Northern Ireland Environment Agency
www.ni-environment.gov.uk

Department of the Environment
www.doeni.gov.uk

Strategic Environmental Assessment for the Water Framework Directive River Basin Management Plans and Programmes of Measures - North Eastern RBD

SEA Statement

North Western | Neagh Bann | North Eastern | Western | Eastern | Shannon | South Eastern | South Western

north eastern river basin district

North South Shared Aquatic Resource (NS SHARE)

INTERREG IIIA

Project part financed by the European Union

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

This Strategic Environmental Assessment (SEA) Statement has been prepared as part of the SEA of the River Basin Management Plan (RBMP), and its associated Programme of Measures (POM), for the North Eastern River Basin District (RBD) in accordance with national and EU legislation. This document provides information on the decision-making process and documents how environmental considerations, the views of consultees and the recommendations of the Environmental Report and the Habitats Directive Assessment have been taken into account by, and influenced, the Plan. An Addendum to the Environmental Report is also provided at the end of this document showing how and where it has been updated since its publication on 22nd December 2008.

The Plan and these associated documents have been prepared by the competent authority for the North Eastern RBD, which is the Northern Ireland Environment Agency (NIEA).

This SEA Statement has been prepared in accordance with Part IV, Section 15(4) of the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 (S.R. 280/2004). The adopted Plan, the SEA Environmental Report, the Habitats Directive Assessment Report and the SEA Statement are available for download on the North Eastern RBD website (www.ni-environment.gov.uk/wfd).

The structure of the SEA Statement is as follows:

1. Introduction
2. Summary of Key Facts
3. Summary of the SEA Process
4. Consultation
5. Key Issues Raised in the Submissions
6. How Environmental Considerations have been Taken into Account in the Adopted Plan
7. Preferred Scenario and Reasons for Choosing the Plan
8. Monitoring and Mitigation Measures
9. Conclusion and Next Steps
10. Addendum to the Environmental Report

2 SUMMARY OF KEY FACTS

Title of Plan:	North Eastern River Basin District (RBD) River Basin Management Plan.
Purpose of Plan:	To fulfil the Water Framework Directive (WFD) 2000/60/EC and set out how the aims and objectives of improving and protecting water quality and ecology in the waters of the North Eastern RBD can be achieved by means of a Programme of Measures (POM).
Competent Authorities:	Within Northern Ireland the competent authority for the North Eastern RBD is the Department of the Environment, Northern Ireland as set out in Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003 (S.R. 2003 No. 544). They are also the competent authority for reporting to the European Commission.
What prompted the Plan:	The EU Water Framework Directive requires the preparation of a management plan for all of the waters (including rivers, canals, lakes, reservoirs, groundwaters, protected areas (including wetlands and other water dependent ecosystems), estuaries and coastal waters) in an area called a River Basin District. This is the management plan prepared in response to that requirement for the NERBD.
Subject:	Describes the actions that will be used to ensure the necessary protection of the waters of the NERBD.
Period covered:	The first RBMP and POM will cover the period from 2009 up to 2015. In certain circumstances the RBMP considers the timeline horizons of 2021 and 2027, being the end of the second and third 6-year Plan cycles, respectively. These longer-term horizons are necessary where good status or good potential or indeed less stringent objectives (LSO) cannot be achieved by 2015 or where measures to achieve these are deemed technically infeasible or disproportionate in cost.
Frequency of updates:	An interim review will be carried out after three years. Updates will be carried out in 2015 and 2021 prior to the start of the second and third 6-year Plan cycles.
Area of Plan:	The RBMP and POM applies to the North Eastern RBD, which includes the most densely populated region of Northern Ireland, the Belfast Metropolitan Area and surrounding commuter areas including Lisburn, Newtownabbey, Bangor and Newtownards. Larne, Downpatrick and Newcastle. The NERBD has a land area of just over 3000km^2, with a further 1000km^2 of marine waters.
Summary of nature/content of Plan:	The NE RBMP is comprised of; a summary document which provides an overview of the assessment and proposals for the North Eastern River Basin District; and a website www.ni-environment.gov.uk/wfd which has an interactive web map

	that provides access to information on monitoring, classification, objectives and measures for each river, lake, transitional and coastal water body and groundwater body. The website also provides details of the technical work, methodologies and supporting information used in developing the River Basin Management Plan.
Date adopted:	**December 22, 2009**
Main contacts:	Jo Campbell NIEA Water Management Unit 17 Antrim Road Lisburn BT28 3AL email: riverbasinplanning@doeni.gov.uk

3 SUMMARY OF THE SEA PROCESS

The North Eastern RBMP and associated POM has been subject to a process of SEA, as required under the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 (S.R. 280/2004). This has included the key steps described in the following sections.

3.1 SCOPING AND STATUTORY CONSULTATION

Scoping was carried out to establish the level of detail appropriate for the Environmental Report. The scoping exercise included consultation with the statutory consultee for SEA in Northern Ireland as well as a number of non-statutory consultees. The statutory consultee for SEA in Northern Ireland is:

- **Northern Ireland:** Northern Ireland Environment Agency (NIEA) (formerly the Environment and Heritage Service).

Scoping was carried out specifically for the North Eastern RBD as well as individually for each of the other seven River Basin Districts on the island. Comments received for the North Eastern RBD together with comments applicable from any of the other seven RBDs were considered for the North Eastern RBD. All of the environmental topics listed in the SEA Directive were scoped in for the assessment of the draft Plan.

3.2 ENVIRONMENTAL ASSESSMENT AND ENVIRONMENTAL REPORT

The preparation of an Environmental Report on the likely significant effects on the environment of the North Eastern RBMP and POM included consideration of:

- Baseline data relating to the current state of the environment;
- Links between the RBMP and POM and other relevant strategies, policies, plans, programmes and environmental protection objectives;
- Key environmental problems affecting the North Eastern RBD;
- The likely significant effects of the North Eastern RBMP and POM on the environment (both positive and negative);
- Measures envisaged for the prevention, reduction and mitigation of any significant adverse effects;
- An outline of the reasons for selecting the alternatives chosen; and

- Monitoring measures to ensure that any unforeseen environmental effects will be identified, allowing for appropriate remedial action to be taken.

3.3 HABITATS DIRECTIVE ARTICLE 6 ASSESSMENT

In addition to this SEA, there was a requirement under the EU Habitats Directive (92/43/EEC) to assess whether the North Eastern RBMP and POM has the potential to impact negatively on a Natura 2000 site, which includes Special Protection Areas (SPAs) for birds and Special Areas of Conservation (SACs) for habitats and species. Article 6 is one of the most important articles of the Habitats Directive in determining the relationship between conservation and site use. Article 6(3) requires that,

> "*Any plan or project not directly connected with or necessary to the conservation of a 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*."

An assessment of the North Eastern RBMP and POM was carried out under the EU Habitats Directive in conjunction with the SEA and Plan making processes, with the findings of the HDA used to guide the development of the alternatives considered as part of the SEA. Consultation on the methodology of approach took place with the NIEA throughout the HDA process.

3.4 SEA STATEMENT

The main purpose of the SEA Statement is to provide information on the decision-making process for the RBMP and POM in order to illustrate how decisions were taken, making the process more transparent. In doing so, the SEA Statement documents how the recommendations of both the Environmental Report and the HDA Report, as well as the views of the statutory consultees and other submissions received during consultation, have influenced the preparation of the final North Eastern RBMP and POM. The SEA Statement also provides information on the arrangements put in place for monitoring and mitigation. The SEA Statement is available to the public, along with the Environmental Report, the HDA Report and the adopted Plan and POM.

The SEA Statement includes the following information:

- Summary of how environmental considerations have been integrated into the Plan;
- Summary of how submissions received during consultation have been taken into account in the Plan;

- Reasons for choosing the recommended option, in light of other reasonable alternatives considered; and
- Measures that are to be undertaken to monitor and mitigate the significant environmental effects of implementing the Plan.

3.5 ADOPTION OF THE PLAN

The River Basin Management Plan for the North Eastern River Basin District (as well as the Plans for the North Western and Neagh Bann River Basin Districts) will be published on or before the 22nd December 2009. The plans will be reported to the EU Commission, as required under the Water Framework Directive (WFD), by March 2010.

Thereafter the plans will be implemented through 26 Local Management Area action plans on a three-year rolling programme over the period 2010 – 2015. Progress on the implementation of the plans will be reported to the WFD Stakeholder Forum and Catchment Stakeholder Groups. The Northern Ireland WFD Stakeholder Forum, is linked to a network of nine Catchment Stakeholder Groups. The Groups include representatives from agriculture, businesses, planning authorities, environmental organisations and other water users. The North Eastern River Basin District includes the Bush and Glens, Belfast Lough and Lagan, Strangford and Lecale, and part of the Carlingford and Mourne Catchment Stakeholder Groups.

As required under the WFD, an interim report describing progress in the implementation of the planned programme of measures set out in the plans will be submitted to the EU Commission by December 2012.

4 CONSULTATION

4.1 INTRODUCTION

In the legislation, the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 (S.R. 280/2004), consultation is specifically required with the nominated environmental authorities at the scoping stage, and then with the wider public when the Environmental Report and the draft Plan are put on public display. Finally, the SEA Statement and the adopted Plan are required to go on public display at the end of the Plan-making process. This section describes the statutory and non-statutory consultation that has taken place over the course of the SEA process.

4.2 FIRST PHASE – INITIAL CONSULTATION

To begin the process of scoping the SEA for the North Eastern RBMP and POM, an initial consultation (including a draft Scoping Report) was held with the Statutory Authority, as designated by the relevant SEA legislation and listed in **Table 4.1**. Following the statutory consultation, it was considered best practice to include a number of relevant non-statutory consultees in the scoping process; these are also listed in **Table 4.1**. In addition, the Draft Scoping Report was published on the North Eastern RBD website to encourage further participation by stakeholders and the public in the consultation process.

Table 4.1 Consultees in the SEA Scoping Process

Consultee	Statutory / Non-Statutory
Northern Ireland Environment Agency	Statutory
River Basin District Project Coordinator	Non-Statutory
River Basin Advisory Council	Non-Statutory
River Basin Management Group	Non-Statutory
River Basin Steering Group	Non-Statutory

The comments received in relation to the Draft Scoping Report generally consisted of:

- Information on potential sources of baseline information;
- Comments on the assessment methodology;
- Additional SEA Objectives to be considered;
- Additional pressures to be considered; and

- Additional types of impacts to be considered.

All of the comments received are included with the Final Scoping Report, which is available at www.ni-environment.gov.uk/wfd.

4.3 SECOND PHASE – CONSULTATION ON THE DRAFT PLAN, ENVIRONMENTAL REPORT AND HDA REPORT

Consultation on the draft Plan, SEA Environmental Report and the Habitats Directive Assessment (HDA) Report took place from 22 December 2008 to 22 June 2009. This was in accordance with consultation required under Article 14(2) of the Water Framework Directive and Article 12 of S.R. 280 of 2004. Notices were published in the Belfast Telegraph, Newsletter and Irish News on 23rd December 2008, with a further ad published on 30th December 2008 inviting written submissions in relation to the draft RBMP and POM, Environmental Report and HDA Report. In addition, an SEA Consultation Event was held on May 26th 2009 in Belfast. A total of 114 invitations were sent to a cross section of government and non-governmental organisations and representatives from the both the Plan team and the SEA/HDA team were in attendance to provide information on the various processes and their outcome and to answer questions.

Table 4.2 Public Information Day Locations and Dates

Location	Date
Crawfordsburn Country Park, Crawfordsburn, County Down	25 Mar 09
Coastal Zone, Portrush, County Antrim	01 Apr 09
SEA Consultation Event, Ramada Hotel, Shaws Bridge Belfast.	26 May 09

Section 5 contains an overview of the key issues raised in the 88 written submissions made in response to the draft RBMPs and POMs for all of the (I)RBDs in NI as well as their SEAs and HDAs, as many of these related to all three (I)RBDs, as well as comments made at the Information Days and Catchment Stakeholder group meetings. The content of all written submissions and verbal comments were considered during the finalisation of the North Eastern RBMP and POM. Written submissions were made by the individuals/organisations listed on the following page. Please note some organisations submitted more than one set of comments:

Royal Society for the Protection of Birds NI	Down District Council External Affairs Committee
Sophia Millington-Ward	NI Water
Donald Walker	Crumlin District Angling Association
DCAL, Iveagh Angling Club	Mourne Heritage Trust Conservation
Association of Electricity Producers	Newcastle Sustainable Community Planning Forum
Dr Bob Common	Armagh City Council
Keady District Angling Club	Freshwater Task Force

DRD, Road Service	Natural living Assets
John Cunningham	Larne Borough Council
Roy Carton	Lagan Canal Restoration Trust
Randalstown Angling Club	Milton Matthews
Ballysaggart Environmental Group	British Hydropower Association
Londonderry Port and Harbour Commissioners	Lisburn City Council
Belfast Harbour Commissioners	Waterways Ireland
Castlereagh Borough Council	Ulster Angling Federation
Belfast Hills Partnership	Dawson McAlister
Fermanagh District Council	Mills and Millers of Ireland
Ballynure Angling Club	NI Water
Loughs Agency	Clady and District Angling club
James Gorman	Derry City Council
Quarry Products Association NI	Tim Gleeson
World Wildlife Fund NI	DARD, Rivers Agency
National Trust	Friends of Larne Lough
Aquaculture Initiative	Coleraine Anglers Association
Council for Nature Conservation and Countryside	Cllr Cadogan Enright, Down District Council
DRD Water Policy Division	Farming and Wildlife Advisory Group NI
Shay Murtagh Ltd.	Bangor Angling Club
Ulster Farmers Union	Industrial Heritage Association of Ireland
Irish Business Employers Confederation	Warrenpoint Harbour Authority
Northern Ireland Tourist Board	Land and Resource Management Group NIEA
Committee for Regional Development	The Heritage Council
Craigavon Borough Council	Loughs Agency
The Consumer Council	Dept of Agriculture, Fisheries and Food, Ireland
Lough Neagh and Lower Bann Advisory Committee	Eastern Regional Fisheries Board
Alice Curran	Northern Ireland Environment Agency, SEA Team
NI Court Service	Judith Hoad
Northern Ireland Judicial Appointments Commission	Birdwatch Ireland
Dept. of Communications, Energy and Natural Resources, Ireland	Dept of the Environment, Heritage and Local Government, Ireland
Environmental Protection Agency, Ireland	

NIEA have recorded, reviewed and collated the responses into a series of five consultation response documents and one summary response document. The summary of responses document has also been produced to demonstrate how the plans have been amended, where appropriate, to address the comments received. The full consultation documents are available at www.ni-environment.gov.uk/wfd.

5 KEY ISSUES RAISED IN THE SUBMISSIONS

The following sections highlight the key issues raised in the written submissions as well as comments received during consultation. Recommendations have been provided to address the key issues raised, where applicable, along with a response which provides additional information in order to clarify and address the issues raised.

5.1 IMPLEMENTATION ISSUES

Key Points Raised: Lack of coordination in the efforts of official departments with shared involvements in environmental changes. Need for greater cooperation with relevant organisations in the Republic of Ireland in order to ensure coordinated management of International RBDs. Use of other organisations to be recognised as key vested interests in improving the quality of water and river habitats. Clear communication channels required and dedicated steering/project group to be established to co-ordinate the implementation of the plan.

Recommendation: *It is recommended that a RBD agency or coordinating group be established going forward as suggested. In the event that this is not established it is strongly recommended that at the very least a North – South implementation group be established to oversee implementation of the Plan in a coordinated fashion in both Northern Ireland and Ireland. This would aid in providing cohesion and consistency in implementation across the RBDs as well as provide a forum for representatives from the different implementing bodies to bring their queries and concerns to be heard.*

Response: This issue is being addressed via the following:

(i) In NI there is currently good cooperation on a North South basis on technical issues including the monitoring of shared water bodies. This is coordinated through the North South Technical Advisory Group. The objectives for the shared water bodies within the North Western and Neagh Bann International Basin Districts (IRBDs) have been agreed on a North South basis for the RBMPs to be published in December 2009. The NS Ministerial Council continue to agree approaches to environmental protection with regard to pollution, water quality management and waste management in a cross-border context and

(ii) It is proposed that a North South Implementation Group comprising NIEA, Donegal County Council and Monaghan County will be established to support the implementation of measures in the shared water bodies. The Group will initially meet on a quarterly basis, with the start up meeting planned for Spring 2010.

5.2 ROLE OF PROGRAMME OF MEASURES (POMS)

Key Points Raised: Requests received for further details on the POMs for individual water bodies and groundwater including how the proposed measures will contribute to an overall improvement in their condition. People felt that there was insufficient information provided on how measures have been appraised and how decisions have been made. Stated that POMs should be measureable and have timetables, milestones, progress reports and completion dates associated with their implementation, in respect of each specific water body. Noted that external groups are also well placed to be involved in habitat restoration and work together with interest parties to achieve shared goals.

Response: At the time the Environmental Report was completed there was limited information available as to the implementation of the proposed measures at water body or local management area level. Since the publication of the draft Plan and the Environmental Report this information has been developed and information leaflets have been produced for 26 Local Management Areas, across the Neagh Bann, North Western and North Eastern Districts. They include details of specific local measures identified to improve the water environment in these areas. These local measures can also be viewed on the interactive web map at www.ni-environment.gov.uk/wfd.

5.3 COST EFFECTIVENESS

Key Points Raised: Submissions identified that cost effectiveness analysis and regulatory impact analysis would be required as no financial or budgetary information was made available in the draft plans and no budget had been allocated for the objectives and measures contained within. It was considered important to identify and prioritise those measures that could achieve objectives most cost efficiently at RBD level.

Response: It is noted in the final Plan that it represents the integration of many existing measures such as the Nitrates Action Programme, Abstraction & Impoundment Licensing and Northern Ireland Water's Capital Investment Programme. Costs and benefits of the measures were assessed prior to their introduction, and funding has either already been assigned to them through the current Programme for Government, or will be bid for through the normal budget process for 2011-2014. A strategic Regulatory Impact Assessment identifying the cost and benefits and implications of implementing the measures required has been prepared for the River Basin Management Plan, following the draft Plan consultation. Further information on the strategic Regulatory Impact Assessment is provided in Section 7.12 of the Plan - Costs and Benefits of the Programme of Measures.

5.4 LEVEL OF AMBITION

Key Points Raised: A varied response was received over the level of ambition within the draft Plan with some respondents agreeing with the aspirations and level of ambition whilst others viewed them as not good enough and needing improvement. Submissions indicated that the Programme of Measures did not support the aspirations in the draft Plan and doubts were expressed about the time and resources available to deal with issues at the catchment level. It was also recognised that current financial difficulties will impact on what can be achieved.

Response: New monitoring programmes and classification systems have been developed and applied to assess the impacts on the whole water environment, including rivers, lakes, transitional (estuarine) and coastal waters and groundwaters. The results for the North Eastern River Basin District indicate that 17% of the surface waters (rivers, lakes, transitional and coastal waters) are currently classified as good ecological status/good ecological potential or better, while 88% of groundwaters are classified as good. The assessment undertaken for the Plan indicates that implementation of the programme of measures would result in 49% of the surface waters achieving at least good ecological status or good ecological potential by 2015. This would be an overall improvement of 32% for surface waters. By 2027, 100% of groundwaters are predicted to achieve good status.

In many cases, water bodies are failing ecological standards (e.g. fish, invertebrates), but the cause of this is not revealed by current WFD monitoring. In these cases, improvements in status will start with further investigative monitoring to fill the data gaps before the most appropriate measures to be applied can be determined and there will be a further time lag once the measures are put in place before any improvements would become evident. As each cycle for the RBMPs is only six years in duration it is unlikely that “good status” can be achieved where this investigative monitoring is required.

NIEA has subdivided the three River Basin Districts into 26 Local Management Areas (LMAs), which are based on sub basin catchments. Details of these areas were included as part of the supporting documentation for the consultation on the draft plans. The LMAs are being used as the level at which measures will be set and it is planned to develop action plans to implement the RBMPs in these areas. The action plans will be implemented on a three-year rolling programme to allow resources to be targeted. The RBMPs will include more information on the measures required to meet the objectives in each of the 26 LMAs. As part of the RBMP Implementation Programme the actions plans for each LMA will be developed in liaison with stakeholder groups active in those areas.

5.5 AGRICULTURAL MEASURES

Key Points Raised: Submissions noted that the need for promotion of agri-environment schemes should be recognised and that there are limited staff resources and budget within DARD for this. It was also noted that there is a need to ensure adequate funding is now provided to allow other farmers to enter the scheme to facilitate protection of waterways. It was observed that the existing mechanisms of agri-environment schemes can all help water quality and biodiversity of waterways. It was also observed that introduction of the Nitrates Action Programme and Phosphorus Regulations have already seen improvements in nitrogen and phosphorus efficiencies. It was acknowledged that changes in farming practice take time to deliver environmental benefits.

Response: Effective pollution control is central to the agri-environment schemes and a number of water specific management options are contained in the scheme. NIEA plans to focus its resources on priority catchments, typically areas where for example impacts from a range of sources including agriculture where there are high levels of diffuse pollution. As part of the RBMP Implementation Programme actions plans will be developed for each LMA.

5.6 LEVEL OF DETAIL AVAILABLE

Key Points Raised: Requests were received for more information to be made available in the final River Basin Management Plans, in particular information on local management areas and local water bodies. Overall there was a feeling that the plans covered NI as a whole and did not provide information to the public on a local scale.

Currently for the North Eastern RBMP and POM much of the detail on generic measures at the water body level is contained in a web based GIS tool which is freely available to the general public. Alternatives to on-line access for those that do not own a computer is difficult as there is little alternative to web access which could supply the quantity of data now stored in the GIS tools and background information available at www.ni-environment.gov.uk/wfd.

Recommendation: *Through the use of existing resources in local authority offices and libraries it should be possible to provide public access computers which either have the* www.ni-environment.gov.uk/wfd *website as a home page or as a clear web-link for ease of use. This would go some way toward addressing this access issue.*

Response: The format and layout of the RBMP and website were revised to improve access following the consultation period. The interactive web viewer can be accessed at certain NIEA properties (including Water Management Unit, Lisburn) or by using internet access at local libraries to visit www.ni-environment.gov.uk/wfd.

The breadth of access will depend on the on-going education and awareness that supports the implementation of the Plan and POMs. Many of the basic measures and supplementary measures considered in the draft plan already recognise the importance of this element and it was further highlighted in the SEA through the recommendation of mitigation measures relating to advice, education and awareness for eleven of the measures covering wastewater, unsewered properties, physical modifications, agriculture and abstractions as well as through an overall recommendation that a working group be established to develop tools to promote water awareness and these tools to be included in future water awareness campaigns.

The need for education is recognised in the final Plan and a number of the measures are targeted at improving education and awareness and advice such as promotion of efficient use of water, targeted education and advice for key sectors and promotion and adoption of good practice.

5.7 OTHER PLANS, POLICIES AND PROGRAMMES

Key Points Raised: Linkages between the draft River Basin Management Plans and other plans and programmes were not sufficiently clear. Submissions highlighted greater integration is required with the: Floods Directive; Groundwater Directive; Sustainable Development Strategy; Marine Strategy; Local Biodiversity Action Plans; Climate Change, Adaption/Mitigation strategies.

Recommendation*: It is recommended that guidance be developed for local government officials which clearly sets out how the various EU Directives are linked and how complementary or conflicting objectives should be addressed in land use planning.*

Response: The supporting document 'Register of Plans and Programmes' has been revised to provide a clearer linkage between the RBMPs and other plans. In addition the Water Framework Directive Implementation Working Group (IWG) is made up of representatives from the NI Departments/Agencies that are responsible for implementation of the plans, including Regional Development, Culture, Arts & Leisure, Agriculture, and Rural Development, Rivers Agency, Planning Service, Loughs Agency and Forest Service. The IWG provides a forum to discuss and resolve conflicts between the implementing agencies.

5.8 OTHER ISSUES

Key Points Raised: A variety of comments were received covering issues which did not fall clearly into other topics listed. These included: economic value of angling, more research required to improve understanding, update council members directly, request that heritage value is stated more clearly and freedom of information.

Response: NIEA have recorded, reviewed and collated responses to the submissions received into a series of five consultation response documents and one summary response document. The summary of responses document has also been produced to demonstrate how the plans have been amended, where appropriate, to address the comments received. The full consultation documents are available at www.ni-environment.gov.uk/wfd. Specific responses to address each of these 'Other Issues' are referred to in the 'Other Points' section of the consultation response documents.

5.9 NEW MEASURES PROPOSED THROUGH CONSULTATION

During the consultation period, a number of submissions included possible additional measures which could be included in the final plan. During the review of submissions, the Plan Team identified six new measures for inclusion in the North Eastern River Basin Management Plan and Programme of Measures. These are outlined below.

Table 5.1 Additional Measures Identified From Consultation Responses

Plan Section	Key Sector	Measure Type	Measure Description
7.0	All	Conservation Status	Develop action plans for designated freshwater pearl mussel Special Areas of Conservation
7.0	Public Participation	Community Engagement	Facilitate River Trusts across NI
7.1	Abstraction & Flow Regulation	Education And Awareness	Promote efficient use of water
7.3	Collection & Treatment of Sewage	Research and development	Introduce seasonal discharge consents where possible to promote installation of reed beds and constructed wetlands for sewage treatment
7.3	Collection & Treatment of Sewage	Education And Awareness	Awareness programme on septic tank maintenance, installation and design
7.2 & 7.3	Agriculture	Research and development	Review and investigate the effectiveness of constructed wetlands in the reduction of nutrient loadings

In line with the requirement of the SEA Regulations, these measures have been screened to determine if they require assessment as part of the SEA for the North Eastern River Basin Management Plan and Programme of Measures. The result of the screening exercise can be found in **Table 5.2,** overleaf. Where relevant, the mitigation measures put forward in the SEA would apply to these new measures.

Table 5.2 Screening of Other Possible Measures Identified From Consultation Responses

Further Assessment?	Additional Measure	Comment
Reduce		
X	Develop action plans for designated freshwater pearl mussel Special Areas of Conservation.	The details of these action plans are not yet available. However, a suite of potential freshwater pearl mussel measures was assessed as part of the Environmental Report as these were included in several of the other RBMPs being developed for the island of Ireland. Therefore, once the measures to be included in these action plans are available it is strongly recommended that these be compared with the measures assessed in this SEA in order to determine if any of the recommended mitigation measures apply. In addition, a screening exercise will need to be carried out prior to development of the individual action plans in order to determine whether a SEA or HDA of these is required.
X	Review and investigate the effectiveness of wetlands in the reduction of nutrient loadings.	Review and investigation of the effectiveness of wetlands in reducing nutrients is part of the information gathering stage of the planning process. Therefore, this type of measure is not expected to result in significant environmental impacts and as such was not assessed. However, the potential impacts associated with development of wetlands were assessed under a separate measure (SEA PM2) and mitigation was recommended. Therefore, it is strongly recommended that when specific proposals are put forward that these be subject to environmental assessment to identify potential impacts. A review of the mitigation measures in the SEA, in particular PM2, should be carried out to determine if they are applicable.
X	Facilitate River Trusts across NI.	The establishment of River Trusts is not anticipated to impact on the environment, aside from the positive impacts to water quality
X	Promote efficient use of water.	No environmental impacts would be expected to occur as a result of implementation of this measure, aside from the positive impacts to water quality.
X	Introduce seasonal discharge consents where possible to promote installation of reed beds and constructed wetlands for sewage treatment.	The impacts associated with implementation of this measure would be similar to those identified as part of the SEA process for measure PM2 (as referenced in the SEA). The mitigation measures recommended to address that measure would also apply in this case.

Further Assessment?	Additional Measure	Comment
X	Awareness programme on septic tank maintenance, installation and design.	No environmental impacts would be expected to occur as a result of implementation of this measure, aside from the positive impacts to water quality. Of all of the measures proposed within the draft Plan, those aimed at education, awareness and information sharing are perhaps the most critical as they provide for direct engagement of stakeholders and the public by providing the tools to take ownership of the Plan and the proposed measures. It is recommended that the education programme be carried out in tandem with the new requirements for tank maintenance and include guidance on disposal of sludges in order to increase the effectiveness and usefulness of this measure.

5.10 CHANGES TO EXISTING MEASURES

Some proposed measures initially identified as supplementary were later reviewed and reclassified as existing or planned basic measures under other legislation, e.g. Amendments to the Wildlife Order (NI) and Mining Waste Directive. Where applicable, the mitigation measures which apply to these plan measures have been incorporated into the final Plan either as stand alone mitigation or through the inclusion of other existing/planned or supplementary measures.

6 HOW ENVIRONMENTAL CONSIDERATIONS AND CONSULTATIONS HAVE BEEN TAKEN INTO ACCOUNT IN THE FINAL PLAN

6.1 ENVIRONMENTAL CONSIDERATIONS

The SEA process took place in conjunction with the preparation of the Plan and the HDA. Thus, from the outset, considerations of the environmental consequences of the alternatives have been taken into account. At a formal level the process involved a series of workshops, presentations, discussions and meetings between the SEA, HDA and Plan Teams as well as with statutory consultees and non-statutory stakeholders and organisations. This iterative process ensured that the SEA/HDA and the preparation of the Plan were well integrated in order to meet the environmental objectives and the objectives of the Plan (**Figure 6.1**).

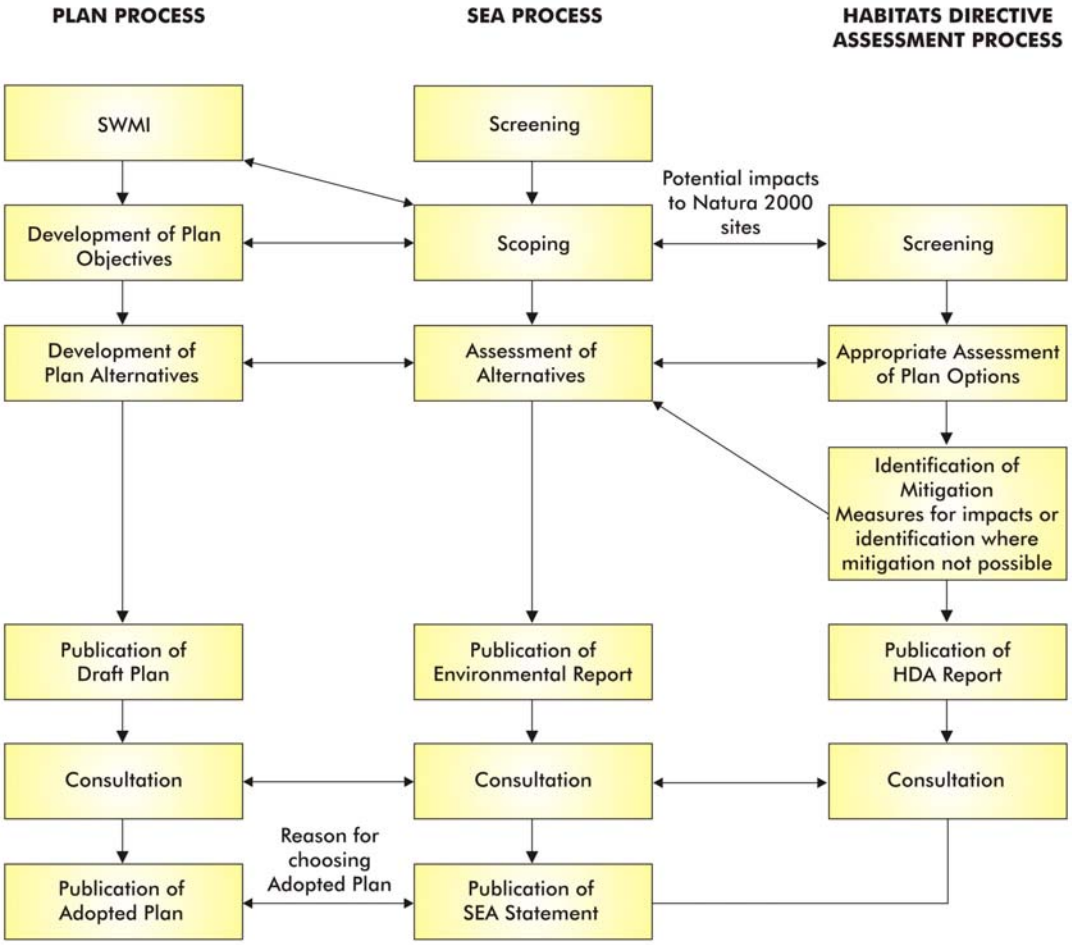

Figure 6.1. Integration of the SEA/HDA and preparation of the RBMP and POM

6.2 SUMMARY OF THE SEA ASSESSMENT

6.2.1 Assessment Methodology

The approach used for the assessment in the SEA is termed an 'objectives led assessment'. In this case, each of the alternatives considered was tested against defined SEA Environmental Objectives (**Box 6.1**), which are separate to the Plan objectives and cover each of the SEA environmental topic issues from the legislation, e.g. population, biodiversity, material assets, etc. A matrix format was used for the assessment, which permitted a systematic approach and comparison of alternatives.

Box 6.1: Environmental Objectives

Objective 1	**BFF**	Prevent damage to terrestrial, aquatic and soil biodiversity, particularly EU designated sites and protected species.
Objective 2	**P**	Contribute to sustainable development.
Objective 3	**HH**	Protect and reduce risk to human health in undertaking water management activities.
Objective 4	**S**	Avoid damage to the function and quality of the soil resource in the River Basin District.
Objective 5	**W**	Prevent deterioration of the status of water bodies with regard to quality, quantity and improve water body status for rivers, lakes, transitional and coastal waters and groundwaters to at least good status, as appropriate to the WFD.
Objective 6	**AQ**	Minimise emissions to air as a result of Plan activities.
Objective 7	**C**	Minimise contribution to climate change by emission of greenhouse gasses associated with Plan implementation.
Objective 8	**MA1**	Maintain level of protection provided by existing morphological infrastructure, e.g. flood defences, coastal barriers, groynes, etc.
Objective 9	**MA2**	Provide new and upgrade existing water management infrastructure to protect human health and ecological status of water bodies.
Objective 10	**MA3**	Support economic activities within the District without conflicting with the objectives of the WFD.
Objective 11	**MA4**	Protect water as an economic resource.
Objective 12	**CH**	Avoid damage to cultural heritage resources in the River Basin District.
Objective 13	**L**	Avoid damage to designated landscapes in the River Basin District.

***Key**: BFF – Biodiversity, Flora and Fauna; P – Population; HH – Human Health; S – Soils; W – Water; AQ – Air Quality; C – Climatic Factors; MA – Material Assets; CH – Cultural Heritage; L – Landscape*

The main alternatives scenarios considered for assessment in the SEA were:

a) Business as Usual, i.e. implementation of the 11 Existing Directives listed in Article 10 and part A of Annex VI of the WFD. These were termed *Actions We Are Already Taking* in the North Eastern draft Plan terminology now referred to as existing and planned measures in the Plan;

b) Business as Usual Plus, i.e. as above but with other required measures noted in Article 11(3) of the WFD, also termed Ac*tions We Are* Already Taking in the draft North Eastern Plan terminology now referred to as existing and planned measures in the Plan; and

c) Additional Measures, termed *Further Actions* in the draft North Eastern Plan terminology now referred to as supplementary measures in the Plan.

As the preparation of the draft Plan for the North Eastern RBD was carried out at the same time as the other seven plans for the island of Ireland, it was considered appropriate by the SEA Team that all of the proposed measures be considered in the SEA, as most of these could be useful in the North Eastern RBD. This allowed the North Eastern RBD Plan Team to consider adding other measures to the final RBMP and POM without triggering the need to put the Environmental Report out for additional public consultation. It is acknowledged that a few of the measures are only applicable in their specific jurisdiction, e.g. legislation; therefore, a reference to the source jurisdiction for each measure was included for clarity and can be found in Tables 8.3 to 8.13 of the Environmental Report. It should be noted that there are also measures included and assessed in the SEA that did not originate in any of the Plans (e.g. WW6), but which the SEA Team considered to be valid alternatives. SEA Measure WW6 'Reduction in pollution at source through education campaigns' has been incorporated in the Plan through the inclusion of a number of existing/planned and supplementary measures targeted at improving education and awareness and advice. Further details of these can be found in the Plan in Section 1.5 - 'Education and raising awareness of the Plan'.

Prior to carrying out the assessment, the Business as Usual Measures were sieved to focus on elements that could be reasonably assessed. The Business as Usual Plus measures were all assessed; however, this was confined to qualitative assessment due to lack of specific detail that would allow quantification. The Additional Measures were also sieved to determine which were suitable for assessment. Commentary on why assessment was not considered appropriate for a particular measure is provided in Tables 8.3 to 8.13 and Section 9 of the Environmental Report.

6.2.2 Overall Summary of Assessment

For convenience, a summary of the assessment contained within the SEA is presented in **Appendix A**. It should be noted that only those measures included in the draft Plan for the NERBD are included. The full assessment can be found in Tables 9.1 to 9.11 of the main volume of the Environmental Report and the Appendix to Chapter 9 of the Environmental Report.

6.2.3 Summary of Cumulative and Synergistic Impacts

The primary cumulative/synergistic impacts identified include improvements in water quality leading to positive cumulative impacts to aquatic biodiversity, flora and fauna, both within EU designated sites and the RBD as a whole. Negative cumulative impacts to air quality and climate have been identified

due the potential for a number of alternatives to result in increased emissions to air from transport-related activities and processing of waste materials, e.g. sludge. However, some of this can be offset by use of renewable energy sources and capture of CH_4 for reuse as a fuel source.

Also, a number of measures call for the construction of new or upgraded infrastructure. Cumulatively, the increased energy use from these projects could result in increased emissions of GHG (greenhouse gases), potentially contributing to climate change. This cumulative impact could be mitigated through the use renewable energy to fuel new infrastructure projects. In addition, new or upgraded infrastructure could result in potentially cumulative negative impacts to biodiversity, landscape and cultural heritage if these are sited poorly. Consideration of the wider environment prior to siting new infrastructure will greatly reduce this potential cumulative impact.

A number of the physical modification measures have considerable potential to improve the environment individually or cumulatively if implemented correctly; however, the potential for negative cumulative impacts to cultural heritage, landscape and biodiversity from these measures is dependant on the methodology in which they are implemented.

The cost associated with implementation of many of the measures could result in potential cumulative negative impacts to both individuals and local authorities, for which no mitigation may be available. However, cumulative positive impacts would be experienced by those economic sectors reliant on good water quality (residential, tourism, angling, etc.).

In addition, some of the measures may result in changes in land use or development patterns. While, these changes are expected to make a significant contribution to sustainable development in the North Eastern RBD, they could also result in cumulative negative impacts. For example, changes could occur in the composition of rural communities should new generations of families that have resided in areas historically, no longer be able to continue to build individual residences on the family holding due to restrictions on siting of on-site wastewater treatment systems. In addition, limitations on forestry in sensitive areas could impact on the economic value of forests as well as reduce the potential for carbon sequestration, cumulatively impacting on Ireland's climate change commitments.

6.2.4 Summary of Secondary or Indirect Impacts

Secondary impacts to biodiversity could result due to the physical and / or chemical alteration of habitats resulting in loss or change to flora and fauna currently present. This is particularly important for birds that may feed on biomass generated by nutrient output from wastewater treatment facilities, industry or farming. Changing the nutrient output or the physical setting may cause a change in available food sources, ultimately leading to the loss of the bird species from the area.

Also, changing the management of land through fencing, set-aside or buffer strips may indirectly impact on protected flora and fauna dependent on the current regime. This would be true for corncrakes, which are ground nesting birds that rely on winter flooding and a mowing regime for survival, or meadow barley, which is a plant that relies on a level of grazing in order to outcompete other non-native species. Indirect positive impacts may also occur in relation to soil biodiversity, particularly with alternatives that limit erosion, soil loss and remediate land contamination.

Secondary impacts to population may result as a number of measures will guide land use planning, thereby contributing to sustainable development. All of the measures are designed to improve water quality, which also contributes to sustainable development.

Improvements to water quality will indirectly impact on human health in relation to protection of drinking waters, bathing waters and shellfish waters. Improvements in septic tank management and upgrades to treatment facilities will also indirectly impact on human health through reduced odour nuisance.

Soils are one of the pathways for movement of water and as such they can be indirectly impacted by many of the measures discussed. Indirect positive impacts to soils are likely from measures designed to reduce farming pressures, improve nutrient balances and prevent erosion. Measures to prevent pollution of waters by chemicals will also improve soil quality and function.

Air quality has the potential to interact with other environmental receptors, principally human health and climate. Increased treatment requirements may increase emissions to air from treatment and disposal facilities locally, e.g. dioxins from incineration; however, air quality emissions would be subject to Emission Limit Values (ELVs) set out in IPPC and/or Waste licenses. Emissions to air from transport also have the potential to indirectly impact on air quality and climate through release of GHG.

Alternatives directed at improving water quality through upgrade of wastewater treatment infrastructure or reducing loading can indirectly impact on material assets by improving efficiency of existing infrastructure and providing new infrastructure. Negative indirect impacts are likely for some economic activities currently using or discharging to water but positive impacts will also be experienced by other economic activities dependent on clean water, e.g. angling, tourism etc.

6.2.5 Mitigation Required

As part of the Environmental Report, an extensive list of mitigation measures was proposed for incorporation in the final North Eastern RBMP and POM. These mitigation measures were based on the findings from both the SEA and the HDA. The North Eastern RBD Plan team considered these mitigation measures during the consultation period. The relevant mitigation has been identified which

pertains to measures being brought forward into the final North Eastern RBMP and POM, following changes made after close of the consultation period. **Table 6.1** outlines the various mitigation measures to be put in place as part of the implementation process and links them with the relevant measures included in the North Eastern RBMP and POM. The mitigation measures are detailed in the 'Strategic Environmental Assessment Mitigation Measures' document, which is available on the website (www.ni-environment.gov.uk/wfd).

The key sector for each measure requiring mitigation in the River Basin Management Plan is given in the first column of the table. The SEA reference number for the applicable mitigation measure(s) is given in the fourth column of the table. Mitigation Measures in **black** are from the SEA Environmental Report, while Mitigation Measures in **red** are from the Habitats Directive Assessment. The final column considers how the Mitigation Measures will be addressed during implementation of the Plan.

It should be noted that for the purposes of these mitigation measures **in all cases** the term Appropriate Assessment (AA) refers to the assessment process as specified in Article 6 of the Habitats Directive. This starts with screening to determine whether a likely significant impact from the plan/programme is expected to occur to a Natura 2000/Ramsar site as a result of activities in/adjacent to/in the catchment of a Natura 2000/Ramsar site. If, in accordance with AA guidance (guidance produced by the EU and the Department of the Environment (DOE) Northern Ireland Environment Agency (NIEA)), it can be shown that there is no potential for impact at the screening stage, no further assessment may be required. However, when the plan/programme being screened lies within or adjacent to a Natura 2000/Ramsar site then such a determination must be made in consultation with NIEA. If the plan/programme is within the catchment (surface and groundwater) of a Natura 2000/Ramsar site, such consultation with NIEA is only necessary for those water dependent Natura 2000 sites listed in the WFD Register of Protected Areas.

Table 6.1 Required Mitigation Measures brought forward into the final RBMP and POM

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
Abstraction and flow regulation	Targeted assessment of water resource availability and management priorities.	The potential for this measure to result in significant environmental impacts depends on the actions involved.	**AB1**	None. However, it is highly recommended that when the specific details as to the types of changes to statutes and regulations are proposed, that these be subject to environmental assessment to identify potential impacts and that a review of the mitigation measures in the SEA be carried out to determine if they are applicable.	This will be addressed as required.
Abstraction and flow regulation	Assess compliance of monitored abstractions and compensation flows with licence conditions.	• Direct positive impact on water and on aquatic biodiversity due to minimum flow and flow variability. • Indirect positive impacts for human health and soils. • Indirect positive impacts for population and for material assets including angling and tourism. • Positive impact on cultural heritage where minimum flows keep submerged archaeology from exposure. • Negative impacts to cultural heritage where compensation flows cause damage to riverine or bank side archaeology. • Habitats Directive Assessment has identified this as desirable, with overall benefits for protected areas.	**AB5**	This alternative should take account of the compensation flow requirements on regulated rivers to maintain minimum flow or flow variability, where applicable, to maintain good hydrological status and support ecology.	Flow controls and the regulation of ecological flows is a key aspect of the Abstraction & Impoundment (Licensing) Regulations. Where a 'significant' environmental impact occurs as a result of a diversion of water then NIEA are in a position to take enforcement action. All environmental impacts are considered and mitigation measures are included in any license issued. The amount of water permitted for abstraction will depend upon the scale and nature of the project and site-specific fishery, nature conservation protection designations and WFD hydrology standards. The DOE consult with other agencies that have responsibility the Habitats Regulations in Northern Ireland as part of the

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
					assessment & decision making process.
Abstraction and flow regulation	Promote efficient use of water.	This measure is directed at education and awareness and is extremely valuable in aiding the conservation of water resources. While this measure is expected to only result in positive impacts, mitigation measures are recommended to refine it and increase its usefulness.	**AB6/ AB7/ AB8**	Although water conservation awareness campaigns have been implemented the message has not hit home for many people. It is therefore recommended that a working group be established to develop tools to promote water awareness and these tools are included in future water awareness campaigns.	The Northern Ireland Water Resource Strategy 2002 – 2030 emphasises the need to rationalise existing uneconomic water sources and concentrate on the sources that can meet our needs cost effectively and reliably. The main aim is rationalisation of drinking water sources. Implementation of the Northern Ireland Water Resource Plan, which is currently under review, will ensure that this rationalisation takes place. Northern Ireland Water encourage the wise use of water through a number of campaigns. An example of such a campaign is the promotion of the 'Hippo Water Saver'. This is a simple and low cost water saving device to help conserve water in toilet cisterns.
			AB9	Suitable education and awareness campaigns are recommended to provide residential users with the tools / knowledge to reduce water consumption. It is also strongly recommended that water metering schemes promote conservation.	
			AB All	A focussed awareness campaign on water use and the value of water should be implemented to reduce the volumes of water used / wasted, followed by leakage improvement and only then new infrastructure. Any new infrastructure, e.g. storage, should source its fuel from renewable sources.	
Agriculture	To develop and implement Local management area action plans to target advice	• Direct positive impact for soils and water quality.	**AG8**	An information and advice campaign targeted at farmers should be implemented on a	The Code of Good Agricultural Practice (COGAP) is promoted by DARD for the prevention of

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
	and regulatory action.	• Indirect positive impacts on aquatic ecology and human health. • Positive impact on cultural heritage. • The Appropriate Assessment has identified that by their voluntary nature it is difficult to achieve consistent and application of these schemes.		national scale. This should focus on prevention first followed by BMP as core themes. It will be important that adequate consideration is given not just to water and biodiversity but also soils and cultural heritage, as a narrowly focussed approach may lead to indirect negative impacts on these areas. It is also recommended that information campaigns highlight best practice in the sector in order to demonstrate that an economically viable farming operation is possible within such schemes. Opportunities for agri-tourism should also be highlighted as a way to supplement farm income while protecting the environment. Guidance shall also include information relating to implementation in areas protected for biodiversity.	pollution of water, air and soil. The Code is designed to provide practical guidance for farmers and growers in relation to pollution control. It also serves as a reference document for those involved in providing pollution control advice to farmers. The Northern Ireland Countryside Management Scheme (NICMS) enhances the agri-environment programme's ability to reduce water pollution from agricultural sources and to improve water quality on farms. NICMS participants will continue to draw up obligatory farm waste management plans and in addition they will have the option of taking up new farm waterway and riparian zone management measures which aim to enhance river and riverbank biodiversity. The College of Agriculture, Food and Rural Enterprise (CAFRE) hold training workshops that cover Cross Compliance, Field Boundary Management, Dealing with Farm Wastes, Nitrates Information and Nitrates derogation in NI.
Agriculture	Ensure sustainable use of manures with high phosphorus content, particularly poultry and pig manures.	Ensuring that manure is used sustainably would contribute to achieving the overall positive impact of reducing phosphorus. Assessment of this measure would be premature prior to a decision being made on the specific proposals to be implemented. Some of the technical	**AG10**	None. However, it is strongly recommended that when the details of these are known, they are subject to an environmental assessment to identify potential impacts other than those related to water, e.g. population, etc.,	This will be addressed as required.

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
		proposals that could be chosen were assessed under separate measures and mitigation recommended.		and that a review of the mitigation measures in the SEA be carried out to determine if they are applicable.	
Agriculture	Review and investigation of the effectiveness of wetlands in the reduction of nutrient loadings.	Review and investigation of the effectiveness of wetlands in reducing nutrients is part of the information gathering stage of the planning process. Therefore, this type of measure is not expected to result in significant environmental impacts and as such was not assessed. However, the potential impacts associated with development of wetlands were assessed under a separate measure (PM2) and mitigation was recommended.	**AG14 (New Measure)**	None. However it is strongly recommended that when specific proposals are put forward that these be subject to environmental assessment to identify potential impacts. A review of the mitigation measures in the SEA, in particular PM2, should be carried out to determine if they are applicable.	This will be addressed as required.
Collection & Treatment of Sewage	Review waste water consent conditions to ensure that adequate controls and emission limits are set. Further development of mathematical models for all of Northern Ireland to look at cumulative impacts of discharges at a catchment scale. Detailed studies of the consents for sewer systems to address the volume spilt from overflows in urban areas.	This type of measure is not expected to result in significant environmental impacts and as such was not assessed. However, impacts could occur if systems are found to be in non-compliance, and thus require upgrade. Therefore, it is anticipated that this measure would be the first step in implementation of measures such as improvements in treatment or plan upgrades. These types of measures were assessed and mitigation recommended.	**WW8**	None. However, it is highly recommended that when specific proposals are chosen, that that these be subject to environmental assessment to identify potential impacts. A review of the mitigation measures in the SEA should be carried out to determine if they are applicable.	This will be addressed as required.
Collection & Treatment of Sewage	Address the environmental impacts of inadequate private sewerage discharges and support sustainable development as part of PC10.	The potential for this measure to result in significant environmental impacts depends on the actions involved. Assessment of this measure would be premature prior to a decision being made on the specific projects to be implemented. It should be noted that some of the projects that could	**WW9**	None. However, it is highly recommended that when specific proposals are chosen, that that these be subject to environmental assessment to identify potential impacts and that review of the mitigation	This will be addressed as required.

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
		be chosen, e.g. installation of higher standards of treatment, were assessed under separate measures and mitigation recommended.		measures in the SEA be carried out to determine if they are applicable.	
Collection & Treatment of Sewage	Mapping and method development to calculate the vulnerability of receiving waters. Investigate provision of main sewers or On-site Waste Water Treatment Systems maintenance programmes in priority areas (existing systems, large unsewered populations where water quality is threatened).	• Direct positive impacts on water and soil quality in the short term. • Indirect impacts on aquatic biodiversity and human health, timeframe would depend on speed of implementation. • Indirect negative impacts on biodiversity are possible due to changes in nutrient composition. • Appropriate Assessment notes that the return of surface and groundwaters to a more natural state as existed pre phosphate products would be a positive impact. • Direct positive impacts on the provision of water management infrastructure. • Indirect positive impacts on water as an economic resource. • May have cost implications at the local authority and individual level. • Indirect air and climate impacts due to increases in sludge disposal and transport. • Indirect positive impacts to air quality due to a reduction in nuisance odours. • Indirect negative impacts to human health if land spreading of sludges occurs without proper guidance.	**UP7/ UP8/ UP11** **UP8** **UP7/ UP11** **UP11**	New wastewater treatment infrastructure, including sludge disposal infrastructure, will be subject to environmental assessment at the project level to reduce indirect impacts to biodiversity, landscape, cultural heritage, air quality and climate. Intelligent transport programmes should be put in place to minimise the amount of emissions associated with movement of sludges from on-site treatment systems. An Appropriate Assessment will be required for new structures. Upgraded treatment works should be required to introduce BAT, including the use of renewable energy sources, in order to reduce GHG emissions and others resulting from increased demand for treatment.	In terms of septic tanks, the Water Order consenting process is the key control for ensuring the protection of our waters and this operates alongside the planning system by restricting the location of new developments. Planning Service has issued a planning strategy for rural Northern Ireland; standards and joint UK guidance for on-site systems are also available. NIEA consents all discharges and undertakes inspections and enforcement where water pollution related to septic tanks and / or proprietary on-site systems is identified.

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
		• Education essential for owners of on-site systems to raise awareness of need for ongoing maintenance of on-site treatment systems.			
Collection & Treatment of Sewage	Identify where there are potential constraints on development.	Development of constraints mapping is part of the information gathering stage of the planning process. This measure could be the first step in ensuring the zoning of lands is directly linked to the provision of adequate and appropriate wastewater treatment infrastructure.	**UP10**	None. However, it is highly recommended that when specific proposals are chosen, that these be subject to environmental assessment, where required, and Appropriate Assessment to identify potential impacts. In addition, a review of the mitigation measures in the SEA should be carried out to determine if they are applicable.	This will be addressed as required.
Collection & Treatment of Sewage	Awareness programme on septic tank maintenance, installation and design.	This measure is directed at education and awareness and is extremely valuable in aiding improvements in water quality. While this measure is expected to only result in positive impacts, mitigation measures are recommended to refine it and increase its usefulness.	**UP7/ UP8**	The education programme should be carried out in tandem with the new requirements for tank maintenance and include guidance on disposal of sludges.	The education programme would aim to be carried out in tandem with the new requirements. NIW provide guidance on Septic Tank, Domestic Treatment Plant and Cesspool Services which includes best practice.
Collection & Treatment of Sewage	Introduce seasonal discharge consents where possible to promote installation of reed beds and constructed wetlands for sewage treatment. Review and investigation of the effectiveness of wetlands in the reduction of nutrient loadings.	• Direct positive impacts on material assets through improvements to existing infrastructure. • Indirect positive impacts on water quality, biodiversity, soils and human health by improving effluent quality. • Indirect positive impacts to water as an economic resource and the sectors dependent on it. • Contributes to sustainable development by ensuring adequate water and wastewater infrastructure. • Potential negative impacts if	**WW10/ WW11/ WW12** **WW10/ WW11/ WW12**	An assessment under Article 6 of the Habitats Directive will be required. If additional landtake is required environmental studies should be carried out to assess the impact on the environment.	This will be addressed as required.

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
		additional landtake is required for existing or new infrastructure. • Indirect negative impacts on biodiversity, soils, and cultural heritage, if sited inappropriately. • Additional costs likely to upgrade systems. • Appropriate Assessment found that reduced nutrient loads may improve water quality and reduce the impacts of eutrophication. Particularly important for protected areas with more stringent objectives, e.g. freshwater pearl mussels or hard water lakes.			
Urban Development	Develop an extended regulatory tool kit. Review of diffuse pollution sources and options for control.	The details as to the management controls to be included are not yet available.	**UB5**	None. However, it is highly recommended that when the details as to the management controls to be included are known, that these be subject to environmental assessment to identify potential impacts and that a review of the mitigation measures in the SEA be carried out to determine if they are applicable.	This will be addressed as required.
Urban Development	Assess diffuse loads and allow for their prioritisation of new actions.	Development of a screening tool is part of the information gathering stage of the planning process. It is highly recommended that when specific proposals are chosen, that these be subject to environmental assessment to identify potential impacts.	**UB7**	None. However, it is highly recommended that when specific proposals are chosen, that these be subject to environmental assessment to identify potential impacts and that a review of the mitigation measures in the SEA be carried out to determine if they are applicable.	This will be addressed as required.

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
Forestry	Introduce more stringent actions for the most sensitive areas, when scientific evaluation establishes a need, e.g. phased felling of smaller harvesting coup rather than felling a large forest block all at once. Development of maps indicating where forests should be developed taking account of sensitive and protected areas.	There are a number of guidelines/management controls identified as potential measures, the details of which are not yet available. However, as these are likely to require some changes to forestry practices it is strongly recommended that when the details of these are known they are compared with the suite of mitigation measures recommended for Forestry in the SEA, to determine if any of the required mitigation measures apply, as well as being subject to an environmental assessment and, where required, an Appropriate Assessment to identify potential impacts other than those related to water, e.g. climate, population, etc. Some of the impacts that could potentially occur: • Negative impacts for climate and material assets. • Negative impact on the economic value of forests through restrictions and limitations. • Direct long-term benefits to water and soil quality. • Indirect long-term benefits to human health and aquatic biodiversity.	**FALL** **F2 to F8** **F3**	Future guidelines for forestry should be developed through a steering group represented by bodies such as Coillte, the Forest Service (Northern Ireland), the Forest Service (Ireland), National Parks and Wildlife Service, the Central Fisheries Board (Ireland), the Fisheries Conservancy Board (Northern Ireland) the Northern Ireland Environment Agency, and representatives from the relevant planning authorities to ensure that the final guidelines take a holistic approach to the environment which includes biodiversity, landscape, climate and cultural heritage interests. Consideration should be given to identifying and implementing as a priority those alternatives that can be applied to forests only starting or midway through the growth cycle. It is recommended that prior to any changes in forest size or species mix, a study is carried out to determine the change, if any, in the carbon dioxide sequestering capacity of the forest. Should sequestering capacity be reduced, compensation measures will be required to offset these. An Appropriate Assessment will be required for changes in the	The publication 'Forests and Water Guidelines' provide guidance to forest mangers on how forests should be designed and operations planned to protect and enhance the water environment. They also give clarity to practitioners on how field operations should be carried out. These guidelines apply equally to both state and private forests. The guidelines were substantially revised taking account of the latest research and advice from a wide spectrum of water regulatory authorities and conservation agencies. A new forestry bill has been introduced to the Northern Ireland Assembly in June 2009. The new bill reflects recent developments in Northern Ireland forestry policy and strategy and is anchored in the UK Government's international commitments on sustainable forest management, biodiversity and climate change. Any planned increase in forest cover will consider WFD commitments and taking into account the following environmental and land use constraints: • Peat greater than 50cm depth • Land over 300 metres

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
				structure of existing forests to include structural diversity and increased open space.	• Special Areas of Conservation (SAC) • Special Protection Areas (SPA) • Scheduled Monuments and Zones • Ramsar Convention Sites • Areas of Special Scientific Interest (ASSI) • Breeding wader Areas
			F5	An Appropriate Assessment will be required if a new plantation is proposed to be developed on peat sites or erodible soils in areas or catchments in areas protected for biodiversity (i.e. an SAC, SPA or Ramsar).	
			F13	Should it be proposed to mitigate acid impacts symptomatically using basic material, this should be avoided in protected areas, particularly in sensitive freshwater pearl mussel catchments.	
			F13/ F14	An Appropriate Assessment will be required if it is proposed to mitigate acid impacts symptomatically using basic material or proposed to manage catchment drainage to increase residence times and soil wetting, including no drainage in some areas.	
			F19	Detailed studies should be carried out prior to the introduction of any non-native species to be used as a biological control method.	

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
			F19	An Appropriate Assessment will be required if it is proposed to introduce non-native species to be used as a biological control method.	
Forestry	Assessment of operations on a catchment basis.	Measure involves assessing operations causing a significant threat to water quality on a whole catchment basis.	**F20**	A determination with regard to the requirement for SEA for Forestry practices under the provisions of the SEA Directive and Appropriate Assessment under the Habitats Directive should be made.	This will be addressed as required.
Industry & Other Businesses	Review of diffuse pollution sources and options for control.	There are a number of management controls identified as potential measures, the details of which are not yet available. The overall positive aspect of these measures should be noted as they provide the tools, methodologies and data required to inform key actions arising from the Plan.	**IND1**	None. However, it is strongly recommended that when the details of these are known, they are subject to an environmental assessment to identify potential impacts other than those related to water, e.g. population, etc, and that a review of the mitigation measures in the SEA be carried out to determine if they are applicable.	This will be addressed as required.
Industry & Other Businesses	Achieve compliance with discharge consent / licence standards to reduce inputs at source.	• Overall direct positive impact to water quality. • Indirect positive impact to biodiversity, soils, human health and water as an economic resource. • Indirect negative impacts for targeted activities as additional costs may be incurred through provision of upgrades or changes in management practices.	**IND3**	It is important to ensure the environmental quality standards that are set for receiving waters are achieved. Particular attention should be placed on discharges to EU protected areas in case a licence requires more stringent standards.	NIEA has committed to delivering a key strategic target of achieving 90% compliance with Water (NI) Order 1999 discharge consent standards by 2016. The standards that have been set have been established through a UK Technical Advisory Group (UKTag) and this is supported by a number of expert working groups to establish a consistent and scientific basis for the standards. The technical

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
					standards developed have also been subject to peer review across Europe to ensure their appropriateness.
Industry & Other Businesses	Review of diffuse pollution sources and options for control. Assess diffuse loads and allow for their prioritisation of new actions.	• Overall positive impacts to water and aquatic biodiversity. • Direct and indirect positive impacts on material assets due to provision of upgraded water infrastructure and protection of water as an economic resource. • Indirect positive impacts to human health and soils. • Indirect negative impacts to material assets due to additional costs associated with provision of upgrades or changes in management practices. • If preparation of catchment nutrient budgets takes account of the specific requirements/objectives of EU designated sites this result in a significant positive impact to these protected areas.	**IND7**	Catchment nutrient budgets should be prepared and limits set according.	Ongoing research nutrient budgets, by the Agri-Food and Biosciences Institute, will be published when it is completed.
Freshwater Morphology	Assess technical feasibility and cost effectiveness of restoration measures.	• Direct positive impacts for water quality and aquatic biodiversity. • Negative impacts to architecture, archaeology and cultural heritage due to removal of structural features. • Indirect negative impacts on landscape due to removal of structural features. • Direct positive impacts to biodiversity due to remediation of channelisation	**PM6** **PM6/ PM9**	An Appropriate Assessment will be required for remediation schemes. An archaeology, architecture and cultural heritage assessment will be required before removal of any physical modifications with potential for cultural heritage value. Mitigation measures will be in agreement with the relevant authority. This assessment	An inter-departmental working group will be established to develop and put in place by December 2010 appropriate guidance to supplement legislation offering control over physical modifications, which will ensure compliance with WFD requirements.

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
		or barriers. • Negative impacts to existing habitats, which have developed as a result of physical modifications. • Indirect negative impacts on human health, population and material assets due to the removal of flood defences. • Benefit to rivers that were previously straightened or where habitats for dish spawning were destroyed.	**PM6**	should include reference to cultural heritage in the context of the existing landscape. A flood impact assessment should be carried out for all channelisation and barrier remediation schemes to determine whether an increased risk of flooding would occur as a result.	NIEA has agreed to take part along with other stakeholders in pilot study to explore the use of catchment wide sustainable flood risk management techniques. This is being lead by Rivers Agency.
Freshwater Morphology	Develop and implement restoration measures on selected water bodies.	Difficult to determine what impacts would result from remediation schemes until more details are available about what would be involved in the schemes.	**PM7** **PM7**	An Appropriate Assessment will be required for remediation schemes. Any voluntary schemes and/or overgrazing remediation schemes should be rolled out in tandem with an education and guidance programme to ensure that the schemes are carried out in a holistic manner.	The Northern Ireland Countryside Management Scheme (NICMS) participants have the option of taking up new farm waterway and riparian zone management measures which aim to enhance river and riverbank biodiversity.
Freshwater Morphology	Produce appropriate guidance to supplement legislation offering control over physical modifications.	• Positive benefit for fish movement and for the wider biodiversity of surface waters. • Indirect negative impacts on climate if hydroelectric facilities were removed/curtailed. • Economic benefit in the improvement of fishery resources through the removal impassable barriers. • Direct positive impacts for water quality and aquatic biodiversity.	**PM9** **PM9**	An Appropriate Assessment will be required for impassable barrier remediation schemes. An archaeology, architecture and cultural heritage assessment will be required before removal of any physical modifications with potential for cultural heritage value. Mitigation measures will be in agreement with the relevant authority. This assessment should include reference to	An inter-departmental working group will be established to develop and put in place by December 2010 appropriate guidance to supplement legislation offering control over physical modifications, which will ensure compliance with WFD requirements.

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
		• Negative impacts to architecture, archaeology and cultural heritage due to removal of structural features. • Indirect negative impacts on landscape due to removal of structural features. • Negative impacts to existing habitats, which have developed as a result of physical modifications. • Indirect negative impacts on human health, population and material assets due to the removal of flood defences.		cultural heritage in the context of the existing landscape.	
Marine Morphology	Develop and implement protocol for maintenance dredging to ensure compliance with the Habitats, Birds & Water Framework Directives.	There are a number of management controls identified as potential measures, the details of which are not yet available.	**PM1**	None. However, it is strongly recommended that when the details of these are known, they are subject to an environmental assessment, where required, and Appropriate Assessment to identify potential impacts other than those related to water, e.g. population, etc., and that a review of the mitigation measures in the SEA be carried out to determine if they are applicable.	This will be addressed as required.
Alien Species	Targeted eradication of alien species at a catchment scale for Giant Hogweed, Japanese Knotweed and Spartina Anglica.	The potential for this measure to result in significant environmental impacts depends on the actions involved.	**Local Issues**	None. However, it is highly recommended that these be subject to an environmental assessment and Appropriate Assessment once the details are available and that a review of the mitigation measures in the SEA be carried out to determine if they are applicable.	This will be addressed as required.

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
All	Development of action plans for designated freshwater pearl mussel SACs.	The details of these are not yet available. However, a suite of potential freshwater pearl mussel measures was assessed as part of the Environmental Report. Therefore, it is strongly recommended that when the details of these are known they are compared with the suite of mitigation measures recommended in the SEA, to determine if any of the required mitigation measures apply.	**FPM 3**	It is recommended that compensation for riparian buffer zones be linked to annual upkeep of fences and management of buffers to ensure the ongoing benefit of this alternative.	Financial incentives such as the Northern Ireland Countryside Management Scheme (NICMS) enhance the agri-environment programme's ability to reduce water pollution from agricultural sources and to improve water quality on farms. NICMS participants have the option of taking up new farm waterway and riparian zone management measures which aim to enhance river and riverbank biodiversity. NIEA has initiated an internal working group to clarify the agency role and approach to road construction projects and has already engaged with Roads Service and the consultants managing planned road projects. The purpose of these meetings is to highlight potential environmental problems during the planning phase and to ensure necessary mitigation measures are considered and written into the project specifications and contracts. Any planned increase in forest cover will consider WFD commitments and taking into account the following environmental and land use constraints: • Peat greater than 50cm depth • Land over 300 metres
			FPM 5	All access roads or bridges of any size have a pollution risk that can cause damage to mussel populations during construction and operation. Any future roads or bridges of any size should be subject to an impact assessment for potential damage to the mussel population alone or in conjunction with other effects.	
			FPM 6/ FPM7	An impact assessment will be required for future roads and brides of any size to ascertain the potential of damage to the mussel population alone or in conjunction with other effects.	
			FPM 8	A clear instruction to ensure lime is not used in catchment roads or hard surfaces shall be incorporated into local authority plans and operation organisation.	
			FPM 9	Flood and ecological impact assessments will be required prior to any remediation works. There is a need for a holistic	

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
				approach to be applied so that implementation does not result in indirect negative impacts in other issue areas.	• Special Areas of Conservation (SAC) • Special Protection Areas (SPA) • Scheduled Monuments and Zones • Ramsar Convention Sites • Areas of Special Scientific Interest (ASSI) • Breeding wader Areas
			FPM 10/ FPM11/ FPM12	It is recommended that prior to any changes in forest size or species mix a study is carried out to determine the change in the carbon dioxide sequestering capacity of the forest. Should sequestering capacity be reduced, compensation measures will be required to offset these.	Drainage schemes must now meet the requirements of the Drainage Environmental Impact Assessment regulations, by considering significant effects on the environment of the proposed works.
			FPM 17/ FPM18/ FPM19	In-stream data loggers for turbidity and regular water sampling will be required as part of measures to address municipal and domestic wastewater as well as industrial discharges.	Department of Culture, Arts & Leisure (DCAL) works closely with Rivers Agency to provide advice and guidance, under the terms of a Service Level Agreement, to mitigate the impacts of drainage maintenance works on habitat. This requires that all drainage works must include mitigation and, where funding permits, fishery rehabilitation measures under the direction of DCAL Fisheries Technical Officers.
			FPM 25	Any works in the river bed or bank either for fisheries management, pipeline laying or other purposes shall be subject to an ecological impact assessment. Weirs, croys and stone bank reinforcement are unsuitable for freshwater pearl mussel SACs and alternatives should be found.	
			FPM26/	There is a need for a holistic	Existing controls over the removal of substrate from rivers prevent the removal of

Key Sector	Measures	Assessment Summary	SEA Ref. No.	SEA and HDA Mitigation Measures	How the MM will be addressed during implementation
			FPM27	approach to be applied to measures aimed at physical modifications or preventing sand and gravel extraction so that implementation does not result in indirect negative impacts in other issue areas. Flood and aquatic impact assessments will be required prior to any river bed or bank works.	material from river beds.

In addition, there are a number of mitigation measures recommended in the Environmental Report that are linked with measures put forward as part of the Plan-making processes in the other seven RBDs. While this mitigation may not link directly with measures included in the North Eastern RBMP and POM, the SEA Team recommended that one of these be carried forward into the final RBMP and POM as it represents a valuable proposal. The recommended mitigation measure is listed below.

> A programme of education and awareness to tackle improper and illegal disposal of waste should be implemented to support the reduction of pollution from these sources. A campaign to reduce the illegal disposal of waste would have particular benefit for protected areas, which tend to be remote rural areas, e.g. bogs, used for illegal disposal of unwanted materials. (SEA Ref. No. OP2/OP4)

Section 7.7 of the Plan and POM and the supporting document focussing on Waste as a key sector describe the existing/planned measures to address illegal waste disposal in NI. NIEA recognises that ultimately, the only sustainable solution to the problem of litter is at source, i.e. in stopping individuals dropping litter and disposing of waste in a responsible manner. To achieve this goal, it is necessary to raise the profile of litter issues and the environmental problems that litter can cause. To this end, NIEA part-funds Tidy NI, and Tidy NI often work in partnership with local groups and councils. NIEA also support, promote and participate in The Marine Conservation Society 'Beach Clean' which removes litter from selected beaches. It is therefore anticipated that the recommended programme of education and awareness to tackle illegal disposal of waste will be implemented as part of the Plan through these and other programmes.

6.3 INFLUENCE OF THE SEA PROCESS DURING PLAN PREPARATION

The SEA and HDA were ongoing throughout the development of the draft North Eastern RBMP and POM, with the SEA, HDA and Plan teams working together closely to identify potential environmental issues/constraints at the earliest possible stage in the Plan-making process. The SEA and HDA Teams were involved in the:

- Development of the alternatives considered in the draft RBMP and POM, SEA and HDA;
- Early identification of environmental sensitivities in the NERBD in order to amend the draft RBMP and POM and to avoid impacts on the environment;
- Recommendation of mitigation measures to address the potential impacts arising from the alternatives considered in the draft RBMP and POM; and
- Development of a monitoring plan to track the environmental performance of the RBMP and POM once implemented.

The SEA process has ensured that potential environmental impacts (both positive and negative) associated with the implementation of the North Eastern RBMP and POM have been given due consideration in the preparation of the Plan. **Table 6.2** shows how environmental considerations and the input of the SEA have been taken into account in the final RBMP and POM.

Table 6.2 How Environmental Considerations Have Been Taken into Account in the RBMP

Environmental Consideration	How has this been accounted for in the Plan?
Identification of environmental constraints in the NERBD	Through refinement of measures at an early stage.
Identification of extra Supplementary Measures	Identification of SEA Measure WW6, which includes provision for: *Reduction in pollution at source through education campaigns,* which will be implemented within the RBMP through a number of existing/planned and supplementary measures which are targeted at improving education and awareness.
Recommendation of Mitigation Measures to address impacts on the wider environment	The mitigation measures from both the SEA and the HDA that are relevant to the measures brought forward into the final RBMP and POM have been included as a supporting document to the Plan on the website www.ni-environment.gov.uk/wfd.
Required Environmental Monitoring Programme	The environmental monitoring programme required by the SEA has been included as a supporting document to the Plan on the website www.ni-environment.gov.uk/wfd.

7 PREFERRED SCENARIO AND REASONS FOR CHOOSING THE FINAL PLAN

In addition to the existing and planned measures (basic) listed as required in the Water Framework Directive, a range of supplementary measures has also been identified by NIEA and the other responsible Departments and Agencies in Northern Ireland.. From this range of measures a 'tool box' of Supplementary Measures was put forward in the draft RBMP and POM aimed at addressing existing pressures on the waterbodies in the North Eastern RBD. This 'toolbox' of measures was put forward with the option of applying one, none or several of these measures to a particular waterbody depending on the specific type and severity of the pressures determined to be effecting it.

This application of measures to address the specific pressures acting on each waterbody is the preferred scenario in the final RBMP. This approach/scenario has been selected for the final RBMP as it reflects the overall structure of the Water Framework Directive by: understanding the specific pressures acting on the individual waterbodies; taking account of the relative importance of each pressure; identifying the measures that will address the specific problems; and taking account of the cost and effectiveness of each measure. In this way a detailed profile and plan for each of the LMAs has been developed and can be applied in the most efficient and effective manner.

In fact, the primary effect of the RBMP and POM will be to improve water quality and ensure good ecological status by 2015 and beyond, with many of the measures resulting in direct positive impacts on water and aquatic biodiversity as a result. Where potential negative impacts have been identified, mitigation measures were proposed in the Environmental Report and have been carried forward into the final RBMP and POM as recorded in the 'Strategic Environmental Assessment Mitigation Measures and Environmental Monitoring Programme' supporting document, which is available on the website (www.ni-environment.gov.uk/wfd). The North Eastern RBMP and POM is prepared and presented at the strategic level. It is therefore noted that individual projects may be subject to funding and planning approval. In addition, such projects may also be subject to environmental impact assessment as well as assessment under the Habitats Directive, thus ensuring that due consideration is given to their potential environmental impacts.

The Plan has been developed through consultation and engagement with interested parties. It is intended to continue to work in partnership with organisations to help deliver the environmental objectives set out in the Plan in a coordinated way. This will continue for example through the work of the Water Framework Directive Implementation Working Group, National Stakeholder Forum and Catchment Stakeholder Groups described in more detail in the Section 9 of the Plan - Working together to implement the Plan.

The Plan has three components:

- The summary document provides a summary of the River Basin Management Plan for the River Basin District. It describes the current condition of the water environment, the objectives for improving it, the measures that will be used to deliver these improvements, and how we will work together to implement the Plan;

- The NIEA website www.ni-environment.gov.uk/wfd has an interactive map that provides access to information on local water bodies of interest and

- The NIEA website also provides details of the technical work and methodologies used in developing the River Basin Management Plan.

The Plan sets what are considered to be realistic objectives for the next three river basin planning cycles to 2015, 2021 and 2027. A programme of measures to deliver these objectives has been drawn up, taking into account the range of existing and planned measures as well as identifying supplementary measures that are required to be put in place. The measures will be applied at a local level depending on the reasons identified for not achieving good status.

The assessment undertaken for the Plan indicates that implementation of the programme would result in 49% of the surface waters achieving at least good ecological status or good ecological potential by 2015. This would be an overall improvement of 32% for surface waters. By 2027, 100% of groundwaters will achieve good status.

The River Basin Management Plan provides the primary means of coordinating and integrating the management and protection of the water environment in the North Eastern River Basin District. It will have to link with other relevant plans and programmes and will have to be taken into account by other public bodies when carrying out their duties and functions. This integrated approach should provide benefits for all those involved in the protection and enhancement of the water environment.

8 MEASURES TO MONITOR SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE IMPLEMENTATION OF THE ADOPTED PLAN

8.1 INTRODUCTION

Article 10 of the SEA Directive requires that monitoring be carried out in order to identify, at an early stage, any unforeseen adverse effects due to implementation of a Plan or Programme, and to be able to take remedial action. Monitoring is carried out by reporting on a set of indicators, which enable positive and negative impacts on the environment to be measured. Environmental targets and indicators were developed during the SEA and the preparation of the RBMP and POM (refer to Table 10.1 of the Environmental Report). The Environmental Monitoring Programme is based on these indicators and is discussed in more detail below. It is useful to note here that the monitoring programme currently being carried out under the WFD will form a substantial element of the Environmental Monitoring Programme required under the SEA.

It should be noted that the success of the RBMP and POM in moving water bodies toward achieving the objectives of the WFD, including achieving good status by 2015 and beyond, will be related to the speed at which the measures considered are implemented as well as choosing, as a priority, measures which result in the greatest benefit in the shortest time frame. For example, education and awareness campaigns, when implemented correctly, can provide good results, within short-time frames, for relatively minimal monetary investment.

8.2 RESPONSIBILITY FOR MONITORING

Implementation of the North Eastern RBMP and POM will be carried out through 26 Local Management Area action plans on a three-year rolling programme over the period 2010 – 2015.

Carrying out the Environmental Monitoring Programme will be the responsibility of NIEA. NIEA will liaise with other Departments and Agencies through the Water Framework Directive Implementation Working Group (IWG).

8.3 SOURCES OF INFORMATION FOR MONITORING

Monitoring will focus on aspects of the environment that are likely to be significantly impacted by the Plan. Where possible, indicators have been chosen based on the availability of the necessary information and the degree to which the data will allow the target to be linked directly with the implementation of the RBMP and POM. **Table 8.1** presents the Environmental Monitoring Programme

to track progress towards achieving the strategic environmental targets, and includes sources of relevant information. The required Environmental Monitoring Programme has been incorporated into a supporting document (Strategic Environmental Assessment Mitigation Measures and Environmental Monitoring Programme) to the Plan which is provided on the website www.ni-environment.gov.uk/wfd.

As shown in **Table 8.1**, the majority of information required is already being actively collected (under the WFD and other programmes), though not all of this is being gathered and reported on at a national level. It should be noted that the monitoring programme has been designed to be flexible for the express purpose of allowing the use of alternate indicators should more relevant data sources become available during the implementation and monitoring of the plan.

Table 8.1 Required Environmental Monitoring Programme for the North Eastern RBMP

Target	Indicator	Data Availability, Source and Frequency
BFF: Halt spread of Alien Species and their associated impact to the aquatic environment.	Interim Indicator: Geographical spread of Alien Species in the District	National Invasive Species Database from Invasive Species Ireland (joint project between NPWS and NIEA). Compilation is ongoing.
BFF: Halt deterioration of habitats or their associated species due to water quality related issues by 2015, in line with the Water Framework Directive. * (* This aligns with the Northern Ireland Biodiversity Strategy target to halt loss of biodiversity by 2016.)	Interim Indicator: Status of Northern Ireland Priority Species. Interim Indicator: Status of Northern Ireland Priority Habitats. Long Term Indicator: Status of EU Protected Habitats and Species. Long Term Indicator: Condition of Selection Features in sites designated for nature conservation (SACs, SPAs, Ramsar and ASSIs) (based on 6 year rolling programme).	UK Biodiversity Action Plan. NIEA. Published every 3 years. Northern Ireland Biodiversity Strategy. Published every 3 years. NIEA. 2nd UK Report on Implementation of the Habitats Directive. JNCC. Published every 6 years. Northern Ireland Environmental Statistics Report. (Central Statistics and Research Branch (CSRB) DOE. Published annually.
P: Provide adequate water and wastewater treatment infrastructure capacity to all urban and suburban areas (cities, towns and villages) within the District by 2015.	Amount of new development in urban and suburban areas where adequate water and wastewater treatment infrastructure is not in place.	Data to be sourced from DOENI, not currently centrally compiled.
P: Strictly control rural development with the provision of individual wastewater treatment units in accordance with the conditions relating to quality and quantity of effluent discharge as part of the consent to discharge effluent granted by the DOENI.	Number of domestic discharge consent conditions applications granted by NIEA with conditions formulated to ensure sustainable discharges to waterways or soakaway to underground strata.	Data to be sourced from DOENI.
P: Mapping of large unsewered populations and method development to calculate the vulnerability of receiving waters to loading of on-site systems.	Number of septic tanks mapped, calculated loads and priority areas identified.	Data to be sourced from DOENI.
HH: All drinking water areas (including groundwater), as identified on the register of protected areas, to achieve good status, or maintain high status, by the deadlines set in the RBMP.	Interim Indicator: Compliance with Drinking Water Standards. Long Term Indicator: Parameters to be measured in accordance with the environmental quality standards to determine Good Status.	Annual Drinking Water Quality Report. NIEA. Published annually.
HH: All bathing waters, as identified on the register of protected areas, to achieve good status, or maintain high status, by the deadlines set in the RBMP.	Interim Indicator: Compliance with Bathing Water Standards. Long Term Indicator: Parameters to be measured in accordance with the environmental quality standards to determine Good Status.	Northern Ireland Environmental Statistics Report. (Central Statistics and Research Branch (CSRB) DOE. Published annually.

Target	Indicator	Data Availability, Source and Frequency
HH: All economic shellfish waters, as identified on the register of protected areas, to achieve good status, or maintain high status, by the deadlines set in the RBMP.	Interim Indicator: Compliance with the Quality of Shellfish Water Regulations. Long Term Indicator: Parameters to be measured in accordance with the environmental quality standards to determine Good Status.	Reporting of Shellfish Waters Directive monitoring data to EC under standardised and rationalised reporting (Reporting Decision 95/337/EC). NIEA. Reporting every three to four years.
HH: All water bodies designated for salmonids, as identified on the register of protected areas, to achieve good status, or maintain high status, by the deadlines set in the RBMP.	Interim Indicator: Freshwater Fish Directive compliance. Long Term Indicator: Parameters to be measured in accordance with the environmental quality standards to determine Good Status.	Northern Ireland Environmental Statistics Report. (Central Statistics and Research Branch (CSRB) DOE. Published annually.
S: Reduce the number of fields with a P-index of 3 or above (i.e. with excess P).	Interim Indicator: Soil Phosphorus levels by P-Index for Managed Grassland soils.	Northern Ireland Environmental Statistics Report. (Central Statistics and Research Branch (CSRB) DOE. Published annually.
S: Achieve risk reduction targets as detailed in the Soil Directive for areas identified as at risk (not yet established).	Long Term Indicator: Monitoring programme as established under the requirements for the Soil Directive (once established).	Not yet established.
W: No deterioration in status of waters currently with high or good status (WFD Objective).	Interim Indicator: Environmental Quality Statistics relating to water quality. Long Term Indicator: Water status in 2015 report.	Northern Ireland Environmental Statistics Report. (Central Statistics and Research Branch (CSRB) DOE. Published annually. Water Status Report to published in 2015 as part of second RBMP cycle. NIEA
W: Restoration to good status of waters currently at moderate, poor or bad status (WFD Objective).	Interim Indicator: Environmental Quality Statistics relating to water quality. Long Term Indicator: Water status in 2015 report.	Northern Ireland Environmental Statistics Report. (Central Statistics and Research Branch (CSRB) DOE. Published annually. Water Status Report to published in 2015 as part of second RBMP cycle. NIEA
W: Progressively reduce chemical pollution in waters (WFD Objective).	Interim Indicator: Environmental Quality Statistics relating to water quality Long Term Indicator: Water status in 2015 report.	Northern Ireland Environmental Statistics Report. (Central Statistics and Research Branch (CSRB) DOE. Published annually. Water Status Report to published in 2015 as part of second RBMP cycle. NIEA

Target	Indicator	Data Availability, Source and Frequency
W: Limit pollution inputs to groundwaters and prevent deterioration (WFD Objective).	Interim Indicator: Environmental Quality Statistics relating to water quality.	Northern Ireland Environmental Statistics Report. (Central Statistics and Research Branch (CSRB) DOE. Published annually.
	Long Term Indicator: Water status in 2015 report.	Water Status Report to published in 2015 as part of second RBMP cycle. NIEA
AQ: Minimise total emissions to air associated with nutrient management.	Distance / number of vehicle trips used to transport nutrients; to be used as a proxy indicator for emissions associated with nutrient management activities, such as removal by tanker of slurry in areas of nutrient surplus.	Not currently compiled – monitoring of this would need to be integrated into the Waste Licences for operators of these activities. This information could be included in the Annual Environmental Report for each licensed facility.
AQ: Compliance with odour criteria to prevent deterioration in amenity beyond the site boundary as set out in license for new or upgraded wastewater infrastructure.	Number of complaints received related to odour.	Monitored by the DOENI as part of the IPPC license process. This information is usually included in the Annual Environmental Report for each licensed facility.
AQ: Compliance with odour criteria to prevent deterioration in amenity beyond the site boundary due to changes in industrial practices due to plan implementation.	Number of complaints received related to odour.	Monitored by the DOENI as part of the IPPC license process. This information is usually included in the Annual Environmental Report for each licensed facility.
C: Use BAT, including renewable energy, to minimise GHG from new or upgraded wastewater infrastructure in line with Ireland and the UK's commitments to reduce GHG emissions under the Kyoto Protocol.	Calculated CO_2 equivalent in tonnes from new or upgraded water infrastructure, e.g. WWTP / WWTW, including emissions associated with the digestion and / or incineration of sludge.	To be calculated based on changes in water infrastructure at the interim review in 2011 and the second RBMP cycle in 2015.
C: Use BAT, including renewable energy, to minimise GHG from changes in industrial practices due to plan implementation in line with Ireland and the UK's commitments to reduce GHG emissions under the Kyoto Protocol.	Calculated CO_2 equivalent in tonnes due to changes in industrial practices.	To be calculated at the interim review in 2011 and the second RBMP cycle in 2015 based on changes in industrial practices, records of which are held as part of the IPPC licence process by the DOENI.
C: No net loss of CO_2 sequestering vegetation due to changes in forestry practices as a result of Plan activity.	Calculated CO_2 sequestering potential of forest vegetation based on forest cover.	CO_2 sequestration potential could be sourced from the National Council for Forest Research and Development or similar source. Land cover information to be sourced from the Northern Ireland Forest Service.
MA1: No increase in the amount of infrastructure at risk from flooding as a result of Plan activities. In this case the length of road and rail infrastructure at risk will be used as a proxy indicator for infrastructure in general.	Interim indicator: Number of Flood Risk Management Plans prepared in accordance with the Floods Directive (2007/60/EC). Long Term Indicator: Length of road and rail infrastructure at risk from flooding.	Information on number prepared to be sourced from the Rivers Agency (NI). Information flood risk to be sourced from the Rivers Agency (NI).

Target	Indicator	Data Availability, Source and Frequency
MA2: Increase investment in water management infrastructure.	Water services investment expenditure per annum.	To be sourced from Northern Ireland Water annual expenditure figures.
MA2: Achievement of the targets set out in the Investment Strategy for Northern Ireland 2008 - 2018 to upgrade water and wastewater treatment infrastructure to comply with current standards by 2014.	Progress towards completion of projects Alpha (to upgrade water treatment and delivery systems) and Omega (to upgrade wastewater treatment and sludge disposal facilities) as laid out in the Northern Ireland Investment Strategy 2008 – 2014.	To be sourced from Northern Ireland Water and Utility Regulator progress reports as they are published.
MA3: Minimise impacts to economic activity due to Plan implementation without conflicting with the objectives of the WFD.	Percent change in land cover types due to Plan implementation.	Land cover information to be sourced from Northern Ireland Countryside Survey (updated every ten years, latest survey completed in 2008, report not yet published).
MA4: Achieve sustainable use of water in the context of maintaining its economic benefit.	Change in economic value of water relative to the baseline report: The Northern Ireland Water Framework Directive Article 5 Economic Analysis of Water Use.	Economic studies carried out as a part of the plan making process during the second cycle of river basin management planning.
CH: No physical damage or alteration of the context of cultural heritage features due to Plan activities.	Changes in the condition of monuments on the SMR due to Plan implementation. Number of listed structures at risk due to Plan implementation.	Condition and Management Survey of the Archaeological Resource for Northern Ireland. NIEA. Updated on an ongoing basis. Built Heritage at Risk Northern Ireland (BHARNI) Register. NIEA and Ulster Architectural Heritage Society. Updated on an ongoing basis.
L: No damage to designated landscapes as a result of Plan implementation.	Number of water and wastewater treatment plants sited in landscapes with a high sensitivity to change. Percentage changes in land cover types in areas with a high sensitivity to change.	Data on number of new wastewater treatment plants to be sourced from Northern Ireland Water Northern Ireland Countryside Survey (updated every ten years, latest survey completed in 2008, report not yet published).

9 CONCLUSION AND NEXT STEPS

The SEA and HDA processes carried out during the preparation of the North Eastern RBMP and associated POM have ensured that the potential significant environmental impacts associated with implementation of the Plan have been identified and that they have been given appropriate consideration. Consultation on the draft Plan, Environmental Report and HDA Report has further contributed to the development and finalisation of the North Eastern RBMP.

It is envisaged that monitoring and reporting of environmental impacts, both positive and negative, resulting from implementation of the North Eastern RBMP and POM will continue over the course of the 6-year cycle for the Plan. The data collected can be used in the next cycle to facilitate a review of progress on implementation and effectiveness of the RBMP and POM and to feed into the SEA for the second cycle of the RBMP process.

10 ADDENDUM TO THE ENVIRONMENTAL REPORT

10.1 INTRODUCTION

This is the addendum to the Environmental Report for the draft River Basin Management Plan and associated Programme of Measures for the North Eastern River Basin District, hereafter referred to as the draft Plan. This document serves several purposes: a) to provide clarification and/or additional information following requests in the submissions received during the 6-month consultation period on the draft Plan and Environmental Report; and b) to identify where the Environmental Report has been updated in response to submissions received during the public consultation period, with the exception of minor amendments, clarifications and typographical corrections. It should be noted that this document supplements and should be read in conjunction with the Environmental Report.

It should be noted that the clarifications and additional information contained herein (shown in *italicised text*) have been provided in order to increase the usefulness of the document for the public and decision makers but are not to such an extent that it will require changes to the content or outcome of the assessment contained within the Environmental Report.

10.2 AMENDMENTS AND ADDENDA BY CHAPTER

10.2.1 Non-technical Summary

Additional information is provided on p. iii regarding the timelines for the second and third River Basin Management Plan cycles.

> *In certain circumstances the draft Plan considers the timeline horizons of 2021 and 2027, being the end of the second and third 6-year Plan cycles, respectively. These longer-term horizons are necessary where good status or good potential or indeed LSO (less stringent objectives) cannot be achieved by 2015 or where measures to achieve these are deemed technically infeasible or disproportionate in cost.*

Additional detail regarding issues of concern relating to water in the NERBD has been added on p. v.

> The Plan outlines measures to tackle key water pressures in the District. Some issues of concern in the District for which measures are proposed in the draft Plan include: spread of invasive alien species; pressure on fisheries; presence of heavily modified and artificial water bodies; point and diffuse pollution *from wastewater treatment plants, licensed discharges,*

> *mines, landfills, quarries and contaminated lands*; agriculture; unsewered properties; forestry; physical modifications; and abstraction.

Clarification is provided in Table 2 on p. vii under the heading of Material Assets:

> Increased development including residential and industrial expansion continues to put pressure on existing water sources with regards to quantity as well as on the treatment facilities used to treat both *raw water for drinking and other purposes* and wastewater. In addition, existing water quality issues are resulting in pressures on economic shellfish and aquaculture activities along with fisheries used for recreational purposes. Some of the physical modifications identified as material assets, such as dams and weirs, may also be resulting in pressures on fisheries used for recreational and commercial purposes.

On p. viii, the reference to the 2007 Significant Water Management Issues or SWMI document has updated to *Water Matters – Have Your Say*. This update has been made throughout the document.

On p. xiii, the reference to Appropriate Assessment has been changed for clarity to: *the assessment carried out under Article 6 of the Habitats Directive (92/43/EEC).* This update has been made, where applicable, throughout the document. A reference has also been added regarding the provision of the recommended mitigation measures in **Chapter 10** of the Environmental Report.

10.2.2 Chapter 1: Introduction

Reference to information sources regarding delineationg of the NBIRBD boundary is provided on p. 2:

> *For information on how the boundary of the North Eastern RBD was determined see the information on the North Eastern RBD website (www.nerbd.com). The Northern Ireland Environment Agency is the competent authority for the NERBD.*

10.2.3 Chapter 2: Methodology

Additional information is provided in Table 2.1 on p. 8 regarding the timelines for the second and third River Basin Management Plan cycles.

> The RBMP and POM will cover the period from 2009 up to 2015, with an interim review after three years. *However, the Plan also considers the horizons of 2021 and 2027, which are the end of the second and third 6-year plan cycles, respectively*.

Additional information on the report *Preparing for Climate Change in Northern Ireland* has been added to Section 2.3.1.2 on p. 8.

> *The report* Preparing for Climate Change in Northern Ireland*, published by the Department of the Environment and the Scotland and Northern Ireland Forum for Environmental Research (2007) reviewed the potential impact of climate change in Northern Ireland and makes recommendations for adaptation. This report includes an initial assessment of threats to water management and resources in Northern Ireland and was used in the draft Plan to identify generic actions to address the impact of climate change on the water environment. These generic actions ensure that waters are protected from deterioration due to climate change and that climate change factors are taken into account both in terms of mitigation and adaptation when developing and implementing measures to improve the water environment.*

Additional information on the Floods Directive has been added to Section 2.3.1.3 on p. 9, including information on its timing of transposition into the national legislation and a brief summary of what is required as part of its implementation.

> *The Directive came into force in November 2007 and is required to be transposed into law before 26 November 2009. The Directive requires Member States to first carry out a preliminary assessment by 2011 to identify the river basins and associated coastal areas at risk of flooding. For such zones they would then need to draw up flood risk maps by 2013 and establish flood risk management plans focused on prevention, protection and preparedness by 2015. The Directive applies to inland waters as well as all coastal waters across the whole territory of the EU.*

Clarification as to the type of assessment carried out under the Habitats Directive is provided in Section 2.4 on p. 12.

> *It is important to note that the phrase 'Appropriate Assessment' is sometimes used more loosely to refer to the whole process set out under Articles 6(3) and 6(4) of the Habitats Directive. Therefore, it is important to note that in this case the term Habitats Directive Assessment will be used, not 'Appropriate Assessment' (which refers to Stage 2 in the sequence under Habitats Directive Assessment)*. A *Habitats Directive Assessment* of the RBMP and POM was carried out in parallel with the SEA and Plan processes, with the findings of the *Habitats Directive Assessment* used to guide the development of the alternatives to be considered as part of the SEA.

10.2.4 Chapter 5: Baseline Environment

Additional information regarding the potential impacts to water quality from landfills, quarries, mines and contaminated sites has been added to Section 5.3.3.4 on p. 37:

> Waste disposal sites (including old un-lined landfills), quarries, mines, gasworks sites and industrial lands produce lesser discharges to waters than wastewater plants and industries; however subsurface residues or waste products *from previous activities may have seeped into the ground* and continue to threaten groundwater and surface waters. *The key threat to waters from these sites is potential contamination from pollutants (mainly dangerous substances, for example metals and fuel). These chemicals may travel through groundwater and enter surface waters, affecting the quality of both, damaging aquatic plants and animals and impairing water uses*.

More detail regarding the sources of nutrient enrichment in water from agriculture has been added to Section 5.3.3.4 on p. 39:

> These are enrichment of water by nutrients (phosphorus and nitrogen), *from substances such as fertilisers (both organic and inorganic) as well as erosion of nutrient enriched soils*, and organic pollution from animal slurry/manure and silage effluent.

Additional information regarding the potential impacts to water quality from Forestry activities has been added to Section 5.3.3.4 on p. 39.

> *Forestry can cause also acidification of water through the capture of sulphur and nitrogen compounds from the atmosphere by forest canopies. Rain become more acidic as it passes through the canopies into the ground below and may worsen the chemical balance of receiving waters. Nutrient enrichment can also occur through the introduction of extra nutrients, which in naturally nutrient–poor areas, can lead to problems such as algal growth. Road-making and stream crossing as well as felling activities can cause erosion and sedimentation on susceptible soils, reducing water quality. Incorrect pesticide usage can also result in contamination of waters.*

Additional detail as to the Air Quality Standards Regulations (Northern Ireland) 2007 has been added to Section 5.3.4.1 on p. 40:

> The Department of the Environment in Northern Ireland has also published the Air Quality Standards Regulations (Northern Ireland) 2007, *which implemented the requirements of the fourth daughter Directive on heavy metals and PAHs (polycyclic aromatic hydrocarbons) as well as replacing the Air Quality Limit Values Regulations (Northern Ireland) 2002 (S.R. 2002*

No. 94) and the Air Quality (Ozone) Regulations (Northern Ireland) 2003 (S.R. 2003 No. 240), which implemented the third daughter directive on ozone.

Additional detail as to the number and location of continuous air monitoring stations has been added to Section 5.3.4.1 on p. 41.

There is continuous monitoring carried out throughout the island, with *some 17 monitoring stations in the NERBD, many of which are in the urban areas of Belfast*.

Further background cultural heritage information is provided in Section 5.3.5.1 on p. 43:

The period when hunter/fishers dominated Europe is known as the Mesolithic. During the Mesolithic people usually moved about following the seasonal migrations of animals like the red deer or attempting to catch fish, such as salmon, in their annual runs upriver. Numerous Mesolithic sites are known to be located in the NERBD.

The second major colonisation of Ireland began with the arrival of new people that changed the face of the landscape through farming. By far the most common and spectacular monuments of the Neolithic period are its tombs. In addition to tombs, there are other stone monuments, which are believed to have been erected towards the end of the Neolithic. The most impressive are the stone circles, with a number found in the NERBD.

More detail regarding water environments as sources of archaeological material has been added to Section 5.3.5.7 on p. 45:

This is particularly important, as water environments are often an important source of previously unknown archaeological material, as they can preserve organic matters often missing from dry-land sites. For example, the rivers of the NERBD, including the Quoile, are potentially rich in previously unknown archaeological features, as both settlement and ritual activity (in the form of the deposition of artefacts) are often associated with these.

Further information has been added to Section 5.3.81 Soils, on p. 50:

In Northern Ireland, the Department of the Environment has proposed the implementation of a contaminated land regime contained in Part III of the Waste and Contaminated Land (NI) Order 1997 to cover the determination and remediation of contaminated land. The regulations, and guidance for their implementation (when published), will bring into force a framework for the identified and remediation of land where contamination causes unacceptable risks. Some 12,000 sites in Northern Ireland have so far been identified as being used for some purpose, which could potentially have caused contamination. The

redevelopment of such land must be carefully managed to ensure that the contamination does not pose a threat to human health and the environment.

Additional information on the report *Preparing for Climate Change in Northern Ireland* has been added to Section 5.4 on p. 55.

In the areas of water resources and conservation, biodiversity and habitats the potential adaptation strategies identified included:

- *Review of legislation to assess whether it will provide sufficient protection for priority/designated habitats in a changing climate and to identify whether revisions may be required.*
- *Review of monitoring to assess whether existing systems are sufficiently sensitive to the effects of a changing climate and identify where new systems may be required.*
- *Education and awareness: particularly focussed on the human impact on species and habitats and the scale of the likely impacts of a changing climate.*
- *More detailed modelling of impacts on NI water resources, addressing long-term impacts on supplies, environment and water quality.*
- *Further development of adaptive actions already identified, many of which include wider environmental benefits. Some adaptation may be realised through compliance with the Water Framework and Nitrates Directives.*
- *Ensure risks and adaptation are adequately represented within long term planning for water resources. Adaption costs can be minimised by maintaining and improving current infrastructure.*
- *Changes to the planning processes and regulatory framework for the water sector in NI will provide opportunities for the development of adaptive planning.*

The legends for Figures 5.4, 5.6 and 5.8 have been amended for clarity.

10.2.5 Chapter 6: Review of Relevant Policies, Plans and Programmes

Information has been added to Table 6.2 on p. 75 regarding the Framework Directive on the sustainable use of pesticides.

Human Health	*Framework Directive on the sustainable use of pesticides (Draft)*	*The Directive will establish a framework which will promote 'best practice' in the storage, use and disposal of pesticides, and their packaging. Key features include: the establishment of national action plans; compulsory testing of spray machinery and certification of spray operators, distributors and advisors; a ban (subject to derogations) on aerial spraying; special measures to protect the aquatic environment, public spaces and special conservation areas; minimising the risk of pollution through handling, storage and disposal; and the promotion of Integrated Pest Management (IPM).*	*The measures included under this Directive (once adopted) should be considered for incorporation into the River Basin Management Plan when it is updated in 2015*	*The measures included in the POM include a. suite of measures aimed at maintaining/ improving water body status through the sustainable use of pesticides.*

Information has been added to Table 6.2 on p. 78 regarding the EU Environmental Liability Directive.

Water	*The EU Environmental Liability Directive (2004/35/EC)*	*The main objectives include the application of the "polluter pays" principle for environmental laibility. This Directive establishes a common framework for liability with a view to preventing and remedying damage to animals, plants, natural habitats and water resources, and damage affecting the land.*	*The Plan should aim to prevent or remedy damage to animals, plants and natural habitats through interaction with water resources. The impacts of the Plan on these receptors are largely expected to be positive due to the water quality objectives included in the Plan.*	*Many of the measures included in the POM are aimed at reducing pollution discharges to water, in part to prevent and remedy damage to animals, plants, natural habitats and water resources.*

Information has been added to Table 6.3 on p. 84 regarding the Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009 (SR 252 of 2009).

Water	*The Environmental Liability (Prevention and Remediation) Regulations (Northern Ireland) 2009 (SR 252 of 2009)*	*Place obligations on operators to prevent environmental damage and, where such damage has occurred, the operator is required to control, contain, remove or manage contaminants or causes of damage. Give effect to provisions of EU Liability Directive 2004/35/EC.*	*See EU Liability Directive.*	*See EU Liability Directive.*

Information has been added to Table 6.3 on p. 85 regarding the Pollution Prevention and Control Regulations (Northern Ireland) 2003 (SR 46 of 2003) as amended.

Water	*The Pollution Prevention and Control Regulations (Northern Ireland) 2003 (SR 46 of 2003) as amended*	*Establish a pollution control system to regulate industrial activities and other installations that have a major impact on the environment. Aim to reduce pollution by monitoring business activities that cause pollution. These regulations implement the EC IPPC Directive (96/61/EC) in Northern Ireland.*	*See EU IPPC Directive.*	*See EU IPPC Directive.*

10.2.6 Chapter 8: Alternatives

A reference has been added to Tables 8.3 to 8.13 linking these tables to the appendix to Chapter 8 for additional information on which measures are being considered in each jurisdiction.

10.2.7 Chapter 9: Assessment

A reference has been added to Tables 9.3 to 9.11 linking these tables to the detailed assessment in the Appendix to Chapter 9.

The following summarises the cumulative/synergistic effects identified as a result of Plan implementation. This section should be read in conjunction with Section 9 and the Appendix to Section 9.

> *The primary cumulative/synergistic impacts that have been identified include cumulative improvements in water quality leading to positive cumulative impacts to aquatic biodiversity, flora and fauna, both within EU designated sites and the RBD as a whole. With regards to negative impacts, cumulative impacts to air quality and climate have been identified due the potential for a number of alternatives to result in increased emissions to air from transport-related activities and processing of waste materials, e.g. sludge. However, some of this can be offset by use of renewable energy sources and capture of CH_4 for reuse as a fuel source.*
>
> *Also, a number of alternatives call for the construction of new or upgraded infrastructure. Cumulatively, the increased energy use from these projects could result in increased emissions of GHG, potentially contributing to climate change. This cumulative impact could be mitigated through the use renewable energy to fuel new infrastructure projects. In addition, new or upgraded infrastructure could result in potentially cumulative negative impacts to biodiversity, landscape and cultural heritage if these are sited poorly. Consideration of the wider environment prior to siting new infrastructure will greatly reduce this potential cumulative impact.*

A number of the physical modifications alternatives have considerable potential to improve the environment individually or cumulatively if implemented correctly; however, the potential for negative impacts to cultural heritage, landscape and biodiversity from these alternatives is dependant on the methodology in which they are implemented.

The cost associated with implementation of many of the alternatives could result in potential cumulative negative impacts to both individuals and local authorities, for which no mitigation may be available. However, cumulative positive impacts would be experienced by those economic sectors reliant on good water quality (residential, service, tourism, angling, etc.).

In addition, some of the alternatives may result in changes in land use or development patterns. While, these changes are expected to make a significant contribution to sustainable development in the RBD, they could also result in cumulative negative impacts. For example, changes could occur in the composition of rural communities should new generations of families that have resided in areas historically, no longer be able to continue to build individual residences on the family holding due to restrictions on siting of on-site wastewater treatment systems. In addition, limitations on forestry in sensitive areas could impact on the economic value of forests as well as reduce the potential for carbon sequestration, cumulatively impacting on Ireland's climate change commitments.

10.2.8 Chapter 10: Mitigation and Monitoring

A reference has been added in Section 10.3 on p. 155 linking the mitigation measures contained in Table 10.2 to the detailed assessment in the Appendix to Chapter 9.

Please see the Appendix to Chapter 9, which provides the detailed assessment of alternatives and the rationale behind the development of these mitigation measures.

Two additional references have been added on p. 201:

Environmental Protection Agency (2005b). The Nature and Extent of Unauthorised Waste Activity in Ireland.

Environmental Protection Agency (2005a). Water Quality in Ireland 2005: Key Indicators of the Aquatic Environment.

10.2.9 Appendix to Chapter 6: Other Plans, Programmes and Policies of Relevance

Information has been added to Table 1 regarding the European Landscape Convention.

Landscape	*The European Landscape Convention (Council of Europe ETS No. 176)*	*Objectives are the protection, management and planning of European landscapes.*	*The impact of the Plan on landscapes is largely expected to be associated with site level impacts (e.g. construction of new infrastructure). The favouring of sites and measures that carry a lower risk of impacts to landscape could be emphasised in the Plan.*	*The requirement to carry out environmental impact assessment, including landscape assessments prior to implementation of specific items in the POM is aimed at addressing the objectives of this Convention.*

APPENDIX A

Summary of Environmental Assessment for Measures included in the draft North Eastern River Basin Management Plan

Table 1 Key to Assessment of Alternatives

Assessment Symbol	Explanation of Symbol
+	Positive Impact
-	Negative Impact
+ / -	Both positive and negative impacts or unclear in the absence of further detail
0	Neutral or no impact

Table 2 Summary of Assessment: Measures under the Existing 11 Directives and the Other Required Article 11(3) Measures or Basic and Other Basic Measures

Measure	BFF	P	HH	S	W	AQ	C	MA1	MA2	MA3	MA4	CH	L
Review of Licensing Controls (DIR4)	+ / -	+	+	+ / -	+	+ / -	+ / -	0	+	+/-	+	0	0
Changes in Land Use Planning (DIR5)	+ / -	+	+	+ / -	+	+ / -	+ / -	0	+ / 0	+ / -	+	0	0
Infrastructural Requirements (DIR6)	+ / -	+	+	+ / -	+	+ / -	+ / -	0	+	-	+	+ / -	+ / -
Cost recovery for water use & promotion of sustainable water use (WFD1)	+	+	+	+	+	0	+	0	+	-	+	+	0
Protection of Drinking Water Sources (WFD2)	+	+	+	+	+	0	0	0	0	+ / -	+	0	0
Abstraction and impoundment control (WFD3)	+ / -	+	+	+ / -	+	-	-	0	+	+ / -	+	+ / -	+ / -
Point source and diffuse source discharge (WFD4)	+ / -	+	+ / -	+ / -	+	0 / -	0 / -	0	+	-	+	+ / -	+ / -
Controls on physical modifications to surface waters (WFD5)	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -	+ / -
Prevention or reduction of the impact of accidental pollution incidents (WFD6)	+ / -	+	+	+ / -	+	+	0	+	+	+	+	+ / -	+ / -
Authorisation of discharges to groundwater (WFD7)	+	+	+	0	+	0	0	0	0	+ / -	+	0	0
Priority substance control (WFD8)	+ / -	+	+ / -	+ / -	+ / -	+ / -	+ / -	0	+	+ / -	+	+ / -	+ / -
Controls on other activities impacting water status (WFD9)	+ / -	+	+	+	+	0	0	0	0	-	+	0	0

Key: BFF – Biodiversity, Flora and Fauna; AQ – Air Quality; C – Climate; W – Water; MA – Material Assets; L – Landscape; P – Population; HH – Human Health; S – Soils; CH – Cultural Heritage

See Section 9.1 of the Environmental Report for further detail on what is included in DIR4 to 6 and Table 8.2 for further detail on measures WFD1 to 9

Table 3 Summary of Assessment: Supplementary Measures considered in the draft North Eastern RBMP and POM

Measure	BFF	P	HH	S	W	AQ	CC	MA1	MA2	MA3	MA4	CH	L
Wastewater (Key Sector: Collection and Treatment of Sewage / Urban Development)													
WW7: Reduce loading by introduction of phosphate free products	+/-	+	+	+	+	0	0	0	+	+/-	+	0	0
Industrial Discharges (Key Sector: Industry and Other Businesses)													
IND2: Develop oil storage regulations to reduce pollution impacts	+	+	+	+	+	0	0	0	0	+ / -	+	0	0
IND3: Achieve compliance with discharge consent / licence standards to reduce inputs at source	+	+	+	+	+	0	0	0	0	+ / -	+	0	0
IND4: Compile an inventory of management best practice and reduce peat usage	+	0	+	+	+	+/-	+/-	0	0	-	+	+/-	+
IND7: Improve point source discharge controls after examination of the cumulative impact of discharge consents at a catchment scale	+	+	+	+	+	0	0	0	+	+ / -	+	0	0
Other sources (Key Sector: Industry and Other Businesses/ Waste)													
OP2: Reduce pollution arising from waste management, e.g. use of Site Waste Management Plans, proper disposal of construction, demolition and electrical wastes, segregated collection	+	+	+	+	+	+ / -	+ / -	0	0	0	+	0	+
OP3: Introduce a Quality Protocol for the production of aggregates from inert waste to prevent water pollution from contaminated material	+	+	+	+	+	+	+	0	0	+/-	+	0	0
OP4: Reduce illegal disposal of waste	+	+	+	+	+	+ / -	+ / -	0	0	0	+	0	+
Agriculture (Key Sector: Agriculture)													
AG2: Adoption of Best Management Practices to reduce phosphorus inputs, e.g. use of feedstuffs designed to minimise phosphorus excreta	+/-	+	+	+	+	-	-	0	0	-	+	0	0
AG8: Increase participation in rural environmental protection schemes / other agri-environment schemes, e.g. NPWS farm plans, particularly in priority catchments and focus advice and regulatory action in areas where there is a lower uptake in agri-environment schemes	+	+	+	+	+	0	0	0	0	-	+	+	0

Measure	BFF	P	HH	S	W	AQ	CC	MA1	MA2	MA3	MA4	CH	L
AG11: Phosphorus balances on individual holdings to be introduced on a phased basis	+/-	+	+	+	+	+/-	+/-	0	+	+ / -	+	0	0
Wastewater from Unsewered Properties (Key Sector: Collection and Treatment of Sewage)													
UP4: Change current policy and guidance to improve existing controls and modify development control and enforcement practices to reflect restrictions if required	+	+	+	+	+	0	0	0	+	-	+	0 / -	0
UP5: Reduce loading by introduction of phosphate free detergents	+	+	+	+	+	0	+	0	+	0	+	0	0
UP7: Following mapping of vulnerable areas, where water quality is threatened alternate treatment options, such as providing mains sewers or tank maintenance programmes, may be investigated	+ / -	+ / -	+ / -	+	+	+ / -	-	0	+	+ / -	+	0 / -	0 / -
Physical Modifications (Key Sector: Freshwater Morphology / Marine Morphology)													
PM6: Channelisation impact remediation schemes, such as re-meandering of straightened channels, reconstruction of pools, substrate enhancement, removal of hard bank reinforcement/revetment or replacement with soft engineering solution	+ / -	0/-	0/-	+ / -	+	0	-	-	0	+ / -	+ / -	0 / -	0 / -
PM7: Over-grazing remediation, such as stabilisation of river banks	+ / -	0	0	+	+	0	0	0	0	+ / -	+	0 / -	0 / -
PM9: Strategically appraise significant barriers to fish movement and introduce impassable barriers remediation schemes, such as fisheries enhancement schemes, reopening of existing culverts, removal of impoundment and de-silting of impounded reach, desiliting of affected river reaches, removal of barriers to fish migration, updating of existing fish passes and construction of new fish passes	+ / -	+ / -	+ / -	+ / -	+	0	-	-	0	+ / -	+ / -	0 / -	0 / -
Abstractions (Key Sector: Abstraction and Flow Regulation)													
AB5: Assess compliance of monitored abstractions and compensation flows with licence conditions	+	+	+	+	+	0	+	0	0	+	+	+ / -	0

***Key**: BFF – Biodiversity, Flora and Fauna; AQ – Air Quality; C – Climate; W – Water; MA – Material Assets; L – Landscape; P – Population; HH – Human Health; S – Soils; CH – Cultural Heritage*