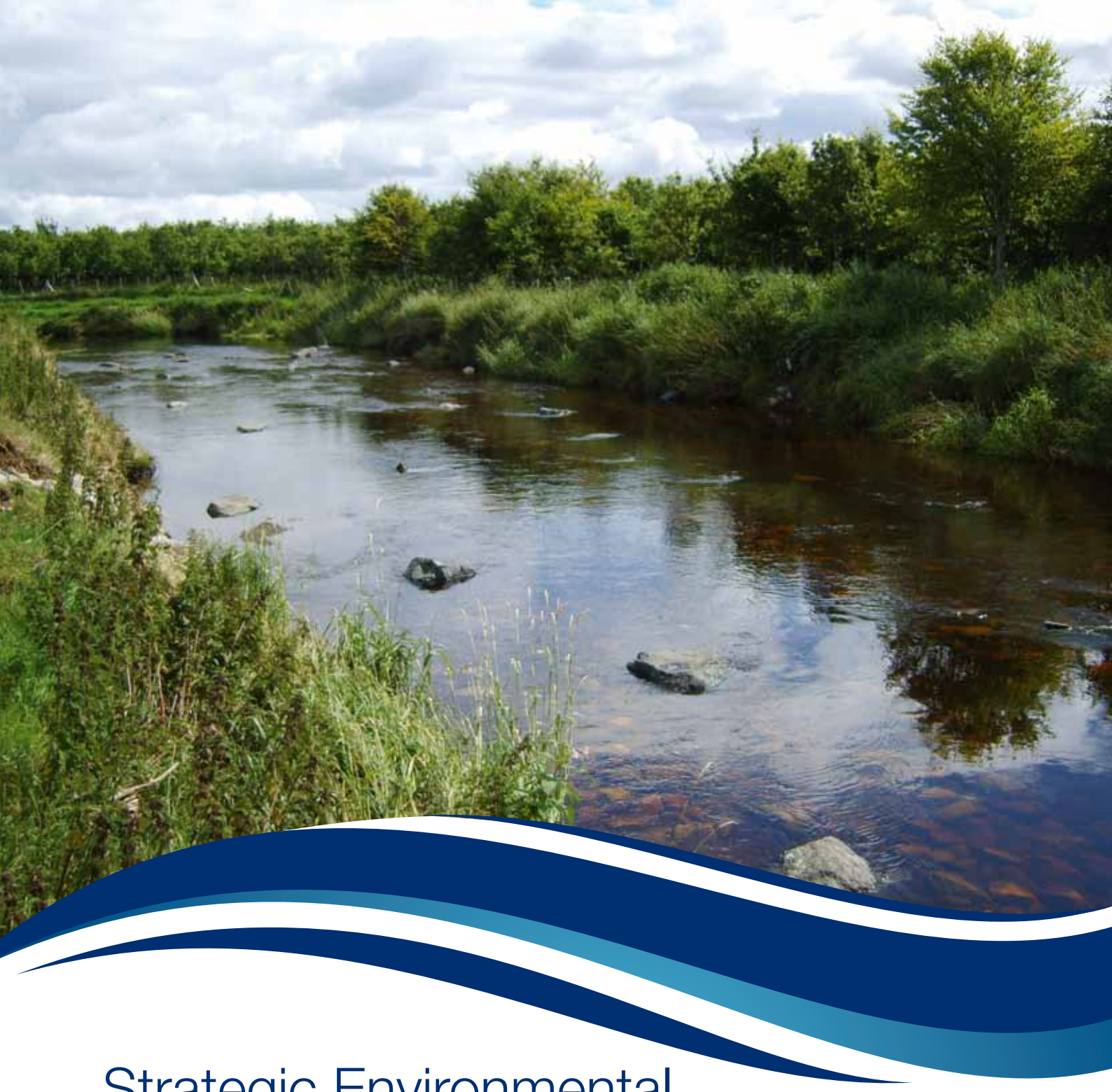

Strategic Environmental Assessment Final Statement

RIVERS Agency

Department of Agriculture and Rural Development
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Tel: (028) 90253355

Fax: (028) 90253455

Email: Rivers.Registry@dardni.gov.uk

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1. Introduction

The Strategic Environmental Assessment Directive states, within Article 1, that its objective is *"to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development."*

The assessment procedure comprises:

- The production of the SEA Scoping document, consultation with statutory consultees, and the receipt of responses
- The preparation of an Environmental Report on the likely significant effects of the draft plan or programme
- Consultation on the draft plan or programme and the accompanying Environmental Report
- The incorporation of the Environmental Report and its findings into decision making
- The provision of information (the SEA Statement) when the plan or programme is adopted, and the demonstration of how the results of the environmental assessment have been taken into account.

This Strategic Environmental Assessment Statement has been prepared as part of the Strategic Environmental Assessment (SEA) of the Flood Risk Management Plans (FRMPs) for Northern Ireland. The purpose of the Statement is to:

- Provide an overview of the SEA process
- Provide a comprehensive review of the potential areas of impact arising from the SEA
- Provide information on the decision making process
- Document how environmental consideration, consultee's views, and the outcomes of the Habitats Regulations Assessment (HRA) and the Environmental Report have been taken into account in the development of the final Flood Risk Management Plans.

This Statement has been prepared in accordance with Part IV, Section 15(4) of the Environmental Assessment of Plans and Processes Regulation (Northern Ireland) (S.R. 280/2004).

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2. Structure of the Plans

The FRMPs (the Plans) have been prepared for each of the three River Basin Districts (as for the Water Framework Directive). Within these Plans sit specific measures for the 20 Significant Flood Risk Areas (SFRAs) which have been identified through the Preliminary Flood Risk Assessment process. At the draft stage, one Plan was produced with three subsections for each of the River Basin Districts. Hence one Environmental Report has been produced. At the final stage, 3 separate Plans have been produced. However, to maintain consistency through the SEA process, one SEA statement has been produced. This reflects the strategic nature of the Plans, with the same measures, measure types and activities identified for each River Basin District.

The key facts about the Plans are summarised in Table 1 below:

Table 1 : Key Facts about the Flood Risk Management Plans

Responsible Authority	Department of Agriculture and Rural Development (DARD), Rivers Agency
Title	Flood Risk Management Plans for Northern Ireland (Neagh Bann, North Eastern and North Western)
Purpose	Management of Flood Risk
What prompted the Flood Risk Management Plans	The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009
Period covered	December 2015 – December 2021
Frequency of updates	Every six years
Area covered	Northern Ireland and in particular 20 areas of potentially significant flood risk, i.e. Belfast, Newtownards, Carrickfergus & Kilroot Power Station, Bangor, Newcastle, Newtownabbey, Downpatrick, Dundonald, Londonderry, Omagh, Strabane, Newry, Portadown, Warrenpoint, Banbridge, Lurgan, Glengormley & Mallusk, Antrim, Ballymena and Coleraine.
Objectives of Flood Risk Management Plans	To inform the implementation of land use policies to prevent flooding. To reduce the likelihood of flooding, where possible, taking into account economic and environmental factors. To raise the awareness of flood risk and planning for an emergency response and recovery
Contact	DARD, Rivers Agency, Strategic Planning Unit Hydebank, 4 Hospital Road, Ballydollaghan, Belfast, BT8 8JP

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3 Summary of the SEA Process

3.1 SEA of the Plans

The SEA of the Plans was carried out in order to satisfy the requirements of the SEA Directive and to ensure that any likely significant effects of the Plans on the environment were addressed as far as possible. It had been determined that the SEA was required for the Plans because:

- The Plans were prepared for water management related development;
- The Plans contain policies and proposals which could potentially give rise to significant environmental effects; and,
- The Plans have been prepared by DARD, Rivers Agency for adoption at a national level.

3.2 Scoping and Statutory Consultation

Scoping was carried out to establish the SEA topics relevant to the draft Plan. The scoping also established the level of detail appropriate for the Environmental Report, based on the detail contained within the draft Plan itself.

The draft Plan is at a regional level, with measures addressing flood risk management through policy recommendations and generic guidance. Additionally, the draft Plan identifies potential measures and measure types, both structural and non-structural, to manage flood risk management in the 20 Significant Flood Risk Areas identified within the Preliminary Flood Risk Assessment. These include both short and long term measures types grouped under the three measure heading of **Prevention, Preparedness** and **Protection**.

This range of measures and measure types forms the alternatives within the Plans. Whilst other measure types such as natural flood risk management, through landuse management, and Sustainable Urban Drainage, are listed within the possible measure types, legislation is not yet in place to implement and manage these measure types. Additionally, other Departments are leading on these work areas, and the Department's role is one of support. As such, the Department aims to investigate and develop these measure types in partnership with other Departments and authorities, within the timeframe of the first planning cycle.

The draft SEA was sent to the statutory consultees in both Northern Ireland and the Republic of Ireland on 22 October 2014. Taking into account the responses from these consultees, the draft Environmental Report was published, and put out to public consultation along with the draft Plan, in December 2014.

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3.3 Environmental Report

The Environmental Report for the NI Flood Risk Management Plans included the following areas of consideration:

- Baseline data on the current state of the environment
- Key environmental issues in Northern Ireland
- Links and potential cumulative effects from the Plans, and other relevant strategies, plans and programmes
- The likely significant effects of the Plans on the environment
- Measures proposed for the prevention, minimisation and mitigation of any significant adverse effects
- Monitoring measures

3.4 Habitats Regulations Assessment (Article 6)

A Habitats Regulations Article 6 assessment is required under the Habitats Directive (92/43/EEC), where a plan or project may give rise to significant effects upon a Natura 2000 site (N2K). As the Plans are deemed to have the potential to cause such effects, a Habitats Regulations Assessment was carried out, based on the 20 significant flood risk areas where measures are likely to be proposed. The assessment looked at generic measures (policy or non-structural) and potential site specific measures (more structural in character). As the Plans are strategic in nature, the assessment was also strategic in nature, identifying potential areas of impact, and mitigation measures to reduce this impact to a level which is not significant.

3.5 SEA Statement

There are five key stages in the SEA process:

- Stage A – Setting the context and objectives, establishing the baseline and defining the scope;
- Stage B – Developing and refining strategic alternatives and assessing effects;
- Stage C – Preparing the Environmental Report;
- Stage D – Consulting on the Environmental Report and;
- Stage E – Monitoring implementation of the Plans.

This Statement sits at the end of Stage D of the process, and is based on the information collected during the consultation on the Environmental Report (Stage D). The Statement serves to provide information on how the findings of the assessment have been taken into account during the preparation of the Plans. It also sets out the key issues raised during the public consultation process, and identifies how these issues will be addressed within the Plans.

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The Statement also provides information on the mitigation methods and processes that will be utilised during the implementation of the Plans, and suggests measures which may be undertaken to monitor potential impacts.

Due to the strategic nature of the Plans, the mitigation and monitoring measures recommended are process based, and will involve further, more detailed and specific assessment and consultation at a project level.

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4. CONSULTATION

4.1 Introduction

Consultation is specified within the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 (S.R. 280/2004). At the scoping stage, this is through Northern Ireland Environment Agency (NIEA) and the Republic of Ireland consultees (ref section 4.2), with wider public consultation following for a 6 month period (Dec 2014 to June 2015). Finally, the adopted Plans, the Environmental report, HRA and the SEA Statement are required to be available publicly, at the end of the process.

4.2 Scoping Stage Consultation

The Environmental Scoping Study was sent out to statutory consultees on 22 October 2014.

The statutory consultees were:

Northern Ireland:
NIEA, Strategic Environmental Assessment Unit

Republic of Ireland:
Office of Public Works
Department Of Arts, Heritage and the Gaeltacht (Development Applications Unit)
Department Of Communications, Energy and Natural Resources (Corporate Support Unit)
Department Of Agriculture (Climate Change and Bio Energy Division)
Department of Environment, Community and Local Govt. (Planning System and Spatial Policy Section)

The consultee comments indicated that geology and associated groundwater, and the marine environment, should be highlighted as topics for consideration under the SEA, and these were included and developed within the Environmental Report.

4.3 Draft Plan, Environmental Report and HRA Consultation

Public consultation on these documents was conducted between 22 December 2014 and 22 June 2015. The consultation included 10 questions, designed to prompt salient responses. Three of these questions specifically addressed the Environmental Report and HRA.

In total, 28 substantive responses were received, of which 11 raised issues regarding the Environmental Report and/or HRA.

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These responses are summarised below in Table 2:

Table 2: Key Issues raised by Consultees to the Environmental Report and HRA consultation questions

Consultee	Key Issues Raised
Northern Ireland Environment Agency	• Co-ordination with Water Framework Directive • Catchment based management and partnership working • Natural water retention measures • Sustainable Urban Drainage
Ulster Farmers Union	• Potential for multi-directive benefits through partnership working
Natural Living Assets	• Wider impact of flood alleviation measures on environmental issues, especially salmonids • Assessment of impacts on geomorphology and salmonids • Stronger input from fisheries scientific research and data • Total catchment approach
Freshwater Taskforce	• Working with natural processes • Need for a DARD led Land Strategy • Value of upland habitat restoration and land-use
Ulster Angling Federation	• Clarification of designated site criteria and missing sites • Concerns regarding channel maintenance standards • Importance of undesignated sites and features • Stronger input from fisheries data • Disagreement with assessment of culverts
Lough McCrory Group	• Reiteration of Ulster Angling Federation comments
Enagh Sustainable Development Forum	• Reiteration of Ulster Angling Federation and Freshwater Taskforce comments
Antrim and District Angling Association	• Not enough thought to impacts on general flora, fauna and the natural environment • Need to plan for development • Problems of sewage release during flooding
Agri-Food & Bio-Science Institute, SAFSB, Fisheries and Aquatic	• Need to consider more that the basic requirements • Need to emphasise environmental opportunities • Need to maintain and improve river continuity

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Ecosystems Branch	• Importance of non-priority fish species
Sixmilewater Trust	• Same comments as Antrim and District Angling Association
Public Health Agency	• Agreement with the desire to reduce pollution, from a health perspective

Responses to the above consultees have been provided by the Department, and the key issues raised have been incorporated within the production of this SEA Statement.

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5 Key Issues Raised in the Submissions

The following sections provide an overview of the key issues raised following the public consultation. Responses or references have been included to indicate how the issues have been, or will be addressed, within the SEA Statement or the implementation of the Plans.

5.1 Catchment Level Issues

This covers a range of issues including natural water retention measures, SuDS, working with natural processes and upland habitat restoration and landuse.

Overall, the comments from the consultees were in favour of the Department developing these areas of work within the Plans. Consultees acknowledged that the draft Plan had identified the relevance of such measures, but were concerned that there was no stated development path.

Response

The Department acknowledges the potential for natural flood risk management measures at a catchment level. Work is ongoing in many of these areas. As an example, the Department is a member of the inter-departmental Storm Water Management Group which is actively developing SuDs. The newly formed Living with Water (Strategic Infrastructure Drainage) Programme is an inter-departmental group, initially focusing on the Belfast area, and linking a range of issues including environmental and water quality, flood risk management and potential for economic growth together in a holistic work package. The recently completed Orangefield Park Scheme, as part of the larger Connswater Greenway and East Belfast Flood Alleviation Scheme, is an example of how natural flood management measures have been integrated with engineering solutions.

The Department recently hosted an inaugural Northern Ireland Blue-green cities workshop entitled "Planning for Sustainable Flood Risk Management" which brought together regulators and budget holders from government Departments and local authorities, to highlight the potential for multi-benefit working. This workshop was assisted through the River Restoration Centre. The development of catchment level planning for NFRM natural flood risk management is proposed through the work of the Local Flood Forums. The Department has also hosted in the past, a number of workshops looking at sustainable flood management. Sustainable flood defence measures have a role in managing small scale events, but this role reduces in higher level events. The Department sees the way forward for these measures as one of multi-benefit, where works proposed may have other key drivers, and funding is through a consortium. To this end, the Department, through the Catchment Oversight Group, is involved in a catchment geographical information system study, to examine the processes and players in developing catchment studies.

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At this point, legislation is not in place to implement many of these measures, and as such, the Department can give no undertaking regarding their implementation within the Plans. Rather, it will continue to work with other bodies through the range of groups already in place, and build on the outcomes of the sustainable flood risk management workshop.

5.2 The Wider Environment

Consultees were concerned that the Environmental Report placed too much emphasis on protected sites, habitats and species. In particular, fisheries and non priority species were highlighted.

Response

The Department has a robust in house environmental assessment process in place, which covers all capital works and projects. Under the Drainage (Environmental Impact Assessment) Regulations (Northern Ireland) 2006, all works go through an environmental assessment process. This process was reviewed and formalised as an in house guidance document in 2014, to include the need to look at environmental constraints and options at an early stage in the development of any proposals. The Regulations task the Department with considering impacts on human beings, fauna and flora, soil, water, air, climate and the landscape, material assets and the cultural heritage and the interaction between these factors. It also requires an assessment of the characteristics of works, the environmental sensitivity of geographical areas likely to be affected by the works and the potential significant effects of these works. The assessment also includes an assessment of potential cumulative effects, any suitable mitigatory or enhancement measures that can be put in place, and the need for consultation with the relevant environmental bodies. This assessment is carried out for all works, regardless of whether there are protected species, habitats or sites present or not.

The Department works closely with both DCAL Inland Fisheries Group and Loughs Agency, and has a Service Level Agreement with both groups. Both are statutory consultees to the Department's work, both capital and maintenance, and provide guidance and information on schemes as required. The Department carries out a range of partnership works with both groups, through habitat and fish passage improvement, and the development of best practice culvert design.

5.3 Develop Environmental Opportunities

Consultees were concerned that opportunities to improve environmental aspects were not being raised. The AFBI response acknowledged the improvement work that the Department has carried out in the past, but felt that the opportunity had not been highlighted sufficiently in the Environmental Report.

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Response

As part of the EIA process outlined above, and expanded in section 7.2, the Department looks for opportunities to improve the river environment. This is usually in conjunction with bodies such as DCAL, or local authorities, and recent examples include fish passage at Lodge Burn at Coleraine, fisheries habitat creation at Ballygawley, and wetland creation at Orangefield Park, Belfast. The Department will continue to identify, and implement where possible, enhancement measures, particularly where these have benefits under other directives or plans.

5.4 Channel Maintenance Standards

Consultees were concerned that maintenance of watercourses was, in certain circumstances, detrimental to the environmental value of the river, and not carried out to best practice.

Response

The Department carries out its maintenance works through both its own Direct Labour, and through contractors. Standard good working practices have been developed over the years, based on legislative requirements, e.g. bird nesting season and fisheries timings, and on standards employed by other agencies around the United Kingdom and the Republic of Ireland. These standards are regularly reviewed and updated, and have been produced as an in house guidance document. In addition, there is regular training of staff and contractors. The Department employs an Environmental Section to oversee all of its works from an environmental perspective, and also has watercourse auditors who assess a random selection of rivers where maintenance has been carried out, to ensure compliance with the best practice standards. Where any diversion from these standards occurs, the matter is dealt with quickly and efficiently through remedial works and enhancement.

5.5 Partnership Working and Multi-directive Benefits

Consultees were pleased to see the Department's appreciation of partnership working, and encouraged development of this.

Response

The Department acknowledges the potential for multi-benefit working and the need for partnerships, from an overall sustainability perspective. Included within the main drivers for the recent Blue-green cities workshop were the identification of potential partnership organisations, and the promulgation of the potential for synergistic measures which can benefit a number of directives and strategies. The development of this area of work is planned through the Local Flood Forums. The geographical focus on the same River Basin Districts in both the Flood Risk Management Plans and the River Basin Management Plans will assist in developing such measures.

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6 SEA and the Plans

6.1 Inclusion of Environmental Considerations in the Plans

The SEA process runs in tandem with the production of the Plans. The Plans are strategic in nature, focussing on measure types under the measure headings of Prevention, Preparedness and Protection.

Measure types within these headings include generic measures, such as planning policy, and non-structural measures, such as flood resilience measures and emergency plans. The measure types also include a range of more site specific measure types including structural elements such as culvert upgrades and engineered defence structures, and watercourse maintenance.

The SEA identified the potential impacts from the proposed draft Plan measures on the environmental topics listed within the SEA process. These are listed in the Environmental Report (section 4.4 Table 6). By assessing the potential impacts of the various measure types and the typical measure activities which may be taken to implement them, the SEA has identified those activities which may have a significant environmental impact. Through this, the SEA process has fed into the measure types listed within the Plan, and has identified those measure types and activities where there is a need to carry out further assessment of the impacts at the stage where options will be considered for specific flood defence projects.

Similarly, the HRA has identified where there is potential for N2K sites to be impacted upon, when any works under the three measure headings are identified. Through this initial assessment, the need for a more detailed HRA will be built into the option selection process, thus ensuring that any potential impact to the site is identified, assessed and avoided or mitigated at an early stage.

6.2 Overall Summary of the SEA

The SEA is an objectives based process. Within the SEA scoping, 10 SEA objectives were identified, covering the 8 SEA topics scoped into the process. The only SEA topic scoped out was air.

The Plans also had their own objectives, under the required headings of **Economics, Environmental** (including built heritage) and **Human Health** and social.

The SEA firstly tested whether there was any conflict between the objectives of the SEA, and the objectives of the Plans. The details of this assessment are contained within Appendix 1 – Assessment of Plan Objectives against SEA Objectives. The outcome was that there was an overall broad agreement between the two sets of objectives.

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The next stage was to test for any conflict between the objectives of the SEA, and the measure types of the Plans (the methods by which the Plans would achieve their objectives). The details of this assessment are contained within Appendix 2 – Assessment of Plan Measure Types against SEA Objectives. The outcome of this assessment was that whilst there were some potential impacts from measure types (mainly structural measure types under the Protection heading), it was difficult to assess these definitively, as no site specific works had been identified. As such, the potential impacts were based on an assessment of the generic measure type, rather than based on proposed works at a specified location.

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7. Mitigation

7.1 Introduction

To minimise the identified potential generic impacts, mitigation measures were identified. These were grouped according to the measure type – a full list is contained within Appendix 3 - Summary of Plan Effects (by measure type) and Mitigation.

Table 3 below provides a summary of the proposed mitigations:

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Table 3 – Proposed Mitigation by SEA Topic

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
Biodiversity	Protected sites/species/habitats	**Protection**	Floodwalls and embankments	• HRA/assent as required. • EIA process • Liaison with NIEA/DCAL/LA • Agreed maintenance regime (maintenance agreement) • Enhancement opportunities
			Culvert works	• HRA/assent as required. • EIA process • Liaison with NIEA/DCAL/LA • Agreed maintenance regime (maintenance agreement) • Enhancement opportunities • Best practice culvert design (continuity for fish, mammals and sediment)
			Enhanced channel maintenance	• HRA/assent as required. • Liaison with NIEA/DCAL/LA • Agreed maintenance regime (maintenance agreement) • Enhancement opportunities • Best practice working practice standards

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
			SuDS	• HRA/assent as required. • EIA process • Liaison with NIEA/DCAL/LA • Agreed maintenance regime • Enhancement opportunities
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
	Non-protected sites	**Protection**	Floodwalls and embankments	• EIA process • Consultation with environmental bodies • Enhancement opportunities • Timing of works and work methodology • Agreed maintenance regime
			Culvert works	• EIA process • Consultation with environmental bodies (DCAL/LA) • Enhancement opportunities • Best practice culvert design (continuity for fish, mammals and sediment)

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
			Enhanced channel maintenance	• Liaison with DCAL/LA • Agreed maintenance regime • Enhancement opportunities • Morphological assessment (low flow and secondary channels) • Good working practice standards
			SuDS	• EIA process • Consultation with environmental bodies • Enhancement opportunities • Timing of works and work methodology • Agreed maintenance regime
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
	Fish	**Protection**	Floodwalls and embankments	• EIA process • Consultation with DACL/LA • Enhancement opportunities • Timing of works and work methodology
			Culvert works	• EIA process • Consultation with environmental bodies

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
				(DCAL/LA) • Agreed maintenance regime • Enhancement opportunities • Best practice culvert design (continuity for fish, mammals and sediment)
			Enhanced channel maintenance	• Liaison with DCAL/LA • Agreed maintenance regime • Enhancement opportunities • Morphological assessment (low flow and secondary channels) • Good working practice standards • Timing of works
			SuDS	• Liaison with DCAL/LA • EIA process • Consultation with environmental bodies • Enhancement opportunities • Timing of works and work methodology • Agreed maintenance regime
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
		Preparedness	Flood warning	• Not required
Population and Human Health	Noise	**Protection**	Flood walls and embankments	• BS5228, "Noise and Vibration Control on Construction and Open Sites". • Noise control measures built into contract documents and work methods.
			Culvert works	• BS5228, "Noise and Vibration Control on Construction and Open Sites". • Noise control measures built into contract documents and work methods.
			Enhanced channel maintenance	• Noise control measures built into work methods and timings
			SuDS	• BS5228, "Noise and Vibration Control on Construction and Open Sites". • Noise control measures built into contract documents and work methods.
		Prevention	Development outside flood risk areas	• Not required.
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
	Economy (incl. agriculture, recreation and	**Protection**	Flood walls and embankments	• Stakeholder communication • Minimise land take

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
	tourism and commerce)			• Agree access and timings of works • Agree specific mitigation, restoration and enhancement measures
			Culvert works	• Stakeholder communication • Minimise land take • Agree access and timings of works • Agree specific mitigation, restoration and enhancement measures
			Enhanced channel maintenance	• Stakeholder communication • Agree access and timings of works • Agree specific mitigation measures
			SuDS	• Stakeholder communication • Multi-benefit landuse plans • Agree access and timings of works • Agree specific mitigation, restoration and enhancement measures
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
	Residential	**Protection**	Flood walls and embankments	• Stakeholder communication

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
				• Minimise land take • Agree access and timings of works • Agree specific mitigation and restoration measures
			Culvert works	• Stakeholder communication • Minimise land take • Agree access and timings of works • Agree specific mitigation and restoration measures
			Enhanced channel maintenance	• Stakeholder communication • Agree access and timings of works
			SuDS	• Stakeholder communication • Multi-benefit landuse plans • Agree access and timings of works • Agree specific mitigation, restoration and enhancement measures
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
Soil		**Protection**	Flood walls and embankments	• Adoption of good practice for soil storage and working

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
				• Timing of works (weather). • Instate erosion and sediment controls. • Restore disturbed areas.
			Culvert works	• Adoption of good practice for soil storage and working • Timing of works (weather). • Instate erosion and sediment controls. • Restore disturbed areas.
			Enhanced channel maintenance	• Instate erosion and sediment controls.
			SuDS	• Adoption of good practice for soil storage and working • Timing of works (weather). • Instate erosion and sediment controls. • Restore disturbed areas.
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
Water		**Protection**	Flood walls and embankments	• Adhere to all relevant PPGs • Sediment control plans • Pollution control plans • Liaise with NIEA WMU
			Culvert works	• Adhere to all relevant PPGs • Sediment control plans • Pollution control plans

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
				• Liaise with NIEA WMU
			Enhanced channel maintenance	• Adhere to all relevant PPGs • Sediment control plans
			SuDS	• Adhere to all relevant PPGs • Sediment control plans • Pollution control plans • Liaise with NIEA WMU
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
Climatic factors		**Protection**	Flood walls and embankments	• Appropriate maintenance of equipment
			Culvert works	• Appropriate maintenance of equipment
			Enhanced channel maintenance	• Appropriate maintenance of equipment
			SuDS	• Appropriate maintenance of equipment
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
Material Assets	Infrastructure and	**Protection**	Flood walls and embankments	• Liaise with operators regarding information

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
	Utilities			and methods
			Culvert works	• Liaise with operators regarding information and methods
			Enhanced channel maintenance	• Liaise with operators regarding information and methods
			SuDS	• Liaise with operators regarding information and methods
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
	Waste	**Protection**	Flood walls and embankments	• Waste management plans
			Culvert works	• Waste management plans
			Enhanced channel maintenance	• Good standard working practice
			SuDS	• Waste management plans
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
Cultural		**Protection**	Flood walls and embankments	• Liaise with Built Heritage

SEA Topic	Sub Topic	Measure	Measure Type	Mitigation
Heritage				• Archaeological Plan
			Culvert works	• Liaise with Built Heritage • Archaeological Plan
			Enhanced channel maintenance	• Liaise with Built Heritage • Good standard working practice
			SuDS	• Liaise with Built Heritage • Archaeological Plan
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required
Landscape		**Protection**	Flood walls and embankments	• Post works landscaping if required
			Culvert works	• Post works landscaping if required
			Enhanced channel maintenance	• Good standard working practice
			SuDS	• Assimilate SuDS structures into local landscape
		Prevention	Development outside flood risk areas	• Not required
		Preparedness	Community resilience	• Not required
		Preparedness	Flood Emergency response	• Not required
		Preparedness	Flood warning	• Not required

7.2 The EIA Process

In accordance with the Drainage (Environmental Impact Assessment) Regulations (NI) 2006, all works proposed by the Department are subject to environmental assessment. To facilitate this process, the Department has developed a procedure and recording system, to ensure that all the necessary areas of environmental interest are fully addressed.

The EIA process has been designed to record a natural progression from initial consideration of a project, through selection of a preferred option, taking into consideration environmental constraints and opportunities, to the production of a fully assessed scheme which has been agreed by both engineering and environmental personnel. This satisfies the requirements and opportunities under a number of European Directives and National Legislation, including Water Framework Directive, Floods Directive, and Habitats Directive amongst others.

The assessment process includes the consideration of options at an early stage in the project's development. For flood alleviation schemes, this could include measures away from the site of impact, such as at the problem source, or pathway.

The EIA process also commits the Department to consulting with a range of consultees (statutory consultees) which include both government and non-government groups with specific interest and knowledge in environmental matters. In addition, specific consultees may be identified depending on the nature and location of the proposed scheme.

The stages of the process are as follows:

Stage 1: Instigation of the scheme - Carried out at the stage where a pre-feasibility study is to be carried out. At this stage, the environmental constraints such as designated sites, fishery interest, archaeological interest, priority habitat, etc. will be identified.

Stage 2: Consideration of options - This should include measures away from the site of impact. At this stage, potential benefits to other directives and strategies such as WFD, Biodiversity Strategy, Fisheries plans, etc. will be identified. The preferred option is the outcome from this stage.

Stage 3: Characteristics of the preferred option - This focuses on the work size and location, and the work processes and methods.

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Stage 4: Site specific environmental assessment - This is field based assessment, to fine tune the important aspects of the site, in light of the information produced in the earlier stages. This identifies the characteristics of any potential impact of the preferred option to a range of areas including:

- Human beings
- Flora
- Fauna
- Soil
- Water
- Air
- Climate
- Landscape
- Biodiversity (genetics, species and ecosystems)
- Interaction between any of the foregoing
- Material assets
- Cultural Heritage.

The assessment requires assessment of the extent of the impact (including permanency), the probability of the impact, its duration, and includes both direct and indirect impacts. This stage also looks at potential mitigation measures, to negate or reduce the impacts.

Consultation is a key aspect of the EIA process. Statutory consultees include government and non government environmental groups, and additional specific consultees are also identified. The process also considers the need for pre and post monitoring, such as the Rapid Habitat Assessment Tool developed by NIEA. At this stage, enhancement opportunities are also identified – where possible, these link with other directives and plans, such as Water Framework Directive.

The EIA process is a robust and well tested assessment methodology, which has been developed over the years, to incorporate new legislation and trends. Examples of its use include the fish passage work as part of the Lodge Burn Flood Alleviation Scheme at Coleraine, the sediment control measures undertaken during the flood alleviation works at Parkgate, and the fisheries habitat work at Ballygawley.

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8. Monitoring

8.1 Introduction

Under the SEA Directive and The Environmental Assessment of Plans and Programmes (Northern Ireland) Regulations 2004, the Department is required to monitor the significant effects of the implementation of the Plans.

Monitoring is required at a number of levels:

8.2 Monitoring at Plan Level

The Plans are largely strategic in nature, and as such, it is not possible to produce an indicative monitoring strategy based on specific indicators and targets. A monitoring framework has been produced, which focuses on monitoring the effectiveness of the FRMPs in managing flood risk in a way that minimises adverse effects on the environment, rather than monitoring individual projects. Details of this are contained within the Environmental Report.

8.3 Monitoring Measures for SEA Topics

The SEA identifies a range of topics which could, potentially, be affected by measure types and activities within the Plans. At this stage, site specific activities have not been identified within the Plans, and so the monitoring measures are generic in character. These are contained within Table 4 below. An update will be provided at each Local Flood Forum, and a report will be submitted to Europe as required. The EIA process, and the consultation included within it, will identify monitoring requirements at a project level.

Table 4 – Proposed Generic Monitoring Measures for SEA Topics

SEA Topic	Proposed Monitoring Measures
Biodiversity, Flora and Fauna	*NIEA carry out monitoring of designated sites and this information will be used.* *Fisheries groups carry out information gathering – this information will be used.* *Targeted pre and post fishery assessment can be carried out in conjunction with fisheries bodies.* *Liaison with specific groups, e.g. RSPB, local biodiversity officers, NI bat group, will be carried out as part of the EIA process, and will feed into monitoring plans.*
Cultural Heritage	*NIEA will have been consulted on a statutory basis in such circumstances. Any monitoring requirements will be identified through the EIA process and archaeological plans.* *The project level EIA process and consultation will identify any new*

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SEA Topic	Proposed Monitoring Measures
	cultural heritage sites. *NIEA carry out regular monitoring of the status of scheduled sites and monuments.*
Water	*NIEA assess the status of waterbodies for WFD, including water quality.*
Soils	*NIEA carry out soil monitoring of designated sites and this information will be used*
Population and Human Health	*Monitoring of noise during project works can be done as part of specific project management*. *The Department carried out ongoing flood risk monitoring as part of the Plans, through modeling, and through assessment of actual incidents. Prioritisation of flood risk schemes is ongoing*
Material Assets	*The Department will assess the benefits of any flood alleviation scheme. Post event evaluations will be carried out as required.* *The Department will assess the cost benefit of a range of measure types prior to the selection of preferred option.*
Climate Factors	*The Climate Change Adaptation Programme provides the proposals and policies by which government departments (including DARD) will meet climate change objectives. This will feed into any monitoring requirements.*
Landscape	*The EIA process includes landscape aspects such as AONB, landscape character areas etc. Where such classifications are in place, liaison with the regulatory bodies will dictate monitoring requirements.*

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8.4 Monitoring at Project Level

Monitoring at an individual project level will also be required as part of the overall Plans. The type of monitoring required will depend upon the key environmental criteria, and the potential impacts identified during the EIA process, and should be bespoke to the project. Such monitoring could include:

- Electro-fishing – pre and post assessment for impact on fish numbers and population structures. This can be done in conjunction with DCAL IFG and Loughs Agency.
- River Hydromorhphology Assessment Technique (RHAT) – an assessment tool for classifying watercourses based on naturalness, impacts, morphology, etc. This can be carried out pre works to form a baseline, and then in a series of assessments post works, to measure recovery, and where applicable, effectiveness of mitigation and enhancement.
- Invasive species – pre and post monitoring to design work methods, and to monitor control works.

Monitoring is already carried out by a number of bodies, through information gathering. For example, AFBI, Loughs Agency and DCAL Inland Fisheries Group gather information on fish numbers and structure. NIEA gather information on a number of criteria for WFD classification (including diatoms, invertebrates, vegetation), and Rivers Trusts monitor for aspects including fly life. Consultation and liaison with these groups will allow the information to be used to monitor potential impacts at a project level, and to design any further mitigatory measures which may be required.

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9. Amendments to the Environmental Report as a Result of Consultation

Executive Summary –

The draft FRMP was produced as a single document (the Plan). Consequently, the SEA scoping document and Environmental Report were produced. The final FRMP has been produced as three documents (the Plans), one for each River Basin District (North Eastern, Neagh Bann and North Western).

Prevention Measures:

- Development Outside Flood Risk Areas – DARD Rivers Agency Planning Advisory Unit assess flood risk, and may require applicants to provide flood risk assessments.

Protection Measures:

- Flood Alleviation Schemes – reference made to the in house EIA process, set out in section 7.2, and to the opportunities for enhancement.
- Enhanced Maintenance of Existing Drainage and Flood Defence Network – information provided on best practice standards developed in consultation with UK and RoI bodies.
- Catchment Based Management – includes mention of Blue-green Cities workshop on sustainable flood risk management, and catchment study

2.3 **The Flood Risk Management Plan** – amended to reflect the production of 3 final Plans.

2.6 **Alternatives –** expanded to include information on the Blue-green cities workshop on sustainable flood risk management.

3.3.1 **SEA stages –** includes information on the final Environmental Report.

3.3.3 **Scoping of SEA Topics** – marine section updated to reflect Marine Consultation Zones.

4.2 **Baseline Data Sources: Table 5** – now includes DCAL IWG, AFBI, NIEA and Loughs Agency.

4.3 **Current Situation**

Biodiversity, flora and fauna – now includes reference to fisheries strategies

Water – now includes reference to Marine

Climatic Factors – includes reference to potential increase in flood risk due to climatic factors.

4.4 **Environmental problems and Key Issues: Table 6** – biodiversity, fauna and flora now refers to unsustainable fisheries practices (i.e. those which would affect natural sediment transport processes). Fisheries practices overall are of benefit to the river system, through the creation of

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habitat, fish passage and bankside shading. Measures carried out in the past, such as cross-river weirs provided deeper water for fish and angling, but disrupted the natural sediment transport system down river, and as such, are now seen as unsustainable. The preference now is to work with the natural river processes, with the emphasis on natural habitats rather than the creation of artificial angling habitat.

Material assets includes a recognition of the positive effect that flood risk management has on material assets through decreasing food risk.

Landscape now includes natural flood risk management measures rather than just SuDS. This is a broader area of work.

5. **Policy Context –** the section on biodiversity, flora and fauna now includes a paragraph giving a summary of key fisheries legislation and strategies. These are expanded within the salient appendices. They include NASCO, and the Eel Directive.

Water includes mention of the umbrella nature of the Water Framework Directive, which subsumes a number of other directives. It also includes Marine legislation and policies.

5.2 **Relationship with Other Policies and Environmental Objectives** – Table cited now labelled Table 7. .

Table 7: Relationship with Other Policies and Environmental Objectives –

Biodiversity, Habitats and Species:

Under "UN Convention on Biological Diversity (1992)", the third column now includes a statement saying that the Plans should seek areas of synergy with national and local Biodiversity Action Plans.

Under "The Wildlife and Natural Environment Act (NI) 2011", the third column now states that the Plans will identify methods to assess and minimise potential impact. This will be done through the EIA process.

Under "Offshore Marine Conservation (Natural Habitats etc) Regulations (S.I. 2007/184), the third column now includes the Marine Strategy Framework Directive.

Under "The Nature Conservation and Amenity Lands Order 1985 (NALCO) as amended in the Environment Order (NI) 2002, the third column now includes minimising impacts on designated sites, and seeking enhancement opportunities.

Under "Recommendations to Government for a Biodiversity Strategy (NIBG, 2000), the third column now includes reference to seeking opportunities for enhancement.

Soil:

Under "EU Thematic Strategy for Soil Protection, including proposals for a Soil Framework Directive (2006), the third column has been reworded to read "The Plans should take into account the proposed framework for soil protection and improvement".

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Water:

Under Water Framework Directive (2000/60/EC), the third column now includes a statement that the Plans should look for synergy with the WFD.

"Living with Water Programme" now included within the NI section of Water.

Marine legislation and policies are now included within the relevant sections under Water.

7. SEA of the Plans

7.2 Sea Objectives:

Table 7 :

SEA Objective 2 – now includes biodiversity in the objective.

SEA Objective 6 – now includes "Minimise impact on, and where possible improve fisheries habitat and passage?" within the proposed questions.

SEA Objective 7 – proposed question reworded as "assist in addressing..."

SEA Objective 8 – proposed questions now include "reduce the risk of flooding of material assets?"

7.5 Cumulative Assessment

Flood Protection – Do Nothing Option now assessed as likely to be negative as there will be an underlying increase in flood risk due to climatic conditions.

Flood Preparedness – now assessed as having a positive effect. "The flood warning measure was assessed as having an overall positive effect, particularly for economic and health and social aspects. Awareness of flood warning services is important to allow people to prepare for a flood event and understand what to do in a flood event".

8. Mitigation of Adverse Effects

8.2.1 Suggested Plan Level Action – Action 2: now includes "The development of the new Department for Infrastructure, which will include Water NI, Transport NI and Rivers Agency is a key method by which this coordination will be undertaken".

8.2.3 Partnership Working and Multi-benefits – Catchment and Restoration Group has now been relabelled the Catchment Oversight Group. This is an inter-departmental group which focuses on synergies between directives and work areas, and seeks to identify measures which have multi benefits. This section also highlights steps already taken under the heading of partnership working. The value of partnership work has been promulgated through the recent Blue-green Cities workshop on Planning for Sustainable Flood Risk Management, and will be developed throughout the lifespan of the Plans. Through the Catchment Oversight Group, a pilot catchment study based on the Moyola has been developed with its first phase being led by the Department. This is an exercise which uses GIS to map information from a range of stakeholders, with the aim of identifying sites and projects where works may have benefits under a number of headings.

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10. Conclusions and Next Steps

The SEA and HRA processes carried out during the development of the Flood Risk Management Plans have ensured that the potential significant environmental impacts associated with the implementation of the Plans, have been identified, assessed and mitigation measures proposed.

The Environmental Report highlighted key areas of concern, and the comments received from statutory and public consultation have provided additional information, and raised issues that have been addressed through the amendment to the report, and within the SEA statement.

The final Plans are being produced as individual strategic plans, one for each River Basin District.

The Plans have a 6 year lifespan, during which time many of the measure types and activities will be implemented. As the Plans move into implementation stage, projects will be identified and developed, and the EIA process will take over from the SEA process – this will allow a focussed assessment, including option selection and consultation, and the development of salient monitoring.

The Plans' lifespan will also allow the development of strategic aspects for which, currently, there are not specific drivers or legislation. Monitoring will include an overview of how these areas are progressing. A report will be submitted to each Local Flood Forum meeting, which will form the basis of generic monitoring. Additionally, there will be a requirement to report to Europe during the lifespan of the Plans.

Information collected during the first cycle of Flood Risk Management Plans will assist and feed into the development of the second cycle of Plans and SEA.

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