and Baltic coasts [1230], <i>Halichoerus grypus</i> (Grey Seal) [1364], <i>Phoca vitulina</i> (Harbour Seal) [1365]	The Annex I habitat at this site is located on an offshore island and there are no direct or indirect pathways for potential impacts from any of the Plan elements to reach this qualifying interest. The Annex II species which are also qualifying interests are marine species and there are no potential direct or indirect pathways for elements of the Plan to influence these qualifying interests. No likely significant effect.	No
004069	Lambay Island SPA	3.7km	Fulmar (<i>Fulmarus glacialis</i>) [A009], Cormorant (<i>Phalacrocorax carbo</i>) [A017], Shag (<i>Phalacrocorax aristotelis</i>) [A018], Greylag Goose (<i>Anser anser</i>) [A043], Lesser Black-backed Gull (<i>Larus fuscus</i>) [A183], Herring Gull (<i>Larus argentatus</i>) [A184], Kittiwake (<i>Rissa tridactyla</i>) [A188], Guillemot (<i>Uria aalge</i>) [A199], Razorbill (<i>Alca torda</i>) [A200], Puffin (<i>Fratercula arctica</i>) [A204] Conservation Objectives [Generic]	Although this site is located offshore and is outside the Plan area, several of the listed species of conservation interest may at times use habitats situated in ecologically connected areas that are within the Plan boundary, such as the Rogerstown Estuary and the River Nanny Estuary. The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for these species of conservation interest. No likely significant effect.	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
000205	Malahide Estuary SAC	Within Plan Area	<p>Mudflats and sandflats not covered by seawater at low tide [1140], Salicornia and other annuals colonising mud and sand [1310], Spartina swards (<i>Spartinion maritimae</i>) [1320], Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330], Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120], Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</p> <p>Conservation Objectives published 27 May 2013 Version 1</p>	<p>Many watercourses within the Plan area drain into this estuary and therefore there is the potential for indirect (downstream) impacts on qualifying interests from elements of the plan.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at the European site in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of the site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this site.</p> <p>No likely significant effect.</p>	Yes
004006	North Bull Island SPA	7.3km	<p>Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046], Shelduck (<i>Tadorna tadorna</i>) [A048], Teal (<i>Anas crecca</i>) [A052], Pintail (<i>Anas acuta</i>) [A054], Shoveler (<i>Anas clypeata</i>) [A056], Oystercatcher (<i>Haematopus ostralegus</i>) [A130], Golden Plover (<i>Pluvialis apricaria</i>) [A140], Grey Plover (<i>Pluvialis squatarola</i>) [A141], Knot (<i>Calidris canutus</i>) [A143], Sanderling (<i>Calidris alba</i>) [A144], Dunlin (<i>Calidris alpina</i>) [A149], Black-tailed Godwit (<i>Limosa limosa</i>) [A156], Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157], Curlew (<i>Numenius arquata</i>) [A160], Redshank (<i>Tringa totanus</i>) [A162], Turnstone (<i>Arenaria interpres</i>) [A169], Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179], Wetland and Waterbirds [A999]</p> <p>Conservation Objectives published 09 Mar 2015 Version 1</p>	<p>This site is located 7.3km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with the Plan elements. However, several of the listed species of conservation interest may at times use habitats situated in ecologically connected areas that are within the Zone of Influence of the Plan, such as Rogerstown Estuary and Broadmeadow / Malahide Estuary.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for these species of conservation interest.</p> <p>No likely significant effect.</p>	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
000206	North Dublin Bay SAC	7.3km	Mudflats and sandflats not covered by seawater at low tide [1140], Annual vegetation of drift lines [1210], Salicornia and other annuals colonising mud and sand [1310], Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330], Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410], Embryonic shifting dunes [2110], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120], Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130], Humid dune slacks [2190], <i>Petalophyllum ralfsii</i> (Petalwort) [1395]	<p>This site is located 7.3km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with any elements of the Plan. There are no direct or indirect pathways for potential impacts from any of the Plan elements to reach the qualifying interests of this site.</p> <p>No likely significant effect.</p>	No
002299	River Boyne And River Blackwater SAC	1.2km	<p>Alkaline fens [7230], Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0], <i>Lampetra fluviatilis</i> (River Lamprey) [1099], <i>Salmo salar</i> (Salmon) [1106], <i>Lutra lutra</i> (Otter) [1355]</p> <p>Conservation Objectives [Generic]</p>	<p>This site is located 1.2km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with any elements of the Plan. However, the Annex I species otter may range across the boundary of the hydrometric area and thus may potentially be influenced by elements of the Plan.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this qualifying interest.</p> <p>No likely significant effect.</p>	Yes
004232	River Boyne and River Blackwater SPA	1.4km	<p>Kingfisher (<i>Alcedo atthis</i>) [A229]</p> <p>Conservation Objectives [Generic]</p>	<p>This site is located 1.4km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with any elements of the Plan. However the species of conservation</p>	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
				<p>interest, Kingfisher, may range between hydrometric areas and thus may be influenced by elements of the plan.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this species of conservation interest.</p> <p>No likely significant effect.</p>	
004158	River Nanny Estuary and Shore SPA	Within Plan Area	<p>Oystercatcher (<i>Haematopus ostralegus</i>) [A130], Ringed Plover (<i>Charadrius hiaticula</i>) [A137], Golden Plover (<i>Pluvialis apricaria</i>) [A140], Knot (<i>Calidris canutus</i>) [A143], Sanderling (<i>Calidris alba</i>) [A144], Herring Gull (<i>Larus argentatus</i>) [A184], Wetland and Waterbirds [A999]</p> <p>Conservation Objectives published 21 September 2012 Version 1.0</p>	<p>A large portion of the hydrometric area drains into the River Nanny Estuary and therefore there is the potential for indirect (downstream) impacts on species of conservation interest from elements of the Plan.</p> <p>The European site is generally below the high water mark and it is therefore unlikely that any physical works for the installation of gauging stations would take place sufficiently close to the site to cause disturbance to birds. If noise or visual disturbance from construction were to occur, it would be temporary in nature. It is unlikely that such a temporary event would impede achieving the conservation objectives set for this site.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at the European site in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of the site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the</p>	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
				conservation objectives set for this site. No likely significant effect.	
004014	Rockabill SPA	1.7km	Purple Sandpiper (<i>Calidris maritima</i>) [A148], Roseate Tern (<i>Sterna dougallii</i>) [A192], Common Tern (<i>Sterna hirundo</i>) [A193], Arctic Tern (<i>Sterna paradisaea</i>) [A194] Conservation Objectives published 08 May 2013 Version 1	This site is located 1.7km outside the Plan area and is on an offshore island. It therefore has no hydrological connectivity with the Plan elements. However, several of the listed species of conservation interest may at times use habitats situated in ecologically connected areas that are within the Zone of Influence of the Plan. The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this species of conservation interest. No likely significant effect.	Yes
003000	Rockabill to Dalkey Island SAC	0.6km	Reefs [1170], <i>Phocoena phocoena</i> (Harbour Porpoise) [1351]	The qualifying interest 'reefs' is a marine habitat located in the offshore zone and there are no direct or indirect pathways for potential impacts from any of the Plan elements to reach this qualifying interest. The Annex II species harbour porpoise is also a marine species and there are also no potential direct or indirect pathways for elements of the Plan to influence this qualifying interest. No likely significant effect.	No
000208	Rogerstown Estuary SAC	Within Plan Area	Estuaries [1130], Mudflats and sandflats not covered by seawater at low tide [1140], Salicornia and other annuals colonising mud and sand [1310], Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330],	A large portion of the hydrometric area drains into the River Nanny Estuary and therefore there is the potential for indirect (downstream) impacts on qualifying interests from elements of the Plan.	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
			<p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410], Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120], Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]</p> <p>Conservation Objectives published 14 Aug 2013 Version 1</p>	<p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at the European site in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of the site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this site.</p> <p>No likely significant effect.</p>	
004015	Rogerstown Estuary SPA	Within Plan Area	<p>Greylag Goose (<i>Anser anser</i>) [A043], Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046], Shelduck (<i>Tadorna tadorna</i>) [A048], Shoveler (<i>Anas clypeata</i>) [A056], Oystercatcher (<i>Haematopus ostralegus</i>) [A130], Ringed Plover (<i>Charadrius hiaticula</i>) [A137], Grey Plover (<i>Pluvialis squatarola</i>) [A141], Knot (<i>Calidris canutus</i>) [A143], Dunlin (<i>Calidris alpina</i>) [A149], Black-tailed Godwit (<i>Limosa limosa</i>) [A156], Redshank (<i>Tringa totanus</i>) [A162], Wetland and Waterbirds [A999]</p> <p>Conservation Objectives published 20 May 2013 Version 1</p>	<p>A large portion of the hydrometric area drains into the River Nanny Estuary and therefore there is the potential for indirect (downstream) impacts on species of conservation interest from elements of the Plan.</p> <p>The European site is generally below the high water mark and it is therefore unlikely that any physical works for the installation of gauging stations would take place sufficiently close to the site to cause disturbance to birds. If noise or visual disturbance from construction were to occur, it would be temporary in nature. It is unlikely that such a temporary event would impede achieving the conservation objectives set for this site.</p> <p>The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at the European site in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of the site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this site.</p> <p>No likely significant effect.</p>	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
001398	Rye Water Valley/Carlton SAC	9.5km	Petrifying springs with tufa formation (<i>Cratoneurion</i>) [7220], <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) [1014], <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) [1016]	This site is located 9.5km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with any elements of the Plan. There is no potential impact pathway from the elements of the Plan to the qualifying interests of the site. No likely significant effect.	No
004122	Skerries Islands SPA	0.3km	Cormorant (<i>Phalacrocorax carbo</i>) [A017], Shag (<i>Phalacrocorax aristotelis</i>) [A018], Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046], Purple Sandpiper (<i>Calidris maritima</i>) [A148], Turnstone (<i>Arenaria interpres</i>) [A169], Herring Gull (<i>Larus argentatus</i>) [A184] Conservation Objectives [Generic]	This site is located 0.3km outside the Plan area and is located offshore. It therefore has no hydrological connectivity with the Plan elements. However, several of the listed species of conservation interest may at times use habitats situated in ecologically connected areas that are within the Zone of Influence of the Plan, such as the River Nanny Estuary and Shore, Rogerstown Estuary and Broadmeadow/Swords Estuary (Malahide Estuary). The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this species of conservation interest. No likely significant effect.	Yes
004024	South Dublin Bay and River Tolka Estuary SPA	11.1km	Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046], Oystercatcher (<i>Haematopus ostralegus</i>) [A130], Ringed Plover (<i>Charadrius hiaticula</i>) [A137], Grey Plover (<i>Pluvialis squatarola</i>) [A141], Knot (<i>Calidris canutus</i>) [A143], Sanderling (<i>Calidris alba</i>) [A144], Dunlin (<i>Calidris alpina</i>) [A149], Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157], Redshank (<i>Tringa totanus</i>) [A162], Black-headed Gull	This site is located 11.1km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with the Plan elements. However, several of the listed species of conservation interest may at times use habitats situated in ecologically connected areas that are within the Zone of Influence of the Plan, such as the River Nanny Estuary and Shore, Rogerstown Estuary and Broadmeadow/Swords Estuary (Malahide Estuary). The adoption of standard best practice in construction activity as outlined in 3.4 will result in there being no likely escape of	Yes

Site Code	Site Name	Distance	Qualifying Interests or Special Conservation Interests	Pathway / Potential for Significant Effects	Potential for in-combination Effects
			<p>(<i>Chroicocephalus ridibundus</i>) [A179], Roseate Tern (<i>Sterna dougallii</i>) [A192], Common Tern (<i>Sterna hirundo</i>) [A193], Arctic Tern (<i>Sterna paradisaea</i>) [A194], Wetland and Waterbirds [A999]</p> <p>Conservation Objectives published 09 Mar 2015 Version 1</p>	<p>suspended sediments or polluting substances to the surface water network to arrive at any neighbouring European sites or other supporting sites in such concentrations as to cause significant deterioration of water quality or sedimentation in the European site. Even in the unlikely event that deterioration of the water quality of a linked site did occur, even if only temporarily, it is unlikely that such a temporary event would impede achieving the conservation objectives set for this species of conservation interest.</p> <p>No likely significant effect.</p>	
000210	South Dublin Bay SAC	11.1km	<p>Mudflats and sandflats not covered by seawater at low tide [1140], Annual vegetation of drift lines [1210], Salicornia and other annuals colonising mud and sand [1310], Embryonic shifting dunes [2110]</p>	<p>This site is located 11.1km outside the Plan area and is in a separate hydrometric area. It therefore has no hydrological connectivity with any elements of the Plan. There is no potential impact pathway from the elements of the Plan to the qualifying interests of the site.</p> <p>No likely significant effect.</p>	No

4.3 IN-COMBINATION WITH OTHER PLANS AND PROJECTS

This assessment aims to identify any possible significant in-combination or cumulative effects of the proposed Plan with other Plans and projects on the identified European sites. A series of individually modest impacts may, in combination, produce a significant impact.

The screening process identified other plans and projects that could act in combination with the Plan to theoretically pose likely significant effects on the European sites identified in Table 4.1 as having potential for in-combination effects. The cumulative/in-combination impact assessment has not included European-level plans/policies as in all relevant cases these have been integrated into lower tier plans/legislation.

An assessment of the potential in-combination effects of other plans and projects is presented in Table 4.2. Plans listed in Table 4.1 which on review were found to be unlikely to result in any potential in-combination or cumulative effects with the Plan have not been included in this table.

Table 4.2: Potential cumulative and in-combination effects with other Plans, Programmes and Projects.

Plan/Project	Key Policies/Objectives/Issues	Assessment of In-Combination Effects
National Plans and Programmes		
Arterial Drainage Maintenance and High Risk Designation Programme 2016-2021	Within the Nanny-Delvin River Basin the OPW has implemented and maintains the Broadmeadow and Ward Arterial Drainage Scheme and the Matt Arterial Drainage Scheme, completed by the OPW during the 1960s, under the 1945 Arterial Drainage Act. The OPW continues to have statutory responsibility for inspection and maintenance of the Scheme, which includes much of the main channels and a large number of designated tributaries.	<p>Potential in combination effects may occur where there is a requirement to carry out Arterial Drainage Maintenance.</p> <p>Arterial Drainage maintenance may result in habitat loss, alteration of hydrology, deterioration in water quality, disturbance.</p> <p>The OPW have undertaken separate environmental and appropriate assessments of the maintenance of their arterial drainage schemes. Provided that maintenance activities are carried out in accordance with these plans, significant cumulative or in-combination effects on European sites are unlikely.</p>
Irish Water's Water Services Strategic Plan 2015 and associated Proposed Capital Investment Plan 2015-2021	This Water Services Strategic Plan sets out strategic objectives for the delivery of water services over the next 25 years up to 2040. It details current and future challenges which affect the provision of water services and identifies the priorities to be tackled in the short and medium term.	<p>Potential in-combination effects may arise where there is a requirement to provide for new water and waste water infrastructure and capacity.</p> <p>Provision of water infrastructure and increases in capacity may result in habitat loss, alteration of hydrology, deterioration in water quality and disturbance.</p> <p>Provided that infrastructure activities are carried out in accordance with these plans, significant cumulative or in-combination effects on European sites are unlikely.</p>

Plan/Project	Key Policies/Objectives/Issues	Assessment of In-Combination Effects
National Spatial Strategy, 2002 - 2020	A 20-year coherent national planning framework for Ireland that aims to achieve a better balance of social, economic and physical development across Ireland, supported by more effective and integrated planning.	Potential in-combination effects may occur where there is requirement to provide for new infrastructure or where new development occurs. Provision of infrastructure/development may result in habitat loss, alteration of hydrology, deterioration in water quality and disturbance. The NSS is implemented at Sub-Regional level by County and Local Development Plans; these typically have included policies to limit significant impacts on European sites.
River Basin Management Plan for Ireland (2018-2021) (Draft)	River Basin Management Planning provides a catchment based framework to protect Ireland's water bodies and develop collaborative approaches to water management in order to safeguard waters and meet the environmental objectives of the WFD.	This management plan provides a framework for cleaner and less polluted ground and surface water. The FRMP has been prepared with achieving the objectives of the RBMP in mind and consequently should not result in any adverse in-combination impacts.
Food Wise 2025 Food Harvest 2020	Food Harvest aims to innovate and expand the Irish food industry in response to increased global demand for quality foods. It sets out a vision for the potential growth in agricultural output. Food Wise is a non-statutory proposal that sits at a high level in terms of the range of policies, plans and programmes that may influence the agriculture sector in Ireland.	Potential in-combination impacts may arise due to increased pressures on the water environment associated with an intensification of agriculture. Significant cumulative or in-combination effects on European sites at project level are unlikely.
National Strategic Plan for Sustainable Aquaculture	Aims to secure sustainable development and growth of aquaculture through coordinated spatial planning, to enhance the competitiveness of the aquaculture sector and to promote a level playing field for EU operators by exploiting their competitive advantages.	Potential in-combination impacts may arise due to increased sedimentation, biogeochemical changes, chemical inputs, infrastructure impact, noise and visual disturbance, predator control associated with an intensification of aquaculture. Significant cumulative or in-combination effects on European sites with Plan elements at project level are unlikely.
Regional Plans and Programmes		
Eastern River Basin District Management Plan 2009-2015	River Basin Management Planning provides a catchment based framework to protect Ireland's water bodies and develop collaborative approaches to water management in order to safeguard waters and meet the environmental objectives of the WFD.	This management plan provides a framework for cleaner and less polluted ground and surface water. The FRMP has been prepared with achieving the objectives of the RBMP in mind and consequently should not result in any adverse in-combination impacts.

Plan/Project	Key Policies/Objectives/Issues	Assessment of In-Combination Effects
Draft Transport Strategy for the Greater Dublin Area 2016-2035	The Transport Strategy provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area (GDA) for the next two decades. It also provides a transport planning policy around which other agencies involved in land use planning, environmental protection, and delivery of other infrastructure such as housing, water and power, can align their investment priorities.	The NIR for the GDA draft transport strategy has identified that construction of new transport infrastructure may result in adverse impacts on European sites including loss / reduction of habitat area; Disturbance to Key Species (e.g. increased public access to protected sites, or during the construction phase of infrastructure projects); Habitat or species fragmentation; Reduction in species density and changes in key indicators of conservation value. Provided that infrastructure activities are carried out in accordance with the mitigation set out in the NIR prepared for the Strategy, significant cumulative or in-combination effects on European sites are unlikely.
Regional Planning Guidelines for the Greater Dublin Area 2010-2022	Policy document which aims to direct the future growth of the Greater Dublin Area over the medium to long term and works to implement the strategic planning framework set out in the National Spatial Strategy (NSS).	Potential in-combination impacts may arise where there is a requirement to provide for new development and water services infrastructure. The Regional Planning Guidelines are implemented at Sub-Regional level by County and Local Development Plans; these typically have included policies to limit significant impacts on European sites. Significant cumulative or in-combination effects on European sites are unlikely.
Sub-Regional Plans and Programmes		
Maintenance of Drainage Districts	Local Authorities have responsibilities to maintain watercourse channels. In relation to the seven Drainage Districts located within Nanny-Delvin River Basin, (Ward DD, Curragher DD, Garristown & Devlin DD, Bartramstown DD, Nanny DD, Nanny Upper DD and Mornington DD) none are located directly on the key watercourses where fluvial and coastal flood risk is being considered within Ireland's first cycle assessment under the Floods Directive.	The local authorities shall maintain the Drainage Districts in their jurisdictional area in accordance with legislation. Any maintenance works to be carried out would be subject to the relevant environmental assessment requirements, including Screening for Appropriate Assessment and surveys for protected species. Provided that maintenance activities are carried out in accordance with these requirements, significant cumulative or in-combination effects on European sites are unlikely.
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.	Local landowners and farmers carry out agricultural and drainage maintenance activities within the Plan area. These activities have been ongoing for many decades and are likely to be periodic and local in nature, however they may result in habitat loss, alteration of hydrology, deterioration in water quality and disturbance. Provided the FRM works are planned and managed correctly, the in-

Plan/Project	Key Policies/Objectives/Issues	Assessment of In-Combination Effects
		combination effects of FRM measures and agricultural/drainage operations is not likely to be significant.
County Meath Development Plan: 2013 – 2019 Draft Fingal Development Plan: 2017-2023 Fingal Development Plan: 2011 – 2017	These plans present the overall strategies for the proper planning and sustainable development of the administrative area of the relevant Local Authorities.	These plans acting alone or in combination can have a cumulative impact on European sites located within the Plan area. Provision of infrastructure or where new development occurs may result in habitat loss, alteration of hydrology, deterioration in water quality and disturbance during construction / operation. Appropriate assessment has been carried out on each plan and policies have been developed within each plan that will help to maintain specific conditions underpinning site integrity for each qualifying feature type. Significant cumulative or in-combination effects on European sites are unlikely.
Ashbourne Local Area Plan 2009-2015 Balbriggan SE Local Area Plan Balbriggan Stephenstown Local Area Plan 2007 Ballyboghil Local Area Plan 2017-2022 Donabate Local Area Plan 2014-2020 (proposed) Dublin Airport Local Area Plan, June 2006 -2015 Dunshaughlin Electoral Area Development Plan East Meath Local Area Plan 2014-2020 Garristown Local Area Plan 2015-2020 Kinsealy Local Area Plan 2014-2020 (proposed) Lusk Local Area Plan 2009 Oldtown Local Area Plan 2015-2022 Portmarnock Local Area Plan 2006 Portmarnock South Local Area Plan Ratoath Local Area Plan 2009-2015 Rowlestown Local Area Plan 2013-2019 Rush Kenure Local Area Plan 2009-2019 Streamstown Local Area Plan 2009-2019	These plans present strategies for development in individual towns and villages in the Plan area, some of which are AFAs.	These plans acting alone or in combination can have a cumulative impact on European sites located within the Plan area. Provision of infrastructure or where new development occurs may result in habitat loss, alteration of hydrology, deterioration in water quality and disturbance during construction / operation. Appropriate assessment has not been carried out on all of these plans, however at project level any project requiring development consent would be subject to relevant legislation relating to AA and EIA screening. Significant cumulative or in-combination effects on European sites are unlikely.
Greater Dublin Strategic Drainage Strategy	This strategy was introduced to combat the pressures on the storm and foul water drainage infrastructure since the increased development within the Greater Dublin Region since the 1990s.	This strategy provides for sustainable drainage works throughout the GDA, potential for in-combination impacts may potentially occur where the construction of new drainage is required.

Plan/Project	Key Policies/Objectives/Issues	Assessment of In-Combination Effects
		Significant cumulative or in-combination effects on European sites with Plan elements at project level are unlikely.
<p>Ashbourne Flood Relief Scheme Northlands Flood Relief Scheme Duleek Flood Relief Scheme Rowlestown Minor Flood Relief Works Skerries Flood Relief Scheme Laytown, Bettystown & Coastal Areas Flood Relief Scheme Potential Measures for Flood Relief at Rush AFA and Ratoath AFA</p>	<p>Flood Relief Schemes and Works Progressed or Proposed through the Fingal East Meath Flood Risk Management Plan (FEM-FRMP).</p>	<p>These Flood Relief Schemes acting alone or in combination could have a cumulative impact with Plan elements on European sites located within the Plan area.</p> <p>Appropriate assessment has been carried out on the FRM FRMP. The AA has identified potential impacts including habitat loss / coastal squeeze, alteration of hydrology and patterns of freshwater input, changes in food supply and disturbance.</p> <p>The AA and FRM FRMP have included a number of measures at Plan level to avoid adverse effects and project level assessment has been/will be carried out for the schemes already constructed or in development.</p> <p>Provided that construction and maintenance activities are carried out in accordance with these measures, significant cumulative or in-combination effects on European sites are unlikely.</p>

5 CONCLUSION OF THE SCREENING ASSESSMENT

5.1 CONCLUSION OF SCREENING FOR APPROPRIATE ASSESSMENT

This Screening for Appropriate Assessment was completed in accordance with the approach set out at Section 2 of this report. The Nanny – Delvin River Basin Flood Risk Management Plan prepared under the Eastern CFRAM Study has been considered in the context of the European sites identified within the Plan's zone of influence, their Qualifying Interests and Special Conservation Interests and any conservation objectives which have been set.

From the findings of the Screening exercise, it is concluded that the proposed Plan

- Is not directly connected with or necessary to the management of any European site;
- Will not give rise to significant effects on the Qualifying Interests of any European site within the project's zone of influence, in view of best scientific knowledge and in view of the conservation objectives of those sites.

REFERENCES

DEHLG (2010a) *Appropriate Assessment of Plans and Projects in Ireland – Guidance for Planning Authorities.*

DEHLG (2010b) *Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities*

EC (2000a) *Communication from the Commission on the Precautionary Principle*, Office for Official Publications of the European Communities, Luxembourg

EC (2000b) *Managing Natura 2000 sites: the provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC.*

EC (2001) *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.*

EC (2011) *Guidelines on the Implementation of the Birds and Habitats Directives in Estuaries and Coastal Zones.*

EC (2007) *Guidance Document on Article 6(4) of the Habitats Directive 92/43/EEC.*

EC (2013) *Guidelines on Climate Change and Natura 2000 Dealing with the impact of climate change on the management of the Natura 2000 Network of areas of high biodiversity value.*

EPA (2012) *Integrated Biodiversity Impact Assessment best practice guidance; Streamlining AA, SEA and EIA Processes, Best Practice Guidance.*

Halcrow Barry (2011) *Fingal-East Meath Flood Risk Assessment and Management Study (FEM-FRAMS) Appropriate Assessment – Stage 2: Statement for Appropriate Assessment*

Halcrow Barry (2012) *Fingal-East Meath Flood Risk Assessment and Management Study (FEM-FRAMS) – Flood Risk Management Plan*

NPWS (2014) *The Status of EU Protected Habitats and Species in Ireland 2013 – Overview Report.*

.

GLOSSARY OF TERMS

Annual Exceedance Probability Or AEP	The probability, typically expressed as a percentage, of a flood event of a given magnitude being equalled or exceeded in any given year. For example, a 1% AEP flood event has a 1%, or 1 in a 100, chance of occurring or being exceeded in any given year.
Appropriate Assessment	An assessment of the effects of a plan or project on Natura 2000 sites (European Sites). European Sites comprise Special Protection Areas under the Birds Directive and Special Areas of Conservation under the Habitats Directive.
Area for Further Assessment or AFA	Areas where, based on the Preliminary Flood Risk Assessment, the risks associated with flooding are considered to be potentially significant. For these areas further, more detailed assessment is required to determine the degree of flood risk, and develop measures to manage and reduce the flood risk. The AFAs are the focus of the CFRAM Studies.
Arterial Drainage Scheme	Works undertaken under the Arterial Drainage Act (1945) to improve the drainage of land. Such works were undertaken, and are maintained on an ongoing basis, by the OPW.
Biodiversity	Word commonly used for biological diversity and defined as assemblage of living organisms from all habitats including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part.
Birds Directive	European Union Council Directive 2009/147/EC - codified version of Directive 79/409/EEC on the Conservation of Wild Birds, as amended
Catchment	The area of land draining to a particular point on a river or drainage system, such as an Area for Further Assessment (AFA) or the outfall of a river to the sea.
Catchment Flood Risk Assessment and Management Study Or CFRAM Study Consequences	<p>A study to assess and map the flood hazard and risk, both existing and potential future, from fluvial and coastal waters, and to define objectives for the management of the identified risks and prepare a Plan setting out a prioritised set of measures aimed at meeting the defined objectives.</p> <p>The impacts of flooding, which may be direct (e.g., physical injury or damage to a property or monument), a disruption (e.g., loss of electricity supply or blockage of a road) or indirect (e.g., stress for affected people or loss of business for affected commerce)</p>
Drainage	Works to remove or facilitate the removal of surface or sub-surface water, e.g., from roads and urban areas through urban storm-water drainage systems, or from land through drainage channels or watercourses that have been deepened or increased in capacity.
Drainage District	Works across a specified area undertaken under the Drainage Acts to facilitate land drainage.
Estuary	A semi-enclosed coastal body of water with one or more rivers or streams flowing into it, and with an open connection to the sea.
Flood	The temporary covering by water of land that is not normally covered by water.
‘Floods’ Directive	The European Union ‘Floods’ Directive [2007/60/EC] is the Directive that came into force in November 2007 requiring Member States to undertake a PFRA to identify Areas for Further Assessment (AFAs), and then to prepare flood maps and Plans for these areas.
Flood Extent	The extent of land that has been, or might be, flooded. Flood extent is often represented on a flood map.
Flood Risk	Refers to the potential adverse consequences resulting from a flood hazard. The level of flood risk is the product of the frequency or likelihood of flood events and their consequences (such as loss, damage, harm, distress and disruption).
Flood Risk Management Method	Structural and non-structural interventions that modify flooding and flood risk either through changing the frequency of flooding, or by changing the extent and consequences of flooding, or by reducing the vulnerability of those exposed to flood risks.
Flood Risk Management Option	Can be either a single flood risk management method in isolation or a combination of more than one method to manage flood risk.
Flood Risk Management Plan (Plan)	A Plan setting out a prioritised set of measures within a long-term sustainable strategy aimed at achieving defined flood risk management objectives. The Plan is developed at a River Basin (Unit of Management) scale, but is focused on managing risk within the AFAs.
Floodplain	The area of land adjacent to a river or coastal reach that is prone to periodic flooding from that river or the sea.

Fluvial	Riverine, often used in the context of fluvial flooding, i.e., flooding from rivers, streams, etc.
Groundwater	All water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil. This zone is commonly referred to as an aquifer which is a subsurface layer or layers of rock or other geological strata of sufficient porosity and permeability to allow a significant flow of groundwater or the abstraction of significant quantities of groundwater.
Habitats Directive	The Habitats Directive [92/43/EEC] on the Conservation of Natural Habitats and of Wild Flora and Fauna aims at securing biodiversity through the provision of protection for animal and plant species and habitat types deemed to be of European conservation importance.
Hazard	Something that can cause harm or detrimental consequences. In this context, the hazard referred to is flooding.
Hydraulics	The science of the behaviour of fluids, often used in this context in relation to estimating the conveyance of flood water in river channels or structures (such as culverts) or overland to determine flood levels or extents.
Hydrology	The science of the natural water cycle, often used in this context in relation to estimating the rate and volume of rainfall flowing off the land and of flood flows in rivers.
Hydrometric Area	Hydrological divisions of land, generally large catchments or a conglomeration of small catchments, and associated coastal areas. There are 40 Hydrometric Areas in the island of Ireland.
Hydromorphology	The physical characteristics of the shape, boundaries and content of a water body. For rivers, this includes river depth and width variation, structure and substrate of the river bed and structure of the riparian zone. For lakes it includes lake depth variation, quantity, structure & substrate of the lake bed and structure of the lake shore.
Individual Risk Receptor Or IRR	A single receptor (see below) that has been determined to represent a potentially significant flood risk (as opposed to a community or other area at potentially significant flood risk AFA).
Inundation	Another word for flooding or a flood (see 'Flood')
Measure	A measure (when used in the context of a flood risk management measure) is a set of works, structural and / or non-structural, aimed at reducing or managing flood risk.
Mitigation Measures	Measures to avoid/prevent, minimise/reduce, or as fully as possible, offset/compensate for any significant adverse effects on the environment, as a result of implementing a plan or project.
Morphology / Morphological	See 'hydromorphology' above.
National CFRAM Programme	The programme developed by the OPW to implement key aspects of the EU 'Floods' Directive in Ireland, which includes the CFRAM Studies, and builds on the findings of the PFRA.
Natura 2000	European network of protected sites ('European sites') which represent areas of the highest value for natural habitats and species of plants and animals which are rare, endangered or vulnerable in the European Community. The Natura 2000 network includes two types of area: Special Areas of Conservation (SAC) where they support rare, endangered or vulnerable natural habitats and species of plants or animals (other than birds) and Special Protection Areas (SPA) where areas support significant numbers of wild birds and their habitats. SACs are designated under the Habitats Directive and SPAs are classified under the Birds Directive. Certain sites may be designated as both SAC and SPA.
Natural Heritage Area	An area of national nature conservation importance, designated under the Wildlife Act 1976 (as amended), for the protection of features of high biological or earth heritage value or for its diversity of natural attributes.
Non Structural Options	Include flood forecasting and development control to reduce the vulnerability of those currently exposed to flood risks and limit the potential for future flood risks.
Pluvial	Refers to rainfall, often used in the context of pluvial flooding, i.e., flooding caused directly from heavy rainfall events (rather than over-flowing rivers).
Preliminary Flood Risk Assessment Or PFRA	An initial, high-level screening of flood risk at the national level to determine where the risks associated with flooding are potentially significant, to identify the AFAs. The PFRA is the first step required under the EU 'Floods' Directive.
Ramsar Site	Wetland site of international importance designated under the Ramsar Convention on Wetlands of International Importance 1971, primarily because of its importance for waterfowl. All Ramsar sites hold the European designation of SAC or SPA (or both).

Receptor	Something that might suffer harm or damage as a result of a flood, such as a house, office, monument, hospital, agricultural land or environmentally designated sites.
Return Period	A term that was used to describe the probability of a flood event, expressed as the interval in the number of years that, on average over a long period of time, a certain magnitude of flood would be expected to occur. This term has been replaced by 'Annual Exceedance Probability, as Return Period can be misleading.
Riparian	River bank. Often used to describe the area on or near a river bank that supports certain vegetation suited to that environment (Riparian Zone).
Risk	The combination of the probability of flooding, and the consequences of a flood.
River Basin	An area of land (catchment) draining to a particular estuary or reach of coastline.
River Basin District Or RBD	A hydrological division of land defined for the purposes of the Water Framework Directive. There are eight RBDs in the island of Ireland; each comprising a group of River Basins.
Riverine	Related to a river.
Runoff	The flow of water over or through the land to a waterbody (e.g., stream, river or lake) resulting from rainfall events. This may be overland, or through the soil where water infiltrates into the ground.
Screening [or Test of Likely Significance]	The process which identifies the likely impacts upon a European site [Natura 2000 site] of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.
SEA Directive	European Directive 2001/42/EC on the Assessment of the Effects of certain Plans and Programmes on the Environment – 'Strategic Environmental Assessment'.
Sedimentation	The accumulation of particles (of soil, sand, clay, peat, etc.) in the river channel.
Significant Risk	Flood risk that is of particular concern nationally. The PFRA Main Report (see www.cfram.ie) sets out how significant risk is determined for the PFRA, and hence how Areas for Further Assessment have been identified.
Spatial Scale(s) of Assessment	Defines the spatial scale at which flood risk management options are assessed. Assessment Units are defined on four spatial scales ranging in size from largest to smallest as follows: catchment scale, Assessment Unit (AU) scale, Areas for Further Assessment (APSR) and Individual Risk Receptors (IRR).
Special Area of Conservation	A Special Area of Conservation (SAC) is an internationally important site, protected for its habitats and non-bird species. It is designated, as required, under the EC Habitats Directive. A candidate SAC (cSAC) is a candidate site, but is afforded the same status as if it were confirmed.
Special Protection Area	A Special Protection Area (SPA) is a site of international importance for breeding, feeding and roosting habitat for bird species. It is designated, as required, under the EC Birds Directive.
Standard of Protection Or SoP	The magnitude of flood, often defined by the annual probability of that flood occurring being exceeded (the Annual Exceedance Probability, or 'AEP'), that a measure / works is designed to protect the area at risk against.
Strategic Environmental Assessment Or SEA Structural Options	A SEA is an environmental assessment of plans (such as the Plans) and programmes to ensure a high level consideration of environmental issues in the plan preparation and adoption, and is a requirement provided for under the SEA directive [2001/42/EC] Involve the application of physical flood defence measures, such as flood walls and embankments, which modify flooding and flood risk either through changing the frequency of flooding, or by changing the extent and consequences of flooding.
Surface Water	Water on the surface of the land. Often used to refer to ponding of rainfall unable to drain away or infiltrate into the soil.
Surge	The phenomenon of high sea levels due to meteorological conditions, such as low pressure or high winds, as opposed to the normal tidal cycles
Sustainability	The capacity to endure. Often used in an environmental context or in relation to climate change, but with reference to actions people and society may take.
Tidal	Related to the tides of the sea / oceans, often used in the context of tidal flooding, i.e., flooding caused from high sea or estuarine levels.

Topography	The shape of the land, e.g., where land rises or is flat.
Transitional Water	The estuarine or inter-tidal reach of a river, where the water is influenced by both freshwater river flow and saltwater from the sea.
Unit of Management Or UoM	A hydrological division of land defined for the purposes of the Floods Directive. One Plan will be prepared for each Unit of Management, which is referred to within the Plan as a River Basin.
Vulnerability	The potential degree of damage to a receptor (see above), and the degree of consequences that would arise from such damage.
Water Framework Directive Or WFD	The Water Framework Directive [2000/60/EC] aims to protect surface, transitional, coastal and ground waters to protect and enhance the aquatic environment and ecosystems and promote sustainable use of water resources
Waterbody	A term used in the Water Framework Directive (see below) to describe discrete section of rivers, lakes, estuaries, the sea, groundwater and other bodies of water.
Watercourse	Any flowing body of water including rivers, streams, drains, ditches etc.
Zone of Influence	The area over which ecological features may be subject to significant effects as a result of the proposed Plan and associated activities. This may extend beyond the Plan area, for example where there are ecological or hydrological links beyond the Plan boundary. The zone of influence may vary for different ecological features depending on their sensitivity to an environmental change.



The Office of Public Works
Head Office
Jonathan Swift Street
Trim
Co. Meath
C15 NX36

Telephone: (0761) 106000, (046) 942 6000
E-mail: floodinfo@opw.ie
Website: www.floodinfo.ie