

Water Resource Management Plan

Strategic Environmental
Assessment

**Post Adoption SEA
Statement**

March 2012

5079991/264/DG/095

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Glossary of Acronyms

Term	Description
ALC	Active Leakage Control
AIR09, AIR10	Annual Information Return 2009, Annual Information Return 2010
AISC	Average incremental social cost
AONB	Area of Outstanding Natural Beauty
AQMA	Air Quality Management Area
Aquator	Water resource modelling application
ASSI	Area of Special Scientific Interest
BAG	Benefits assessment guideline
BEP	Bad Ecological Potential
BFI	Base flow index
Capex	Capital expenditure
CCDeW	Climate change and demand for water report
CCNI	Consumer Council for Northern Ireland
CoP	Code(s) of Practice
DAF	Dissolved air filtration
DARD	Department of Agriculture & Rural Development
DC	Demand centre
DCAL	Department of Culture Arts and Leisure
DCENR	Department of Communications Energy and Natural Resources (RoI)
DECC	Department of Energy and Climatic Change
DI	Distribution input
DMA	District Meter Area
DO	Deployable output
DOE	Department of the Environment
DoEHLG	Department of Environment, Heritage and Local Government (RoI)
DRD	Department for Regional Development
DYAA	Dry year annual average
EA	Environment Agency (England and Wales)
EBSA	Economics of balancing supply and demand

Term	Description
EHS	Environment and Heritage Service (superseded by NIEA)
EIA	Environmental Impact Assessment
ELL	Economic level of leakage
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Agency (RoI)
ES	Environmental Statement
GAC	Granulated activated carbon
GEP	Good Ecological Potential
GHG	Greenhouse gases
GoCo	Government Company
HRA	Habitats Regulation Assessment
HMWB	Heavily Modified Water Body
IROPI	Imperative Reasons of Overriding Public Interest
LCA	Landscape Character Area
LFE	Low Flows Enterprise software
LGD	Local Government District
l/h/d	Litres per head per day – unit of per capita consumption
LoS	Levels of Service
LTA	Long term average
LRMC	Long-run marginal cost
MEP	Moderate Ecological Potential
MILP	Mixed integer linear program
MI/d	Mega litres per day (million litres per day)
MLE	Maximum likelihood estimation
NEP	National Environment Programme (England & Wales)
NIAUR	Northern Ireland Authority for Utility Regulation
NIEA	Northern Ireland Environment Agency
NISRA	Northern Ireland Statistics and Research Agency
NIW	Northern Ireland Water
NNR	National Nature Reserve
NPV	Net present value
NYAA	Normal year annual average
OD	Ordnance Datum

Term	Description
Opex	Operational expenditure
PC10	Price Control 2010
PC13	Price Control 2013
PCC	Per capita consumption
PCN	Potato Cyst Nematode
PEP	Poor Ecological Potential
PET	Potential evapotranspiration
Planning period	5-year regulatory planning periods, starting in 2013–18
PPG	Pollution Prevention Guideline
PPP	Public Private Partnership
PPS	Planning Policy Statement
PR09	Periodic Review 2009 (England and Wales)
PWD	Potato Wart Disease
Q4	4 th quarter of the Financial Year (January to March)
R&D	Research and development
RBMP	River Basin Management Plan
RDS	Regional Development Strategy
ROI	Region of Influence
SAC	Special Area Conservation
SBP	Strategic Business Plan
SEA	Strategic Environmental Assessment
SEPA	Scottish Environmental Protection Agency
SIC	Standard Industrial Classification
SPA	Special Protection Area
SPL	Supply pipe leakage
SuDS	Sustainable Drainage System
TMM	Trunk mains model
TPO	Tree Protection Order
UKCIP02	UKCIP 2002 climate projections
UKCP09	UK Climate Programme 2009
UKTAG	UK Technical Advisory Group
UKWIR	UK Water Industry Research Ltd
WAFU	Water available for use
WDMS	Water Demand Management Strategy

Term	Description
WFD	Water Framework Directive
WG	Weather generator
WRMP	Water Resources Management Plan
WRP Table	Water Resource Plan Table
WRS 2002	Water Resources Strategy 2002–2030, published in January 2003
WRZ	Water resource zone
WTW	Water treatment works
WWTW	Wastewater treatment works

Contact Details

As required under the terms of the 'The Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004' (Statutory Rule 2004 No.280) a copy of the Water Resources Management Plan, its accompanying Environmental Report and SEA Statement containing the following particulars:

- How environmental considerations have been integrated into the plan or programme;
- How the environmental report has been taken into account;
- How the opinions expressed in response to the invitations mentioned in regulation 12 have been taken into account;
- How the results of any consultations entered into under regulation 13(4) have been taken into account;
- The reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and
- The measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme

are available for inspection by the public at all reasonable times and free of charge.

As such these documents can be examined at the following address:

Water Policy Division
Department for Regional Development
Clarence Court
10-18 Adelaide Street
Belfast
BT2 8GB

Alternatively a copy of the above mentioned documents can be viewed at the following web address:

<http://www.niwater.com/>

If there are any difficulties experienced in obtaining access to the documents noted above, please contact the Water Policy Division by one of the following methods:

- Via email: waterpolicy@drdni.gov.uk
- Via post: At the address noted above
- Via phone: 028 9034 6222 (ask for Water Policy Division)
- Via fax: 028 9034 6225 (mark fax FAO Water Policy Division)
- Via Text-Phone 028 9065 0642 (for audio impaired users only)

Key Facts

Name of Responsible Authority: Northern Ireland Water

Title of Plan/Programme: Water Resources Management Plan (WRMP)

Plan purpose: The overall objectives of the WRMP are to ensure that the supply of water for the 25 year period, subsequent to the publication of the plan and the provision of the required funding, is achieved in a manner that provides a balance between supply and demand taking account of economic cost, as well as social and environmental impacts.

What prompted the plan: NI Water is the appointed statutory undertaker for the supply of water and sewerage services to the population of Northern Ireland. In accordance with the Water and Sewerage Services Order (Northern Ireland) 2006 (the 2006 Order), NI Water has a duty to produce and maintain a Water Resources Management Plan as set by Article 70 of the 2006 Order.

The WRMP is used to manage and develop water resources to ensure that NI Water continues to be able to meet its statutory duties under the 2006 Order. In accordance with statute the WRMP formally documents:

- NI Water's estimate of the quantities of water needed to meet its obligations in accordance with the 2006 Order;
- The measures which NI Water intends, or will continue to take, to meet its obligations under the 2006 Order; and
- The likely schedule of activities that will need to be taken to implement the measures required to comply with the WRMP and the 2006 Order.

In addition to the statutory requirement, the WRMP will also inform the strategic management of the water resource system, underpin the Annual Information Returns to Northern Ireland Authority for Utility Regulation (NIAUR) and provide data/information for the price-control process.

Plan topic: Potable Water Supply - it should be noted that despite the title of the legislation under which a WRMP is produced, it is not the role of a WRMP to examine the provision of sewerage services. Therefore this plan is concerned solely with the provision of treated potable water and provides the high-level framework for water resource planning. The WRMP does not alone provide the case for strategic investment decisions; rather it sets the framework at the Water Resource Zone (WRZ) level within which such decisions should be taken. Investment at smaller spatial scales will still need to be justified through other more local studies, such as trunk main studies, detailed zonal studies and targeted leakage initiatives.

Period covered by Plan: 25 year period subsequent to the publication of the plan.

Frequency of Plan updates: There will be a formal review at least every 5 years (or before if there is a 'Material change of circumstances'), with a short review held annually.

Plan area: The WRMP covers the geographical area serviced by Northern Ireland Water operations and for the purposes of the SEA should be considered as equivalent to the area of Northern Ireland (excluding Rathlin Island and other offshore islands).

Summary of nature / content of plan: This plan examines the current potable water supply system within Northern Ireland, determines current consumption levels and projects future anticipated demand. As part of this study, current water supply sources have been examined in order to assess their deployable output under current abstraction licence conditions. An examination has also been made of potential future water supply sources and estimates have been made of anticipated capital investment needs.

Date adopted: February 2012

Contact name & job title: Mr Alan Crilly, Clean Water Asset Strategy Manager, Northern Ireland Water, Westland House, Old Westland Road, Belfast, BT14 6TE

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1. Introduction

Northern Ireland Water (NI Water) is the organisation responsible under law for the supply of drinking water to the population of Northern Ireland. As part of its statutory duty, NI Water must produce and maintain a Water Resources Management Plan (WRMP). The WRMP sets out the following:

- NI Water’s estimate of the quantities of drinking water required to meet the needs of the population of Northern Ireland over the period for which the plan is effective (the 25 years between 2008/09 and 2034/35);
- The measures which NI Water intends, or will continue to take, in order to supply the estimated required quantity of drinking water; and
- The schedule of activities that will be needed to be taken to implement the WRMP.

Therefore the WRMP examines the current drinking water supply system within Northern Ireland, through analysis of the water available under existing abstraction licence conditions, of current consumption levels and projections of future anticipated demand.

As Northern Ireland Water is deemed to be the ‘Responsible Authority’ in this instance (in relation to the development of a Water Resources Management Plan) it was the judgement of NI Water that the plan is to be prepared for the purposes of water management, that it may set a framework for future development consents that could require Environmental Impact Assessment and that its implementation could have significant environmental effects. Therefore it was Northern Ireland Water’s view that a Strategic Environmental Assessment (SEA) of the proposed Water Resources Management Plan was required.

In basic terms, and as described by Northern Ireland Environment Agency (NIEA), Strategic Environmental Assessment “is a system for incorporating environmental considerations into certain plans and programmes at an early stage of the plan or programme development”. Therefore, this SEA process has ensured that environmental considerations have been taken into account in the development of the WRMP – how this has been done is set out in this SEA Statement.

The requirement for Strategic Environmental Assessment (SEA) of certain Plans and Programmes is set out in European Directive 2001/41/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment (the “SEA Directive”). This Directive has been transposed into Northern Ireland law through ‘The Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004’ (Statutory Rule 2004 No.280).

1.1 Stages of Strategic Environmental Assessment

Successful completion of the SEA process requires the completion of several broad stages as shown in Table 1

Table 1.0 - Stages of Strategic Environmental Assessment

Stage	Purpose & Requirements	Output
Screening	Decision on need for an SEA of the WRMP	Screening Decision – in this instance it was NI Water’s judgement as the Responsible Authority that SEA was required as implementation of the WRMP may set a framework for future development consents that could require Environmental Impact Assessment and that its implementation could have significant environmental effects
Scoping	Consideration of the context and objectives of the SEA, provide information on baseline data, identify relevant environmental issues and trends as well as define the parameters of the scope of the SEA for the purpose of consultation	Scoping Report
Assessment of potential environmental impacts	Within the context and parameters identified at the Scoping Stage and set out in the Scoping Report an assessment of likely environmental impacts of implementation of Options identified in the WRMP is carried out. This assessment includes consideration of alternatives to the Plan.	Environmental Report
Consultation	Consulting the public and other bodies on the Draft WRMP and Environmental Report. Consultation responses are considered to determine what changes (if any) to the Draft WRMP are required for the Final WRMP. The Environmental Report is not revised in light of the consultation, but the actions taken are set out in the SEA Statement.	SEA Statement
Monitoring and Implementation of the Plan	Development of aims and methods for monitoring in order to establish if impacts are as predicted and responding to any unforeseen adverse effects.	The monitoring regime is detailed in the SEA Statement but will be carried out over the plan period. The monitoring data collected will aid in any future review / revision of the SEA

This SEA Statement represents the output of the Consultation Stage of the SEA process. As such, this SEA Statement provides detail on the consultation responses received in relation to the Environmental Report (Atkins Report 5079991/264/DG/057 Rev.2 October 2010) and how these consultation responses were interpreted in the context of the WRMP process. This SEA Statement also provides detail on how environmental considerations have been integrated into the Water Resource Management Plan.

The SEA Statement provides commentary on why the reasons for choosing the options in the Final WRMP, in light of other reasonable alternatives and will give further detail on the measures that are to be taken to monitor significant environmental effects of the implementation of the WRMP.

As noted above, the SEA Directive has been transposed into Northern Ireland law through ‘The Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004’

(Statutory Rule 2004 No.280). These regulations state the following (Part IV Regulation 15) in relation to the information to be provided as to adoption of the plan or programme (in this case the WRMP):

15.—(1) *As soon as reasonably practicable after the adoption of a plan or programme for which an environmental assessment has been carried out under these Regulations, the responsible authority shall –*

(a) make a copy of the plan or programme and its accompanying environmental report available at its principal office for inspection by the public at all reasonable times and free of charge; and.

(b) publish a copy of the plan or programme and of the information referred to in sub-paragraph (c) on the authority's website; and.

(c) take such steps as it considers appropriate to bring to the attention of the public –

(i) the title of the plan or programme;.

(ii) the date on which it was adopted;.

(iii) the address (which may include a website) at which a copy of it and of its accompanying environmental report, and of a statement containing the particulars specified in paragraph (4), may be inspected or from which a copy may be obtained;.

(iv) the times at which inspection may be made; and

(v) that inspection may be made free of charge.

(2) As soon as reasonably practicable after the adoption of a plan or programme –

(a) the responsible authority shall inform –

(i) the consultation body;.

(ii) where a plan or programme has been notified under regulation 13, the Department concerned.

(b) the Department concerned shall inform the Member State with which consultations in relation to a plan or programme have taken place under regulation 13(4), of the matters referred to in paragraph (3).

(3) The matters are –

(a) that the plan or programme has been adopted;.

(b) the date on which it was adopted; and.

(c) the address (which may include a website) at which a copy of –

(i) the plan or programme, as adopted;.

(ii) its accompanying environmental report, and.

(iii) a statement containing the particulars specified in paragraph (4), may be viewed, or from which a copy may be obtained..

(4) The particulars referred to in paragraphs (1)(c)(iii) and (3)(c)(iii), are –

(a) how environmental considerations have been integrated into the plan or programme;.

(b) how the environmental report has been taken into account;.

(c) how the opinions expressed in response to the invitations mentioned in regulation 12 have been taken into account;.

(d) how the results of any consultations entered into under regulation 13(4) have been taken into account;.

(e) the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and.

(f) the measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme.

The information fulfilling the requirements of Regulation 15 Sections 1 to 3 are detailed in the 'Contact Details' and 'Key Facts' sections of this SEA Statement.

This document is the SEA Statement and as such will detail the items in Regulation 15 Section 4 as highlighted in bold above.

The SEA process has included the following activities:

- Taken into account the views of the consultation bodies (see Section 6) regarding the scope and level of detail that was appropriate for the Environmental Report.
- Preparation of an Environmental Report on the likely significant effects on the environment of the Draft WRMP which included consideration of:
 - The baseline data relating to the current state of the environment
 - Links between the WRMP and other relevant strategies, policies, plans, programmes and environmental protection objectives
 - Existing environmental problems affecting the WRMP
 - The WRMP's likely significant effects on the environment (positive and negative)
 - Measures envisaged for the prevention, reduction and offsetting of any significant adverse effects
 - An outline of reasons for selecting the alternatives chosen
 - Monitoring measures to ensure that any unforeseen environmental effects will be identified allowing for appropriate remedial action to be taken
- Consulting on the Environmental Report

Therefore, this SEA Statement provides detail on how the Environmental Report and received consultation has been taken into account in making final decisions regarding the WRMP

This SEA Statement also provides a commitment to monitoring of significant environmental effects of the implementation of the WRMP. This monitoring will also identify any unforeseen adverse significant environmental effects and enable the taking of appropriate remedial action.

1.2 Geographical and Temporal Scope of the WRMP

The WRMP covers the geographical area serviced by Northern Ireland Water operations and should be considered as equivalent to the area of Northern Ireland (excluding any offshore islands, for example Rathlin Island).

There will be a formal review of the WRMP at least every 5 years (or before if there is a 'Material change of circumstances'), with a short review held annually. A review of the SEA will take place concurrent to the production of the revised WRMP (i.e. in 5 year cycles).

2. The Final WRMP

As noted above, this SEA Statement represents the output of the Consultation Stage of the SEA process. As such, this SEA Statement provides detail on the consultation responses received in relation to the Environmental Report (Atkins Report 5079991/264/DG/057 Rev.2 October 2010) and how these consultation responses have been interpreted in the context of the WRMP process. This SEA Statement also provides detail on how environmental considerations have been integrated into the Water Resource Management Plan. The SEA Statement provides commentary on the reasons for choosing the options for the Final WRMP, in light of other reasonable alternatives and gives further detail on the measures that are to be taken to monitor significant environmental effects of the implementation of the WRMP.

In the period between the Draft and Final WRMPs additional work has been undertaken which has influenced the choice of options selected for the Final WRMP:

- A review and update of deployable output (DO) calculations, taking account of more detailed information made available through the Trunk Mains Model (TMM) programme but with no further information on possible Sustainability Reductions;
- Revised WRZ leakage targets, leakage reductions and associated costs;
- A revised draft policy on customer supply-pipe repairs;
- Updated headroom calculations taking account of new baseline demand forecast with revised leakage targets and headroom uncertainty of PPP schemes;
- A review of the current status of PC10 and planning period 2013-18 strategic transfer schemes;
- A review and update of the costs of options;
- A review of previous decisions that particular sources (for example Camlough) should be abandoned; and
- The inclusion of DECC prices for carbon in the investment model.

Before examining the detail of the above, it is worth noting the main options selected in the Draft WRMP and those taken through to the Final WRMP as summarised in Table 2:

Table 2.0: Options included in the Draft and Final WRMPs

Option	Category	Proposed Option	
		Draft WRMP	Final WRMP
LN1	Increase / Decrease Abstraction from existing sources	Increase the output of Dunore Point, within the total licensed quantity for Lough Neagh.	No longer required undersupply demand balance driver
LR1	Leakage Control	Leakage reduction below current PC10 target of 166 MI/d	Revised targets for total leakage and date by which target is to be achieved
ST1 (JR342)	Planning Period 2013-18 Strategic Transfers	Castor Bay to Belfast Phase 3	No longer required under supply demand balance driver
ST2 (JG035)		Castor Bay to Newry Phase 2	Decision to implement scheme already taken under another driver
ST5 (JF017)		Killyhevlin to Dungannon	No longer required under supply demand balance driver
ST3 (JL715)		Carmony to Strabane	Not required under supply demand balance driver
TR2	Other Transfers	2 MI/d transfer from North to Central Water Resource Zone	Selected for Final WRMP
TR3		2 MI/d transfer from South to Central Water Resource Zone	Selected for Final WRMP
CL	Refurbish Existing Sources	Retain and Refurbish Camlough WTW to provide the existing output of 5 MI/d	Not required under supply demand balance driver

Although, as noted in table 2 above, some of the options detailed in the draft WRMP have now been discounted following the additional work undertaken between the Draft and Final WRMPs, it is considered that it is important to retain within this SEA Statement details of the considerations relating to options proposed in the draft WRMP but not included in the Final WRMP as these options may be revisited should circumstances change during the life span of the plan. One example of how circumstances may change that may entail reconsideration of options is if a full review of abstraction licenses in relation to requirements of the Water Framework Directive is undertaken. Note also that Options may be implemented due to other drivers – see for example the Option of a Strategic Transfer from Castor Bay to Newry (Phase 2).

Note will be made within the text of this SEA Statement as to whether the option being considered is not being proposed in the Final WRMP but may be subject to future consideration should circumstances change.

3. Habitats Regulation Assessment

In addition to the need for a Strategic Environmental Assessment, under the terms of the Habitats Directive (92/43/EEC), which is implemented in Northern Ireland through The Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 and subsequent amending regulations, there was a requirement to carry out a Habitat Regulations Assessment (also known variously as an Article 6 Assessment or Appropriate Assessment) of Options proposed in the WRMP. This requirement applies if the development of an Option proposed in the WRMP is located within, adjacent to, or likely to affect a Special Area of Conservation (SAC) or Special Protection Area (SPA). These types of site are commonly known as Natura 2000 sites. It is considered that a number of the options detailed in the Draft WRMP may have the potential to impact on a range of Natura 2000 sites. As such, a Habitats Regulation Assessment Test of Likely Significance (Stage 1 Screening) was completed.

A properly considered Habitat Regulations Assessment is a decision making tool that will assist NI Water in arriving at a robust and defensible conclusion that can be used to inform future actions, ensuring that the Natura 2000 site selection features are protected from any possible significant adverse impact.

Habitats Regulation Assessments can be broken into a staged approach as summarised in Table 3:

Table 3.0: Stages of a Habitats Regulation Assessment

Stage	Description
Stage 1 - Screening	Process which identifies likely impacts on a Natura 2000 site of a project or plan, either alone or in combination with other projects and plans and considers whether these impacts are likely to be significant. If considered significant then Stage 2 and so on should be followed.
Stage 2 - Appropriate Assessment	Consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the sites structure and function and its conservation objectives. Additionally where there are adverse impacts, an assessment of the potential mitigation of those impacts.
Stage 3 - Assessment of alternative solutions	Process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site.
Stage 4 - Assessment where no alternative solution exists and where adverse impacts remain	Assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI) it is deemed that the project or plan should proceed.

It is important to note that while the SEA process and Habitats Regulation Assessment (HRA) inform each other, they are a quite separate process and as such the HRA Test of Likely Significance (Stage 1 screening exercise) is reported separately in Atkins Report 5079991/264/DG/093.

The HRA examined each of the proposed Options contained within the Draft WRMP and their likelihood for impacting upon a Natura 2000 site. Only one Option contained within the Draft

WRMP is known at this stage to be located within a Natura 2000 site (the Option to increase abstraction from Lough Neagh at Dunore Point WTW by 10MI/d).

Increase output of Dunore Point WTW within the total licensed quantity for Lough Neagh

Proposals to increase water abstraction from Lough Neagh were considered in detail in 2005, with the results of these considerations being presented in an Environmental Statement entitled “Environmental Statement for Increased Public Water Supply Abstraction from Lough Neagh 2005 – 2015, Mott McDonald / DRD Water Service, 2005”.

As part of the studies into the proposals to increase water abstraction from Lough Neagh a Habitats Regulation Assessment was also carried out and reported in “Habitats Directive Screening and Appropriate Assessment for Increased Public Water Supply Abstraction from Lough Neagh 2005 – 2015, Mott McDonald / DRD Water Service, 2005”.

All the studies concluded that there would be no significant impact on any Natura 2000 site from the proposals to increase water abstraction from Lough Neagh and these findings were accepted by Environment and Heritage Service (forerunner to Northern Ireland Environment Agency) in a letter of 6/07/05 which stated “*the existing and proposed abstractions should not have a significant impact upon the selection features of the designated sites*”.

It is important to note that following further work undertaken since the development of the Draft WRMP it is now proposed that the option to Increase the output of Dunore Point, within the total licensed quantity for Lough Neagh is no longer required to be included within the Final WRMP, though should circumstances change, this option may be subject to future consideration.

In relation to the other Options detailed in the WRMP (Leakage Strategic and Other Transfers), the HRA concluded as follows:

Leakage reduction below current targets

In terms of Leakage Control, the proposed works could take place at any location within Northern Ireland, where leaking (or poor condition) water mains have been identified.

As the proposed works to reduce leakage could take place at any location within Northern Ireland, there is a potential for the proposed works to impact on the majority of the Natura 2000 sites located within Northern Ireland. Note that there are a small number of Natura 2000 sites where it can be confidently declared that there will be no impact from the Option to reduce leakage detailed in the WRMP – these sites include the offshore Island sites such as Rathlin Island SAC and SPA and Sheep Island SPA.

It is not possible at this stage to provide details of the necessary works e.g. distance from Natura 2000 site(s), working methods, or issues such as excavation requirements, to reduce leakage as these will only be identified following detailed technical studies. In short, the identification and repair of leaking water mains (and those of a poor condition) will take place on a rolling basis – both in response to emergency conditions / incidents and as a result of targeted condition studies and this identification will be followed by detailed technical studies of each particular locale. As such, it is not possible at this stage to identify the impacts on individual Natura 2000 sites.

However, at this stage it is possible to give generic working methodologies based on known practice from leakage reduction projects carried out to date. These generic methodologies are provided in Appendix A of the Environmental Report.

There is also already a mechanism in place within NI Water to identify Natura 2000 sites that may be impacted by work activities to reduce leakage as part of the Watermains Rehabilitation Framework. This mechanism will remain in place and be utilised during any proposed work activities to reduce leakage further. Therefore, the issue of HRA needs revisited for each leakage reduction scheme identified following the publication of the WRMP in order to identify which specific Natura 2000 sites will be impacted (if any) and what these impacts may be.

Note that as the issue of HRA will be revisited during detailed leakage scheme design, it will be necessary to check with NIEA the prevailing Condition Assessments of each Natura 2000 site that may be impacted by each particular leakage reduction scheme at that time.

Strategic and Other Transfers

Note that following further work undertaken since the development of the Draft WRMP it is now concluded that the proposed Strategic Transfers are no longer required to be included within the Final WRMP, though should circumstances change, these option may be subject to future consideration. One Option will be completed (Castor Bay to Newry Phase 2) as a decision to implement this scheme has been taken due to other drivers.

In relation to both Strategic and Other Transfers, only general scheme concepts rather than detailed route alignments are known and therefore as with the Option for Leakage Reduction, it is not possible at this stage to be precise as to the Natura 2000 sites which may be impacted by the Options for Strategic and Other Transfers, nor the level to which these impacts may occur.

Although it is not possible to identify precise routes, as the laying of large scale pipelines is a well known construction task, it is possible to identify typical environmental impacts from the construction and operation of large water pipelines.

Each of the schemes listed above would potentially involve the construction of large diameter pipeline(s) (up to 700mm diameter). Pipelines of this size require relatively large working areas (c.30m across) in order to allow for safe working conditions, excavation of the pipe trench, construction vehicle movement, storage of spoil, storage of materials and other construction related facilities / activities. Clearly the nature of the schemes also entail the respective working areas to be of considerable length and as such there is therefore a need for what is in effect a swathe of land disturbed by the construction process.

Although some of these pipeline routes are likely to be along roads and in urban areas, where impact on habitats will be more limited, there will be large lengths of pipeline constructed in rural areas and construction will therefore impact on habitats such as hedgerows, woodland (or single trees), field ditches, watercourses (of various size) and so on, as well as the species which inhabit or utilise these habitats (including of particular note, protected species).

Construction of a swathe across the landscape could also result in severance of habitat during the construction phase – for example the excavation of a pipe trench can impact directly of animal feeding routes. In short there is a potential that construction could impact on the range of biodiversity features to be found in rural areas.

However, as the construction impacts are well understood, impacts (e.g. on biodiversity) can be mitigated by adherence to the standard construction mitigation measures contained within Appendix A of the Environmental Report.

It is important to note that as with any schemes introduced to reduce Leakage, all the Options for Strategic and Other Transfers will be subject to detailed scheme design. Part of this scheme design will include issues such as precise route selection and the potential for impacts on Natura 2000 sites. As such consideration will be given to the requirements of HRA at detailed scheme design stage.

Retention of Camlough WTW

The option for Retention of Camlough WTW has not been considered further in relation to HRA as this option involves minor refurbishment and operational enhancement only at an existing WTW. This WTW will continue to operate in accordance with the procedures in place at present – i.e. there will be no changes to abstraction levels, or amount of water treated at this site.

Habitats Regulation Assessment Conclusions

It has been shown that the Option to Increase the output of from any of the WTWs covered by the Lough Neagh abstraction licence and remaining within the total licensed quantity for Lough Neagh will not have a negative impact on the Natura 2000 sites of Lough Neagh. Note since development of the Draft WRMP, this Option has been precluded from inclusion within the Final WRMP.

In relation to the Options for Leakage Reduction as well as Strategic and Other Transfers, at present there is uncertainty as to which Natura 2000 sites may be impacted and the level to which these impacts will occur. These issues can only be determined satisfactorily following a number of detailed technical studies. The requirements for Habitats Regulation Assessment will need to be revisited when more detailed feasibility studies of each individual scheme are being initiated. Note also that the potential Options for Strategic and Other Transfers have been curtailed since the development of the Draft WRMP.

4. The Environmental Baseline and Report

In order to assess the potential impact of the WRMP on the environment, it was necessary to establish a baseline against which predicted environmental impacts can be assessed and then to identify issues and trends that are related to each of the environmental interests that may be affected by the proposed plan.

It is important to note that the Northern Ireland environment and social baseline is already affected by the activities required for ensuring an adequate and robust public water supply. The current public water supply network is the result of previous water resource strategies which due to the regulatory framework in which these were completed, were not assessed for their potential environmental impact. It should be noted that it is not the purpose of the new WRMP and therefore this SEA to review in detail the previous water resource strategies that have been carried out. Rather it is recognised and accepted that the current environmental and social baseline of Northern Ireland has been affected by these strategies.

The table below illustrates what SEA Topics were identified, the key Environmental Issues, Trends and Problems identified from a review of the baseline information (i.e. what are considered to be the key Environmental Issues, Trends and Problems currently impacting the environment of Northern Ireland), how it was anticipated that these Issues, Trends and Problems would interact with the WRMP and how this has been addressed in the WRMP.

Table 4.0: Environmental problems identified in the Environmental Report

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
Biodiversity	Impact of agriculture on biodiversity	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of the impact of agriculture on biodiversity has not been addressed in the WRMP
	Impact of a growing economy & population	WRMP needs to plan for future population growth in order to meet expected demand.	The WRMP examines the current drinking water supply system within Northern Ireland, determines current consumption levels and projects future anticipated demand over the life time of the Plan (the 25 years between 2008/09 and 2034/35). Issues such as anticipated future population and economic growth are therefore integral to the development of the WRMP.
	Impact of tourism activities – at all times of year but in particular during summer months	WRMP needs to ensure adequate water supply to all parts of Northern Ireland to ensure equal opportunities for all areas to develop economically. Economic development will include development of tourism opportunities.	The WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Impact of fishing industry	No interaction of this issue with WRMP identified during development of the WRMP.	There is no interaction between the sea fishing industry and the WRMP. In terms of inland fishing it is considered that the Options contained in the WRMP will have no impact. Within the Draft WRMP there was only one Option that would increase abstraction (Option to increase abstraction from Lough Neagh at Dunore Point WTW). This Option has been shown not to have a detrimental impact on Lough Neagh and in any case, has not been brought forward to the Final WRMP. The Option to reduce leakage may have the benefit of reducing abstraction amounts though this cannot be quantified at this stage. All Options will have suitable precautions implemented to reduce the risk of pollution incidents during construction and these methods will help protect fishery interests.
	Impact of non-native species	The implementation (e.g. via construction of infrastructure) of any option identified in the WRMP may provide an opportunity for the spread of invasive species	Appendix A of the Environmental Report provides a range of generic mitigation measures to ensure that the risk of spread of invasive species and other pests due to infrastructure construction is minimised. This issue would also be considered at the detailed scheme design stage.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
Population & Economic Development	Increasing Population	WRMP needs to plan for future population growth in order to meet expected demand.	The WRMP examines the current drinking water supply system within Northern Ireland, determines current consumption levels and projects future anticipated demand over the life time of the Plan (the 25 years between 2008/09 and 2034/35). Issues such as anticipated future population growth are therefore integral to the development of the WRMP.
	Severe Economic and Social problems in parts of NI	WRMP needs to ensure adequate water supply to all parts of Northern Ireland to ensure equal opportunities for all areas to develop economically.	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan.
Human Health	Improving health & reducing inequalities	WRMP will help ensure that all areas of Northern Ireland are served by a safe & reliable potable water supply	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Modernising and improving hospital and primary care services to ensure more timely and effective care and treatment	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of modernising and improving hospital and primary care services has not been addressed in the WRMP.
	Ensuring those with a disability, mental health difficulties, chronic or terminal illness to achieve the highest possible standard of living and be fully integrated into society	WRMP will help ensure that all areas of Northern Ireland are served by a safe & reliable potable water supply	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan.
	Ensuring an environment that supports healthy living and safe production of food	WRMP will help ensure that all areas of Northern Ireland are served by a safe & reliable potable water supply. WRMP is subject to SEA and options will be assessed for their environmental impact	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan.
	Promoting public safety by reducing the number of injuries and deaths caused by accidents at home, in work and roads	The implementation (e.g. via construction of infrastructure) of any option identified in the WRMP will have to be compliant with all relevant Health & Safety legislation / good working practices etc to ensure potential for accidents reduced	Construction sites and the activities associated with them are by their nature inherently risky. There is a potential for construction activities to have health and safety impacts on construction workers, visitors to the construction site and members of the public in the immediate vicinity of the

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
			<p>site and along access routes.</p> <p>However, it is possible to successfully mitigate these risks. Specific Health and Safety details for the construction phase are outside the scope of this Strategic Environmental Assessment as these will only be developed once precise design and construction methodologies have been developed. At this stage, it is sufficient to say that throughout the construction phase, adherence to high standards of Health and Safety for all construction workers, site visitors and members of the public will be of paramount importance. All construction activities will take place in the context of the relevant Northern Ireland Health and Safety legislation.</p> <p>A Construction phase Health & Safety plan / Safety Management System will be produced and this will detail the roles and responsibilities for all project team members.</p> <p>When required, liaison will be made with the Health and Safety Executive for Northern Ireland (HSENI). Further information on the role of the HSENI can be found at the following weblink:</p> <p>http://www.hseni.gov.uk/index.htm</p> <p>Or at the following address:</p> <p>Health and Safety Executive for Northern Ireland 83 Ladas Drive Belfast BT6 9FR</p>

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Protecting children's rights and meeting their needs	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of protecting children's rights and meeting their needs is not specifically addressed in the WRMP, other than that the WRMP will ensure that children have access to a safe and secure adequate supply of potable water.
Soil & Agriculture	Single Farm Payment Scheme and other CAP reform	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of Single Farm Payment Scheme etc is not addressed in the WRMP.
	Nitrates Directive and other Legislation / Policy	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of the Nitrates Directive is not addressed in the WRMP.
	Problems with beef exports	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of beef exports is not addressed in the WRMP.
	Impact on agricultural activities from Environmental Schemes	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of the impact of the WRMP on Environmental Schemes and their interaction with agricultural activities has not been addressed.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Planning Issues e.g. issues surrounding developments in the countryside	WRMP will help ensure that all areas of Northern Ireland are served by a safe & reliable potable water supply, though it will not address issues relating to connecting single dwellings to supply network	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan.
	Animal health issues	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore animal health issues are not addressed in the WRMP.
	Abandonment of upland areas	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of the abandonment of upland areas is not addressed in the WRMP.
	Rural development issues	WRMP will help ensure that all areas of Northern Ireland are served by a safe & reliable potable water supply, though it will not address issues relating to connecting single dwellings to supply network	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan. As noted, the WRMP does not address issues such as connecting single dwellings to the supply network.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Rural properties unconnected to the public water supply	WRMP will help ensure that all areas of Northern Ireland are served by a safe & reliable potable water supply, though it will not address issues relating to connecting single dwellings to supply network	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan. As noted, the WRMP does not address issues such as connecting single dwellings to the supply network.
Water	Point Source Pollution pressures	Options identified in WRMP could lead to increased output from WTW which could lead to greater discharges of process water	This issue was addressed in the Environmental Report (see for example Page 114 in relation to Dunore Point WTW). It is noted that discharge of process water will increase and this could lead to localised impacts on water quality at outfalls. However, it is also noted that effluent will be treated prior to discharge and discharges will be regulated by NIEA. Other point sources identified could arise during the construction phase of new infrastructure. Measures to mitigate these issues are detailed in Appendix A of the Environmental Report.
	Diffuse Pollution pressures	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of the impact of diffuse pollution on water quality is not addressed in the WRMP.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Pressure on water quantity and flow	Options identified in WRMP could lead to increases / decreases in water quantity and flow	There was only one abstraction Option within the Draft WRMP and this is the Option to increase abstraction from Lough Neagh (at Dunore Point WTW) by 10MI/d. This Option is not included in the Final WRMP. Therefore the WRMP will not impact on water quantity and flow in Northern Ireland's river systems.
	Physical or morphological alterations	Implementation of options identified in WRMP could induce physical or morphological alterations to water bodies	The only potential Option in the Draft WRMP which may have impacted on the physical conditions of water bodies was the Option to increase abstraction from Lough Neagh (at Dunore Point WTW) by 10MI/d. It has been shown in a detailed Environmental Impact Assessment and Habitats Regulation Assessment (both carried out by Mott McDonald in 2005) that abstraction in excess of this amount will not change the physical characteristics of Lough Neagh. For example in a letter from Rivers Agency dated 8 August 2005 in response to the above studies Rivers Agency (who operate the sluice gates at Toome) stated that they <i>"accept the conclusions reached that the abstraction proposals have no significant impact on water levels"</i> . This Option has not been brought forward to the Final WRMP.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Invasive non-native species	The implementation (e.g. via construction of infrastructure) of any option identified in the WRMP may provide an opportunity for the spread of invasive species	<p>Appendix A of the Environmental Report provides a range of generic mitigation measures to ensure that the risk of spread of invasive species and other pests due to infrastructure construction is minimised.</p> <p>All options identified in the WRMP would require detailed technical design prior to construction. This issue would therefore also be considered at the detailed scheme design stage.</p>
Air	Localised 'hotspots' exceeding air quality objectives	The implementation (e.g. via construction of infrastructure) of any option identified in the WRMP may impact on local air quality	<p>Appendix A of the Environmental Report provides a range of generic mitigation measures to ensure that the risk of impact on air quality from construction activities is minimised.</p> <p>All options identified in the WRMP would require detailed technical design prior to construction. This issue would therefore also be considered at the detailed scheme design stage.</p>

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
Climatic Factors	Energy production	The implementation of options identified in the WRMP may lead to an increase in energy production	<p>A number of Options contained within the WRMP are likely to require an increase in energy use e.g. for pumping water through the new proposed mains. The issue of energy use in relation to Strategic and Other Transfer options (and specifically climatic factors) is considered on Page 153 of the Environmental Report (consideration of energy use in relation to other Options is detailed in the relevant sections of the Environmental Report).</p> <p>At this stage it is not possible to quantify the amount of energy required as this will be dependent upon a range of factors not known at present. For example, the specification of pumping equipment and factors such as pumping regime will impact on the energy required.</p> <p>The issue of contributing to climate change through energy use is recognised by NI Water who are committed to measuring and managing energy use and greenhouse gas emissions through the NI Water environmental management system (accredited to ISO14001). NI Water approach the issue 'globally' by looking at their operations as a whole, rather than on just a site specific basis. As such NI Water have set targets to reduce overall energy consumption levels and to increase the purchase of 'green' electricity. NI Water are also examining options to produce more energy in house through the use of hydro and wind turbines.</p>

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Road Transport	No interaction of this issue with WRMP identified – may become an issue if option to carry out metering and therefore meter readings is implemented	<p>Although domestic metering was considered as an option within the development of the WRMP, it was for theoretical reasons only. This is due to NI Water not having the necessary powers to implement domestic metering. Although a draft charging scheme has been developed by the Department for Regional Development, no charging will be introduced in Northern Ireland before 2013 at the earliest.</p> <p>Therefore no further consideration of the impact of meter readings on road transport and its contribution to climate change is made in the WRMP.</p>
	Agriculture	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of agriculture impacting on air quality is not addressed in the WRMP.
	Industrial Processes	The implementation of options identified in the WRMP may lead to an increase in industrial processes to treat raw water to a potable standard	The only potential Option in the Draft WRMP which would lead to an increase in the treatment of raw water was the Option to increase abstraction from Lough Neagh (at Dunore Point WTW) by 10MI/d. This additional level of treatment is within the existing design capacity of the WTW, but this option has not been brought forward to the Final WRMP.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Residential development	WRMP needs to plan for future population growth in order to meet expected demand.	The WRMP examines the current drinking water supply system within Northern Ireland, determines current consumption levels and projects future anticipated demand over the life time of the Plan (the 25 years between 2008/09 and 2034/35). Issues such as anticipated future population growth are therefore integral to the development of the WRMP.
	Waste Management	Implementation of options identified in the WRMP may lead to an increase in waste generation.	Appendix A of the Environmental Report contains a range of generic mitigation measures to control waste and reduce the amount generated on construction sites. All options identified in the WRMP would require detailed technical design prior to construction. This issue would therefore also be considered at the detailed scheme design stage and a comprehensive Site Waste Management Plan would be developed and implemented during the construction phase.
Material Assets	Harmonising energy market across Ireland	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of harmonising the energy market is not addressed in the WRMP.
	Increasing competition in energy market	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of increasing competition in the energy market is not addressed in the WRMP.
	Ensuring balance of fuel diversity, cost and security of supply for power generation	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of ensuring balance of fuel diversity, cost and security of supply for power generation is

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
			<p>not specifically addressed in the WRMP.</p> <p>It is however worth noting that it is recognised in the Environmental Report (see for example Page 131) that NI Water are a major energy user and as such the issue of contributing to climate change through energy use is recognised by NI Water who are committed to measuring and managing energy use and greenhouse gas emissions through the NI Water environmental management system (accredited to ISO 14001). NI Water approach the issue 'globally' by looking at their operations as a whole, rather than just on a site specific basis. As such, NI Water have set targets to reduce overall energy consumption levels and to increase the purchase of 'green' electricity. Northern Ireland Water currently purchases 6% of the company's total energy use from renewable sources, self produces an additional 2%, and is considering alternative sources of renewable energy production to reduce carbon emissions from company activities namely abstraction, treatment and supply of water and waste water services.</p> <p>NI Water are also examining options to produce more energy in house through use of hydro and wind turbines.</p> <p>Furthermore NI Water are also conducting pilot studies on the viability of using bio-fuels in fleet operations and are working closely with Water UK and experts in this field to identify where improvements can be made. NI Water are also involved with other water companies in developing a carbon accounting system to</p>

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
			<p>establish the level of the company's carbon footprint and identify further methods to reduce this.</p> <p>As such, these measures would help toward ensuring a range of energy sources and security of supply.</p>
	<p>Reduce demand in businesses and enhance energy efficiency</p>	<p>WRMP will consider issue of pumping water – reduction in pumping could lead to a decrease in energy requirement</p>	<p>Although a number of the Options will require an increase in energy use, this is partially offset by other Options which should reduce energy use. For example, it is considered that reducing leakage will lead to a reduction in the amount of water requiring to be pumped through the system, as well as reducing the amount of water to be treated and this will have a reduction in energy use.</p> <p>As noted in the Environmental Report (for example Page 153), that NI Water are a major energy user and as such the issue of contributing to climate change through energy use is recognised by NI Water who are committed to measuring and managing energy use and greenhouse gas emissions through the NI Water environmental management system (accredited to ISO 14001). NI Water approach the issue 'globally' by looking at their operations as a whole, rather than just on a site specific basis. As such, NI Water have set targets to reduce overall energy consumption levels and to increase the purchase of 'green' electricity.</p>

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Increase use of renewable energy	No direct interaction of this issue with WRMP identified, though this is a policy for NI Water	No direct interaction was identified and as such this issue is not specifically addressed in the WRMP. However, NI Water is committed to an increase in the use of renewable energy - see above in relation to ensuring balance of fuel diversity, cost and security of supply for power generation for further detail.
	Development of water supply infrastructure	WRMP will set out the rationale behind the future development of water supply infrastructure	The WRMP examines the current drinking water supply system within Northern Ireland, determines current consumption levels and projects future anticipated demand over the life time of the Plan (the 25 years between 2008/09 and 2034/35). A range of Options for future water supply infrastructure were presented in the WRMP and their environmental implications are addressed in the Environmental Report. Chapter 9 of the Environmental Report provides detail on the range of Options included in the Draft WRMP and considers their anticipated environmental impact after mitigation.
Cultural Heritage (including architectural & archaeological)	Impact of Agriculture	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of the impact of agriculture on cultural heritage is not addressed in the WRMP. Issues relating to the potential impact of the WRMP on cultural heritage features are considered within the Environmental Report.. See also the generic mitigation measures contained within Appendix A.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Increased Housing & Development	WRMP needs to plan for future population growth in order to meet expected demand.	The WRMP examines the current drinking water supply system within Northern Ireland, determines current consumption levels and projects future anticipated demand over the life time of the Plan (the 25 years between 2008/09 and 2034/35). Issues such as anticipated future population growth are therefore integral to the development of the WRMP.
	Impact on historic sites of increased tourism	WRMP needs to ensure adequate water supply to all parts of Northern Ireland to ensure equal opportunities for all areas to develop economically. Economic development will include development of tourism opportunities.	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan. This therefore could help allow further development of tourism, though it is outside the scope of the WRMP as to whether this increased tourism will impact on historic sites.
Landscape	Increased Housing & Development	WRMP needs to plan for future population growth in order to meet expected demand.	The WRMP examines the current drinking water supply system within Northern Ireland, determines current consumption levels and projects future anticipated demand over the life time of the Plan (the 25 years between 2008/09 and 2034/35). Issues such as anticipated future population growth are therefore integral to the development of the WRMP.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	Mineral extraction & peat cutting	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of mineral extraction and peat cutting is not addressed in the WRMP.
	Changing land management practices	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issue of changing land management practices are not addressed in the WRMP.
	Impact of Agricultural & forestry practices	No interaction of this issue with WRMP identified	No interaction was identified during the development of the WRMP and therefore the issues of impact of agricultural and forestry practices are not addressed in the WRMP.
	Expansion of Eco-Tourism could impact on vulnerable areas	WRMP needs to ensure adequate water supply to all parts of Northern Ireland to ensure equal opportunities for all areas to develop economically. Economic development will include development of tourism opportunities.	As noted in Section 1.2, the WRMP applies to the geographical area of Northern Ireland (excluding any offshore islands such as Rathlin). It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan. This therefore could help allow further development of tourism, though it is outside the scope of the WRMP as to whether this would encourage eco-tourism that could impact on vulnerable areas.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
Waste	Increase in waste due to economic and population growth	No interaction of this issue with WRMP identified	Although Options in the WRMP could lead to some waste generation during the construction phase and mitigation for reducing this is contained within Appendix A, the WRMP will not have any impact on waste generated by an increasing population or economic growth and as such this issue was not considered further.
	Need to reduce amount of waste going to landfill	Options identified in WRMP may lead to an increase in construction waste due to development of associated infrastructure	Appendix A of the Environmental Report contains a range of generic mitigation measures to control waste and reduce the amount generated on construction sites. All options identified in the WRMP would require detailed technical design prior to construction. This issue would therefore also be considered at the detailed scheme design stage and a comprehensive Site Waste Management Plan would be developed and implemented during the construction phase.
	Development of waste management infrastructure	No interaction of this issue with WRMP identified	Although Options in the WRMP could lead to some waste generation during the construction phase and mitigation for reducing this is contained within Appendix A, the WRMP will not have any impact on the need for or development of waste management infrastructure and as such this issue was not considered further.

SEA Topic	Key Environmental Issues, Trends and Problems	Potential Interaction with WRMP	How have these Key Environmental Issues, Trends and Problems been addressed in the WRMP
	<p>Issue of disposal of sludge produced by WTW processes</p>	<p>Options identified in WRMP may lead to increase in sludge produced by WTW's.</p>	<p>It was recognised in the Draft WRMP that increased abstraction e.g. at Dunore Point WTW may lead to an increase in the production of sludge as a by-product of the treatment process. It was acknowledged that at this stage it is not possible to quantify the increase in the amount of sludge that would be produced as this is dependent upon the treatment process employed and other factors such as the prevailing water quality. It is a fundamental element of water resource planning that all areas within the geographical area of the plan served by the public water supply network (i.e. across Northern Ireland) have the same level of access to adequate supplies of potable water due to Options proposed in the plan. Note that the Option to increase abstraction has not been brought forward to the Final WRMP.</p> <p>It should be noted that NI Water currently have in place procedures to handle and dispose of all the sludge produced by the WTW process across all their sites in Northern Ireland. These procedures would be adapted to meet the output of any enhanced abstraction. NI Water also continuously examine new methods for reducing the amount of sludge produced, for example, by changing treatment methods.</p>

5. Integration of environmental considerations and how the environmental report has been taken into account

Positive and Negative effects identified in the Environmental Report and whether / how these have been dealt with in the WRMP

Within the Environmental Report, the anticipated environmental impacts of each proposed option were identified against each of the SEA Topics. To allow an overview of potential anticipated impacts, the scope for mitigation identified and the severity (positive or negative) of the residual effect (i.e. after mitigation), was also detailed. Note that mitigation can be applied at both the operational stage and during the construction phase.

In order to allow a comparison of the significance of environmental impacts to be made, each effect was described by an assessment of severity in accordance with the following criteria where appropriate:

- Neutral: where there will be no overall impact;
- Slight: where impacts will be observable but where the scale of the impact is unlikely to be of material significance in the locality;
- Moderate: where impacts could occur which will have effects on factors recognised as being of local importance or implication;
- Substantial: where impacts could occur which have implications for factors which are of recognised regional importance; or
- Severe: where the potential impact is likely to affect a factor of recognised national or international importance, or affect a recognised national or international guideline or standard, or to be of major implication to the character or context of the area in which the feature or factor is located.

As noted impacts can either be positive (beneficial to the environment) or negative (adverse to the environment). Neutral impacts are neither positive nor negative.

Table 5.1: Positive and Negative effects identified in the Environmental Report and whether / how these have been dealt with in the WRMP – Increase in Abstraction from Castor Bay WTW of 10MI/d

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
Increase in abstraction from Dunore Point WTW of 10 MI/d Note that this Option has not been included in the Final WRMP	Biodiversity	<ul style="list-style-type: none"> No impact anticipated during operation - Detailed EIA and Article 6 Assessment showed that proposed scheme would not have an impact on designated areas or protected species 	<ul style="list-style-type: none"> None required 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> A Habitat Regulation Assessment (HRA) was carried out of the proposed abstraction on the designated sites (Natura 2000) that may be impacted by this Option. This HRA concluded (as those previously) that no impact would be experienced on the Natura 2000 sites by this Option. See also Section 3 of this SEA Statement.
		<ul style="list-style-type: none"> Potential impact during construction phase 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on biodiversity during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Population & Economic Development	<ul style="list-style-type: none"> None anticipated 	<ul style="list-style-type: none"> None required 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> As no impact was anticipated, this issue was not considered further in the WRMP.
	Human Health	<ul style="list-style-type: none"> No impact anticipated during operation. Potential 	<ul style="list-style-type: none"> Adherence to industry health & safety best 	<ul style="list-style-type: none"> Neutral 	<ul style="list-style-type: none"> Specific Health and Safety details for the construction phase are outside the scope of the WRMP and this Strategic Environmental Assessment as these will

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
		impact during construction phase	practice during construction stage		only be developed once precise design and construction methodologies have been developed. At this stage, it is sufficient to say that throughout the construction phase, adherence to high standards of Health and Safety for all construction workers, site visitors and members of the public will be of paramount importance. All construction activities will take place in the context of the relevant Northern Ireland Health and Safety legislation.
	Soil & Agriculture	<ul style="list-style-type: none"> No impact anticipated as all upgrading to works to take place in existing WTW footprint 	<ul style="list-style-type: none"> None required 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> As no impact was anticipated, this issue was not considered further in the WRMP.
	Water	<ul style="list-style-type: none"> Increase in discharges of process water from WTW 	<ul style="list-style-type: none"> Effluent will be treated prior to discharge and will be regulated by NIEA. 	<ul style="list-style-type: none"> Slight Negative 	<ul style="list-style-type: none"> This issue was not considered further in the WRMP as this issue was considered in detail in the Environmental Impact Assessment carried out by Mott McDonald in 2005. This EIA concluded that while discharges will increase and this may have a localised impact on water quality at the outfall, the effluent will be treated prior to discharge and will be regulated by NIEA. It was also considered that this would be an improvement on the existing situation due to upgrade of the WTW. The above findings are noted in the Environmental Report on Page 114, Section 8.1.2.10.
		<ul style="list-style-type: none"> Reduction in level of Lough Neagh 	<ul style="list-style-type: none"> Level in lough controlled by gates at Toome 	<ul style="list-style-type: none"> Neutral 	<ul style="list-style-type: none"> It has been shown in a detailed Environmental Impact Assessment and Habitats Regulation Assessment (both carried out by Mott McDonald in 2005) that abstraction in excess of the amount of 10MI/d

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
		<ul style="list-style-type: none"> Potential threat to water quality during construction stage from pollution incidents 	<ul style="list-style-type: none"> Adherence to generic mitigation measures to reduce risk of pollution incident occurring 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<p>identified for Dunore Point WTW will not change the physical characteristics of Lough Neagh. For example in a letter from Rivers Agency dated 8 August 2005 in response to the above studies Rivers Agency (who operate the sluice gates at Toome) stated that they <i>“accept the conclusions reached that the abstraction proposals have no significant impact on water levels”</i>.</p> <ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on water quality during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Air	<ul style="list-style-type: none"> Potential threat to air quality in local area during construction stage e.g. from dust emissions 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on air quality during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Climatic Factors	<ul style="list-style-type: none"> Potential increase in emissions of ‘greenhouse gases’ due to increased pumping 	<ul style="list-style-type: none"> NI Water approaching issue ‘globally’ across company with 	<ul style="list-style-type: none"> Neutral / Slight Negative 	<ul style="list-style-type: none"> As noted in the Environmental Report (Page 115 in relation to Dunore Point WTW, it is not possible at this stage to quantify the increase in emissions as this is dependent upon a range of factors that are not known at present. For example the specification of pumping

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
			measures to reduce energy use, invest in 'green' energy etc.		equipment and factors such as pumping regime will impact on the level of emissions produced. NI Water are a major energy user and as such the issue of contributing to climate change through energy use is recognised by NI Water who are committed to measuring and managing energy use and greenhouse gas emissions through the NI Water environmental management system (accredited to ISO 14001).
	Material Assets	<ul style="list-style-type: none"> Increased energy requirements 	<ul style="list-style-type: none"> NI Water approaching issue 'globally' across company with measures to reduce energy use, invest in 'green' energy etc. 	<ul style="list-style-type: none"> Neutral / Slight Negative 	<ul style="list-style-type: none"> As noted in the Environmental Report (Page 115 in relation to Dunore Point WTW, it is not possible at this stage to quantify the increase in emissions as this is dependent upon a range of factors that are not known at present. For example the specification of pumping equipment and factors such as pumping regime will impact on the level of emissions produced. NI Water are a major energy user and as such the issue of contributing to climate change through energy use is recognised by NI Water who are committed to measuring and managing energy use and greenhouse gas emissions through the NI Water environmental management system (accredited to ISO 14001).
		<ul style="list-style-type: none"> New infrastructure required (though all to be contained within footprint of existing WTW) 	<ul style="list-style-type: none"> Adherence to generic mitigation measures to reduce risk of pollution incident 	<ul style="list-style-type: none"> Neutral 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential pollution incidents occurring during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
	Cultural Heritage	<ul style="list-style-type: none"> No impact anticipated as all upgrading to works to take place in existing WTW footprint on ground that has been disturbed previously. However, potential of unknown remains being uncovered remains. 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Neutral 	<ul style="list-style-type: none"> detailed technical studies and appointment of the contractor. A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on cultural heritage during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Landscape	<ul style="list-style-type: none"> No impact anticipated as all upgrading to works to take place in existing WTW footprint 	<ul style="list-style-type: none"> None required 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> As no impact was anticipated, this issue was not considered further in the WRMP.
	Waste	<ul style="list-style-type: none"> Increase in sludge production 	<ul style="list-style-type: none"> NI Water have procedures in place for dealing with sludge from WTW. Measures are being taken, such as 	<ul style="list-style-type: none"> Slight Negative 	<ul style="list-style-type: none"> As noted on Page 116 of the Environmental Report it is not possible at this stage to quantify the increase in the amount of sludge that would be produced as a by-product of increased abstraction and treatment as this is dependent upon the treatment processes employed and other factors such as prevailing water quality. As such, this issue was not considered further in the WRMP.

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
		<ul style="list-style-type: none"> Waste generated by construction activities 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Neutral 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that waste generated during construction of the Option would be minimised. <p>It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.</p>

Table 5.2: Positive and Negative effects identified in the Environmental Report and whether / how these have been dealt with in the WRMP – Leakage Reduction below current targets and implementation dates

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
Leakage Reduction below current targets and implementation dates	Biodiversity	<ul style="list-style-type: none"> Potential threat to biodiversity from construction activities 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures Identify potential for impact on Natura 2000 sites 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A Habitat Regulation Assessment (HRA) Stage 1 Screening was carried out of the proposed abstraction on the designated sites (Natura 2000) that may be impacted by this Option. This HRA Stage 1 Screening concluded that further work relating to the Habitats Directive would be required when further details of individual schemes was known (for example precise location, working methods etc.). See also Section 3 of this SEA Statement. In relation to leakage, NI Water have an existing procedure in place to identify the requirements of HRA in relation to leakage reduction schemes. A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on biodiversity during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Population & Economic Development	<ul style="list-style-type: none"> Potential access difficulties to properties & businesses etc during construction 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on access to properties / businesses etc during construction of the Option

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
				phase)	would be minimised. <ul style="list-style-type: none"> It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Human Health	<ul style="list-style-type: none"> Potential impacts in human health during construction activities e.g. from accidents, dust emissions etc. 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on human health from accidents, dust emissions etc during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Soil & Agriculture	<ul style="list-style-type: none"> Potential severance issues during construction stage 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on issues such as farm severance during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Water	<ul style="list-style-type: none"> Potential threat to water quality during construction stage from pollution 	<ul style="list-style-type: none"> Adherence to generic mitigation measures to reduce risk of 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on water quality during

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
		incidents	pollution incident occurring	phase)	<p>construction of the Option would be minimised.</p> <ul style="list-style-type: none"> It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Air	<ul style="list-style-type: none"> Potential threat to air quality in local area during construction stage e.g. from dust emissions 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on air quality during construction of the Option would be minimised. <p>It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.</p>
	Climatic Factors	<ul style="list-style-type: none"> Potential that this could lead to a reduction in greenhouse gases due to reduced pumping and treatment of water. Not possible to quantify this at present. 	<ul style="list-style-type: none"> None required 	<ul style="list-style-type: none"> Neutral (due to taking precautionary approach as benefits cannot be quantified) 	<ul style="list-style-type: none"> As no negative impact was anticipated, this issue was not considered further in the WRMP.
	Material Assets	<ul style="list-style-type: none"> None anticipated 	<ul style="list-style-type: none"> None required 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> As no impact was anticipated, this issue was not considered further in the WRMP.
	Cultural Heritage	<ul style="list-style-type: none"> Potential threat to unknown features from construction 	<ul style="list-style-type: none"> Adherence to generic construction 	<ul style="list-style-type: none"> Slight Negative / Neutral 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
		activities	mitigation measures	(Temporary to construction phase)	potential impacts on cultural heritage during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Landscape	<ul style="list-style-type: none"> Potential impacts from construction activities 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on landscape during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Waste	<ul style="list-style-type: none"> Waste generated by construction activities 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Neutral 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential waste generation during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.

Table 5.3: Positive and Negative effects identified in the Environmental Report and whether / how these have been dealt with in the WRMP – Strategic and Other Transfers

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
Strategic and Other Transfers Note that for the most part large scale Strategic Transfers have not been included in the Final WRMP	Biodiversity	<ul style="list-style-type: none"> Potential threat to biodiversity from construction activities 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures Identify potential for impact on Natura 2000 sites Good route selection to avoid features of interest when possible Appropriate reinstatement of lost habitat (provides an opportunity for improvement) 	<ul style="list-style-type: none"> Slight Negative (Temporary to Construction phase) 	<ul style="list-style-type: none"> A Habitat Regulation Assessment (HRA) Stage 1 Screening was carried out of the proposed abstraction on the designated sites (Natura 2000) that may be impacted by this Option. This HRA Stage 1 Screening concluded that further work relating to the Habitats Directive would be required when further details of individual schemes was known (for example precise route, size of pipe, working methods etc.). See also Section 3 of this SEA Statement. A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on biodiversity during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Population & Economic Development	<ul style="list-style-type: none"> Potential access difficulties to properties & businesses etc during construction 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential access difficulties to properties, businesses etc. during construction of the Option would be minimised.

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
	Human Health	<ul style="list-style-type: none"> Potential impacts in human health during construction activities e.g. from accidents, dust emissions etc. 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase). Positive benefit from ensuring the secure supply of potable water. 	<ul style="list-style-type: none"> It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor. A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on human health during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Soil & Agriculture	<ul style="list-style-type: none"> Temporary loss of topsoil, field boundaries etc along route of pipeline 	<ul style="list-style-type: none"> Careful reinstatement of features such as topsoil, field drains, boundaries etc post construction 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on soil & agriculture during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor. Note there is a need for investigations to take place into the potential for agricultural pests to be present along any pipeline route e.g. Potato Cyst Nematode. These investigations can only take place

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
		<ul style="list-style-type: none"> Potential severance issues during construction stage 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<p>immediately prior to final route selection in order to avail of the latest infestation location information.</p> <ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential severance issues during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
		<ul style="list-style-type: none"> Potential spread of agricultural pests e.g. PCN 	<ul style="list-style-type: none"> Careful identification of pest infected areas prior to construction and adherence to generic mitigation measures 	<ul style="list-style-type: none"> Neutral 	<ul style="list-style-type: none"> There is a need for investigations to take place into the potential for agricultural pests to be present along any pipeline route e.g. Potato Cyst Nematode. These investigations can only take place immediately prior to final route selection in order to avail of the latest infestation location information. Advice on dealing with any infestations can also be obtained from the Department of Agriculture and Rural Development (DARD). During construction careful adherence to the advice obtained from DARD will be required in order to ensure that any pest encountered is not transported to uninfected areas.
	Water	<ul style="list-style-type: none"> Potential threat to water quality during construction stage from pollution incidents 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential threats to water quality during construction of the Option would be minimised. It should be noted that the generic mitigation

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
	Air	<ul style="list-style-type: none"> Potential threat to air quality in local area during construction stage e.g. from dust emissions 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase) 	<p>measures can be made project / site specific following detailed technical studies and appointment of the contractor.</p> <ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential threats to local air quality during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor. As noted on Page 153 of the Environmental Report it is not possible at this stage to quantify the impact on air quality at a wider level due to increased emissions from increased pumping. It is considered that air quality in the immediate vicinity of any pipeline will not be impacted as the energy requirements will be from power stations or from emergency generators at pumping stations (which would only be used in emergency periods).
	Climatic Factors	<ul style="list-style-type: none"> Potential increase in emissions of 'greenhouse gases' due to increased pumping 	<ul style="list-style-type: none"> NI Water approaching issue 'globally' across company with measures to reduce energy use, invest in 	<ul style="list-style-type: none"> Neutral / Slight Negative 	<ul style="list-style-type: none"> As noted in the Environmental Report (Page 153 in relation to Strategic and Other Transfers), it is not possible at this stage to quantify the increase in emissions as this is dependent upon a range of factors that are not known at present. For example the specification of pumping equipment and factors such as pumping regime will impact on the level of emissions produced.

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
			'green' energy etc.		<ul style="list-style-type: none"> NI Water are a major energy user and as such the issue of contributing to climate change through energy use is recognised by NI Water who are committed to measuring and managing energy use and greenhouse gas emissions through the NI Water environmental management system (accredited to ISO 14001).
	Material Assets	<ul style="list-style-type: none"> Increased energy requirements 	<ul style="list-style-type: none"> NI Water approaching issue 'globally' across company with measures to reduce energy use, invest in 'green' energy etc. 	<ul style="list-style-type: none"> Neutral / Slight Negative 	<ul style="list-style-type: none"> As noted in the Environmental Report (Page 153 in relation to Strategic and Other Transfers), it is not possible at this stage to quantify the increase in emissions as this is dependent upon a range of factors that are not known at present. For example the specification of pumping equipment and factors such as pumping regime will impact on the level of emissions produced. NI Water are a major energy user and as such the issue of contributing to climate change through energy use is recognised by NI Water who are committed to measuring and managing energy use and greenhouse gas emissions through the NI Water environmental management system (accredited to ISO 14001).
		<ul style="list-style-type: none"> New infrastructure required 	<ul style="list-style-type: none"> None required 	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> This Option relates to the development of new infrastructure. As no impact on existing material assets was anticipated, this issue was not considered further in the WRMP.
	Cultural Heritage	<ul style="list-style-type: none"> Potential threat to unknown cultural heritage features 	<ul style="list-style-type: none"> Adherence to generic mitigation 	<ul style="list-style-type: none"> Slight Negative (Temporary) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
		from construction activities	measures	to construction phase)	potential impacts on cultural heritage during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Landscape	<ul style="list-style-type: none"> Construction of pipelines will involve a working area that will represent a 'scar' across landscape 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures Careful reinstatement of features such as topsoil, field boundaries etc post construction 	<ul style="list-style-type: none"> Moderate Negative (though ultimately neutral) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential impacts on landscape during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Waste	<ul style="list-style-type: none"> Waste generated by construction activities 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Neutral (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential waste generation during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.

Table 5.4: Positive and Negative effects identified in the Environmental Report and whether / how these have been dealt with in the WRMP – Retain and Refurbish Existing Sources (Camlough WTW)

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
Retain and Refurbish Existing Sources (Camlough WTW)	Biodiversity	<ul style="list-style-type: none"> None Identified – refurbishment works within existing WTW proposed only 	<ul style="list-style-type: none"> None proposed 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	Population & Economic Development	<ul style="list-style-type: none"> None Identified – refurbishment works within existing WTW proposed only 	<ul style="list-style-type: none"> None proposed 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	Human Health	<ul style="list-style-type: none"> Potential impacts in human health during refurbishment activities e.g. from accidents, dust emissions etc. 	<ul style="list-style-type: none"> Adherence to good practice and generic mitigation measures 	<ul style="list-style-type: none"> Slight Negative (Temporary to construction phase). Positive benefit from ensuring the secure supply of potable water. 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential waste generation during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.
	Soil &	<ul style="list-style-type: none"> None Identified – 	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
	Agriculture	refurbishment works within existing WTW proposed only	proposed		
	Water	<ul style="list-style-type: none"> None Identified – refurbishment works within existing WTW proposed only 	<ul style="list-style-type: none"> None proposed 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	Air	<ul style="list-style-type: none"> None Identified – refurbishment works within existing WTW proposed only 	<ul style="list-style-type: none"> None proposed 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	Climatic Factors	<ul style="list-style-type: none"> None Identified – refurbishment works within existing WTW proposed only 	<ul style="list-style-type: none"> None proposed 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	Material Assets	<ul style="list-style-type: none"> None Identified – refurbishment works within existing WTW proposed only 	<ul style="list-style-type: none"> None proposed 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	Cultural Heritage	<ul style="list-style-type: none"> None Identified – refurbishment works within existing WTW proposed only 	<ul style="list-style-type: none"> None proposed 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A

Option in WRMP	SEA Topic Addressed	Potential Environmental Impact	Mitigation Measure	Severity of effect after mitigation	How this has been addressed in the WRMP?
	Landscape	<ul style="list-style-type: none"> None Identified – refurbishment works within existing WTW proposed only 	<ul style="list-style-type: none"> None proposed 	<ul style="list-style-type: none"> N/A 	<ul style="list-style-type: none"> N/A
	Waste	<ul style="list-style-type: none"> Waste generated by refurbishment activities 	<ul style="list-style-type: none"> Adherence to generic construction mitigation measures 	<ul style="list-style-type: none"> Neutral (Temporary to construction phase) 	<ul style="list-style-type: none"> A range of Generic Mitigation Measures are contained within Appendix A of the Environmental Report. Adherence to these would ensure that potential waste generation during construction of the Option would be minimised. It should be noted that the generic mitigation measures can be made project / site specific following detailed technical studies and appointment of the contractor.

6. Liaison with Consultation Bodies and other interested parties

As noted in the guidance document ‘Strategic Environmental Assessment – Consultation Bodies Services and Standards for Responsible Authorities’, in Northern Ireland, the government has designated the Department of the Environment as the consultation body in relation to Strategic Environmental Assessment and delivery of this function is led by the Northern Ireland Environment Agency.

Note that although the Plan is to be implemented in the geographical area of Northern Ireland only, it was recognised that there was a potential for elements of the Plan to have a trans-boundary impact and as such the relevant Consultation Bodies in the Republic of Ireland were also contacted regarding the scope of the SEA. The relevant Consultation Bodies were therefore as follows:

Northern Ireland

- Northern Ireland Environment Agency (NIEA)

Republic of Ireland

- Environmental Protection Agency (EPA)
- Department of the Environment, Heritage and Local Government (DoEHLG)
- Department of Communications, Energy and Natural Resources (DCENR)

The above bodies all provided vital information and comment to the development of the WRMP and associated SEA. This information and comment was incorporated and addressed in the Environmental Report as appropriate.

The Draft WRMP and SEA Environmental Report were both issued for technical review and comment and wider public consultation on 4th November 2010, with the consultation period closing 16 weeks later on 24th February 2011.

During this consultation period, the following bodies responded:

Table 6.1: Organisations that responded to consultation

Consultation Respondent	Role of the respondent
Consumer Council for Northern Ireland	<p>The Consumer Council is an independent consumer organisation, working to bring about change to benefit Northern Ireland’s consumers. This organisation was set up by statute in 1985 as a Non-Departmental Public Body with the aim to make the consumer voice heard and make it count. As such they have a statutory duty to ensure that the consumer interest is represented and protected.</p> <p>The Consumer Council represent consumers in the areas of transport, water and energy. They also have a responsibility to educate consumers on their rights and responsibilities and to equip them with the skills they need to make good decisions about their money and manage it wisely.</p>
Department for Regional	The Department for Regional Development has the following main

Consultation Respondent	Role of the respondent
Development	<p>responsibilities:</p> <ul style="list-style-type: none"> • Regional strategic planning and development policy; • Transport strategy and sustainable transport policy; • Provision and maintenance of all public roads; • Public transport policy and performance; • Certain policy and support work for air and sea ports; and • Policy on water and sewerage services and management of the Department's shareholder interest in Northern Ireland Water. <p>The vision of the Department is:</p> <p><i>"A region with modern, safe and sustainable roads, transport and water services which improve quality of life for all."</i></p>
Department of Communications, Energy and Natural Resources (Republic of Ireland)	<p>The Department of Communications, Energy and Natural Resources (DCENR) has responsibility for the following areas:</p> <ul style="list-style-type: none"> • Radio, Television and the provision of quality broadcasting services • Security and reliability of energy supply & to develop energy conservation • Electronic Communications, radio spectrum & postal services and regulation • Petroleum affairs, exploration, mining, geology & Inland Fisheries
Environmental Protection Agency (Republic of Ireland)	<p>It is the role of the Environmental Protection Agency (EPA) to ensure that the Republic of Ireland's environment is protected, as well as monitor changes in environmental trends to detect early warning signs of neglect or deterioration.</p> <p>The EPA is an independent public body established under the Environmental Protection Agency Act, 1992.</p> <p>The EPA have a wide range of functions to protect the environment, and its primary responsibilities include:</p> <ul style="list-style-type: none"> • Environmental licensing • Enforcement of environmental law • Environmental planning, education and guidance • Monitoring, analysing and reporting on the environment • Regulating the Republic of Ireland's greenhouse gas emissions • Environmental research development • Strategic environmental assessment

Consultation Respondent	Role of the respondent
	<ul style="list-style-type: none"> • Waste management
Freshwater Task Force	<p>The Freshwater Task Force comprises representatives from eight environmental organisations operating in Northern Ireland. These organisations are:</p> <ul style="list-style-type: none"> • Ballinderry Fish Hatchery • Friends of the Earth • Northern Ireland Environment Link • Royal Society for the Protection of Birds • The National Trust • Ulster Angling Federation • Ulster Wildlife Trust • Wildfowl and Wetlands Trust • World Wildlife Fund (WWF) Northern Ireland <p>These bodies are working together to encourage Government to adopt a sustainable and integrated approach to water management.</p>
Inland Fisheries Ireland (Republic of Ireland)	<p>Inland Fisheries Ireland is a statutory body established on 1st July 2010 under the auspices of the Department of Communications, Energy and Natural Resources (see above). The principal function of IFI is the protection, management and conservation of the inland fisheries resource.</p>
Loughs Agency	<p>The Loughs Agency is a cross-border body, exercising a statutory remit for conservation, protection and development across the Foyle and Carlingford catchments. Loughs Agency objectives for these river systems and sea areas include development of fisheries and aquaculture, conservation and protection of inland fisheries and sustainable development of marine tourism</p>
Northern Ireland Authority for Utility Regulation	<p>The Utility Regulator (Northern Ireland Authority for Utility Regulation) is responsible for regulating the electricity and gas industries and water and sewerage services in Northern Ireland, to promote the short- and long-term interests of consumers.</p> <p>The Utility Regulator is a non-ministerial government department and are governed by a Board of Directors. While not a policy-making department of Government, the Utility Regulator makes sure that the utility industries in Northern Ireland are regulated and developed within Ministerial policy as set out in their statutory duties.</p> <p>These statutory duties are set out in the Energy (Northern Ireland) Order 2003 and the Water and Sewerage Services (Northern Ireland) Order 2006.</p> <p>The Utility Regulator has three main objectives:</p>

Consultation Respondent	Role of the respondent
	<ul style="list-style-type: none"> • Protect the interests of electricity consumers with regard to price and quality of service, where appropriate by promoting competition in the generation, transmission and supply of electricity; • Promote the development and maintenance of an economic and coordinated gas industry and to protect the interests of gas consumers with regard to price and quality of service; • Protect the interests of water and sewerage consumers, where appropriate by promoting competition, by promoting a robust and efficient industry delivering high quality services. <p>The Utility Regulator works to protect the interests of electricity, gas and water consumers in Northern Ireland by:</p> <ul style="list-style-type: none"> • issuing and maintaining licences for gas, electricity and water companies to operate in Northern Ireland; • making sure that these companies meet relevant legislation and licence obligations; • challenging companies to keep the prices they charge electricity, gas and water customers as low as possible; • encouraging regulated companies to be more efficient and responsive to customers; • working to encourage competition in the gas, electricity, water and sewerage services markets; • setting the standards of service which regulated companies provide to customers in Northern Ireland; • acting as an adjudicator on certain customer complaints, disputes and appeals. <p>In carrying out its work the Utility Regulator also takes account of the needs of vulnerable consumers and aims to contribute to the promotion of sustainable development in exercising its regulatory duties.</p>
Northern Ireland Environment Agency	<p>The Northern Ireland Environment Agency (NIEA) is an Agency within the Department of Environment and takes the lead in advising on, and implementing, the Government's environmental policy and strategy in Northern Ireland. NIEA carry out a range of activities, which promote the Government's key themes of sustainable development, biodiversity and climate change.</p> <p>The overall aims of NIEA are to:</p> <ul style="list-style-type: none"> • protect and conserve Northern Ireland's natural heritage and built environment • control pollution

Consultation Respondent	Role of the respondent
	<ul style="list-style-type: none"> promote the wider appreciation of the environment and best environmental practices <p>NIEA is the formal SEA Consultation body within Northern Ireland.</p>
Ulster Angling Federation	<p>The Ulster Angling Federation is the representative body for game angling associations in Northern Ireland. The Federation has a membership of some 60 associations, with a total individual membership of some 7000 anglers. The Federation represents anglers in discussions with Public bodies, government and other NGO's and has been in existence since 1930.</p> <p>The Federation is a member of the Freshwater Task Force as noted above.</p>
Varyflush Limited	<p>Varyflush Limited are a private company based in Mirfield, West Yorkshire, who supply devices for insertion into toilet cisterns with the objective of allowing the user to flush only the water that is required to remove waste. Varyflush Limited maintain that this system produces a significant reduction in the amount of water used by toilets and if fitted across Northern Ireland, this system would lead to a reduction in overall water demand.</p>

6.1 Results of Consultation

The following table (Table 6.2) details the comments received from each of the above organisations who responded to the public consultation on the Draft WRMP and SEA Environmental Report.

This table also details how the comments received have been addressed in the formulation of the Final WRMP.

Table 6.2: Comments received from organisations who responded to the public consultation on the Draft WRMP and SEA Environmental Report

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
Consumer Council for Northern Ireland	Consumer confidence in NI Water had fallen from 64% in 2009 to 45% in 2010. In order to begin to rebuild consumer confidence, NI Water must demonstrate tangible benefits of water reform and improvement in water services. It is necessary that the assurances provided in the dWRMP are acted on so that consumers can enjoy a continuous supply of drinking water.	The text of the Final WRMP has been revised to highlight the long-term strategic objectives of water resource planning and where there are differences between these and shorter-term operational objectives and issues.
	It is recognised that over the 25years of the WRMP, there is a need to use both demand and supply side solutions, with the balance depending upon circumstances many of which will be outside NI Water control. What consumers expect is that what can be controlled by NI Water is controlled and that this is done with maximum value for money.	The WRMP is based on identifying the combination of supply-side and demand-side options that leads to a least-cost plan to maintain an appropriate balance between demands and supplies. The analysis is based on current regulatory requirements, policies and abstraction licences. Any material change to any of these would trigger the production of a new WRMP. Delivery of value for money is addressed under the current regulatory Price Control and review processes.
	The Consumer Council is pleased that based on current information, the water requirements of Northern Ireland can be met through planned leakage reduction and improved strategic transfers of water without the need for significant and expensive measures such as new reservoirs or desalination and the development of new water resources will only be necessary towards the end of the plan in 2028-29.	Comment Noted
	The dWRMP appears to be based on sound and current best practice guidelines. It is noted that the final WRMP will be an evolving document. It is noted that improved data will facilitate an improved WRMP but there are pieces of information that would have been beneficial to the dWRMP e.g. Trunk Main Model which will be used in the final WRMP.	The Trunk Main Model has been used to inform the Final WRMP and will be used as an important tool for operational planning, especially in the context of recent “freeze-thaw” incidents.
	The Consumer Council note the review being carried out into the	This is a major policy issue for joint discussion with DRD and

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	possible impact of introducing a free / subsidised supply pipe repair policy. This review is welcomed but it would have been useful to have this information in the dWRMP.	NIAUR that falls outside the timetable of the current WRMP process.
	The final WRMP should provide clarity on the level of consultation that the annual review and 5 year revised WRMP will be subject to.	<p>The consultation requirements are set out in the “Water and Sewerage Services (Northern Ireland) Order 2006”. The text in Section 1.4 of the Final WRMP includes an additional reference to this Order.</p> <p>It should also be noted that consultation with relevant responsible authorities (including those in the Republic of Ireland) will be required under the terms of the SEA Directive in relation to any SEA carried out as part of the review of the WRMP. See the guidance document ‘Strategic Environmental Assessment – Consultation Bodies Services and Standards for Responsible Authorities’ for further details on the SEA consultation process.</p>
	Future versions of the WRMP must also clearly state the impact of improved data and revised conditions such as the review of abstraction licences by NIEA	Comment noted for future WRMPs.
	The Consumer Council would support an expansion of its education role to encourage consumers to make educated decisions in terms of water efficiency and reduction of water consumption.	NI Water intends to progress a water efficiency programme for the next Price Control period. The scope and timing of the programme will depend on the funding made available.
	The three year water efficiency measures assessed have relatively high average incremental social costs (AISC) and come toward the end of the AISC assessment but feel these provide a wider opportunity to educate consumers.	See comment above.
	The final WRMP should include relevant recommendations from the NI Executive review of the water crisis (Winter 2010/11) to ensure the final WRMP is holistic and fit for purpose.	The Final WRMP includes reference to the “freeze-thaw” incident in Section 4.1.3 and Appendix C.2 and how this influences shorter-term operational planning rather than strategic long-term water resource planning.
	The WRMP should co-exist and join with other strategies regarding	The interaction of the WRMP with other legislation, plans

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	our water and sewerage services or our water environment.	and policies is considered in detail in Chapter 2 of the Strategic Environmental Assessment Environmental Report.
Department for Regional Development	Will the measures recommended in the Final Planning Scenario help to maintain supplies in future extreme weather events?	The WRMP is a stand-alone document that provides a strategic plan for managing water resources; it is not designed to maintain a positive supply-demand balance under all circumstances. Some events more extreme than the design event of the WRMP may lead to short-term restrictions or interruptions to supply. There are other drivers for investment which should be assessed – for instance, operational resilience – outside the WRMP process. Investment at smaller spatial scales will still need to be justified through other more local studies, such as trunk main studies, detailed zonal studies and targeted leakage initiatives.
	While the WRMP is not intended to include possible operational response to extreme events, we recommend that the possibility of these events occurring be factored into forecasts.	Comment noted; as indicated by DRD response this falls outside the WRMP process, and would need to be considered under projects such as the Single Source Watermains Project Appraisals and the resultant Major Incident Mitigation Projects which focussed on the District Meter Area (DMA) scale.
	The Map of the Water Resource Zones is somewhat misleading. Rathlin Island is not being considered as part of the WRMP, but the colour coding on the map makes it look like part of the North Zone. This should be made clear in the final WRMP.	Point noted. Rathlin Island is excluded from the WRMP due to its geographical separation from the Northern Ireland mainland. While it has its own water resource supplying 0.2MI/d operated by NI Water, for the purposes of water resource planning, it has no interaction, or potential interaction, with the rest of the supply network. See Section 2.3 of the Final WRMP. The Geographical scope of the WRMP is also discussed in the Key Facts section of this SEA Statement.
	Why isn't extreme weather listed as an event that could be considered as an unplanned outage?	As noted in section 3.4 Draft WRMP the methodology for outage assessment is set out in the UKWIR report "Outage allowances for water resources planning". This provides a definitive list of events that could be considered as unplanned outage events; this report constitutes current best

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
		practice.
	It is noted that there is a lack of historic data when calculating unplanned outage. Would outage need to be reassessed to consider events like the freeze/thaws of the last two winters?	These types of extreme event are more relevant to the Major Incident Mitigation Projects programmes.
	In Fig 4.2, the base year is quite a bit drier than the previous two years. Is it necessarily the most suitable year to use for a base?	<p>Figure 4.2 of the dWRMP shows the annual rainfall, whereas Figure 4.1 of the dWRMP shows summer rainfall. Figure 4.1 indicates that the summer of 2008-09 is relatively wet. It is summer rainfall that influences whether a given year is classified as a “dry year” in terms of demand.</p> <p>In its letter to DRD NI Water advised that it proposed to keep 2008-2009 as the base year for the Final WRMP; DRD’s response to this letter did not comment on this proposal.</p>
	The Draft Plan assumes all PC10 strategic transfers will be completed by the end of 2012-13. Considering budget cuts, is this still the case? Will there still be adequate strategic transfers to maintain adequate supply?	Assumptions on delivery of strategic transfers have been reviewed and where necessary updated for the Final WRMP. Some of the transfers have already been implemented and decisions have been made on operational grounds to implement other schemes.
	The peak week for demand was actually in February/March 2009 yet this is dismissed as probably being due to leakage events. Is there a reason to believe this other than the unexpected occurrence of the peak week at that time of the year?	Most recent Distribution Input data has been reviewed to inform the Final WRMP. Leakage, (including both company and customer side losses) remains the most probable explanation of peak demands occurring during the winter. This is not necessarily associated with “dry-year” demand conditions on which a WRMP is based.
	Scenario Beta was chosen as the most likely scenario for the future of Northern Ireland despite predicting high economic growth. Can this be justified bearing in mind the current economic climate?	<p>Assumptions drawn from the material Appendix C, Section C 4.3 were reviewed for the Final WRMP.</p> <p>Increased demands are not a major driver for the WRMP, especially in the early years of the planning process. Climate change assumptions on demands will need to be reviewed in the annual reviews of the WRMP and taking the ongoing UKWIR project on climate change and demands.</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	Last line on page should read: "Food and drink manufacturing – sector may actually grow <u>from</u> 2008-09 onwards;"	Comment noted
	It is good to see that extreme weather events are being considered when assessing the effects of leakage on headroom.	Comment noted
Department of Communications, Energy and Natural Resources	The Department of Communications, Energy and Natural Resources have no comments / observations to make at this time. This is without prejudice to the comments from Inland Fisheries Ireland (see below).	Comment noted.
Environmental Protection Agency (EPA)	A glossary of terms should be included in both documents to define the concepts in the main text such as Distribution Input, Deployable Output, Water Resources Zone, AIR Reporting, Base Year, etc.	A glossary appropriate to the SEA was included on Page 7 of the SEA Environmental Report. The SEA Environmental Report is on the Draft WRMP – it will not be updated or reissued. A glossary of terms relevant across the WRMP and SEA has been included in the SEA Environmental Statement and Final WRMP.
	There are no clear objectives listed in the Draft Plan and they differ somewhat with the objectives outlined in the SEA Environmental Report. The objectives of the WRMP should be revisited, clearly defined and consistently presented in both the Draft Plan and SEA Environmental Report.	The overall objectives of the WRMP are to ensure that the supply of water for the 25 year period, subsequent to the publication of the plan and the provision of the required funding, is achieved in a manner that provides a balance between supply and demand taking account of economic cost, as well as social and environmental impacts.
	In both the Draft Plan and the Environmental Report a figure should be considered for inclusion to show the boundaries of Northern Ireland's river catchments so that the relationship with the WRZs can be clearly seen. An additional figure should also be included to show the boundaries of the river basin districts with respect to the WRZs.	Consideration was given to inclusion of a figure to depict the boundaries of Water Resource Zones in relation to river catchments, in addition to a figure depicting the Water Resource Zones and river basin districts. However, after consideration, these figures have not been included in the Final WRMP or SEA Statement as the Water Resource Zones are not 'natural' areas – they are areas defined as 'the largest possible zone in which all resources, including external transfers, can be shared and hence, the

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
		zone in which all customers will experience the same risk of supply failure from a resource shortfall'. These zones can vary in size depending upon the number of sources and the configuration and operation of the supply network and essentially are 'artificial constructs'. In short there is no correlation or conclusion to be drawn between comparison of these areas and natural areas such as river catchments.
	As indicated above the objectives of the Draft Plan need to more clearly stated early on and used consistently throughout the report.	See response above relating to objectives of the WRMP.
	Consideration should be given to assigning suitable nomenclature to enable specific Policies/ Objectives in the Plan to be clearly labelled and identifiable e.g. WMP 01etc.	<p>Comment noted. Each potential Option was provided with suitable nomenclature within the Draft WRMP (see for example Section 8.2 of the Draft WRMP). This nomenclature was carried through the process of developing the WRMP. However, although listed in the Short Listing Table 7.1 of the Environmental Report (see Chapter 7 of the Environmental Report), and used in the text descriptions of the short listed Options in Chapter 8 of the Environmental Report, this nomenclature was missed due to a typographical error in the 'long list' of Options provided in the Environmental Report (see Section 6.1 of the Environmental Report) and was not included in the Table of final Options in the WRMP (Table 9.1 of the Environmental Report). The nomenclature has been included in this SEA Statement in order to make cross referencing between this SEA Statement and Final WRMP easier</p> <p>This issue will be addressed more clearly in future WRMPs.</p>
	Two major uncertainties that not have been accounted for the in the Draft Plan. These are (1) any changes to abstraction licence conditions to meet the requirements of the WFD, so called sustainability reductions, and (2) any changes to water charging policies, e.g. metering of domestic customers. If further information is available on these issues before finalising the Plan they should be included. Otherwise, these issues should be addressed in the	It is acknowledged in the WRMP that the Plan has been developed against the backdrop of a number of uncertainties (see for example Section 6 of the WRMP). Updated information on the resolution or clarification of these uncertainties has not become available within the timescale for the Final WRMP. Therefore these issues will be reviewed at the time of annual reviews. It is important to note that

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	next review of the WRMP.	resolution of these uncertainties e.g. issue of domestic charging is outside the scope of the WRMP and are subject to considerations beyond the control of NI Water. NI Water's approach to these uncertainties is set out in its letter to DRD dated 13 th April 2011.
	The focus of the Plan is limited to securing water supply during dry conditions. Freeze-thaw conditions as experienced for the last two winters are considered outside the scope of the WRMP. Similarly it is not clear how the plan will address flooding events, which may impact on the operations of WTW. If these extreme conditions are considered beyond the scope of the Plan some indication should be provided as to how these conditions are addressed by other plans or programmes.	Comment noted. Historic events, such as flooding of WTWs, fall under the category of unplanned outage events. It is expected that these extreme risk issues are being addressed through UKWIR R&D and any recommendations would feed into updated Water Resource Planning Guidance and thus identify best practice. This would therefore be addressed in future reviews of the WRMP.
	Similarly, a shortcoming in the modelling approach to climate change is that it is focused on potential impacts during dry periods and ignoring extreme events. There may be merits in extending the scope of the modeling, as appropriate, to examine the potential for climate change to impact on the frequency and magnitude of extreme weather events such as the recent Freeze-Thaw conditions and flood events.	Comment noted. United Kingdom wide research is examining potential climate change impacts on the frequency of extreme events and how this should be considered in long-term infrastructure planning. Future revisions / updates of the WRMP would utilise the latest research / available models on this issue.
	Water efficiency options appear to be limited to public relations campaigns. While these are useful activities, it is recommended that consideration be given to other water efficiency measures such as new building regulations to make homes more efficient in water use.	NI Water intends to adopt a more pro-active approach to water efficiency in the next Price Control period; the scope and programming of an enhanced initiative will depend on an appropriate level of funding. While new building regulations would aid the aim to increase water efficiency and could influence aspects of a WRMP, the development of new building regulations is outside the scope of the WRMP. NI Water will implement its Water Demand Management Strategy (WDMS) to promote water use efficiency.
	The benefits of a rainfall-runoff model to both improve the assessment of current water resources (through the application of a	Comment noted. NI Water will continue to work with NIEA to better understand historic flow regimes and other issues

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	<p>longer rainfall time series) and the assessment of projected climate change impacts on river flows are clearly stated. While such a model is considered beyond the scope of this plan it could be included as an action by way of a specific Policy /Objective to inform any interim review of the Plan and/or subsequent Plan updates.</p>	<p>associated with the NIEA-led abstraction licence review.</p>
	<p>There would be merits in indicating the relevant plan / programme which will address with the items in Table 1.1 listed as outside the scope of the WRMP, this is of particular relevance in the context of sewage.</p>	<p>Comment noted. The WRMP will be subject to review as a minimum every 5 years and an SEA of this review carried out. Further exploration of plans and programmes relevant at that time will be made.</p>
	<p>The Environmental and Social Baseline could be improved through the inclusion of more quantitative assessments of the current status of each SEA Topic. For example, in Biodiversity, for SACs it could be stated, if known, whether these sites are currently achieving Favourable Conservation Status.</p>	<p>Comment noted. The WRMP will be subject to review as a minimum every 5 years and an SEA of this review carried out. A full exploration of the environmental baseline conditions prevailing at that time will be made.</p>
	<p>Concerning the SEA Objectives a number of recommendations are suggested in Section 3.5 of this report including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> It is recommended that Objective 2B be re-phrased to read “Support sustainable economic development”. Similarly the Key Question should read “Will the WRMP help to ensure supplies of water for increased sustainable economic activity?” <input type="checkbox"/> In Objective 4A, the description and key questions for the SEA Topic “Soils (inc. agriculture)” is too narrow and only focuses on agriculture. Soil is an environmental medium in its own right like water and air and should be protected accordingly. It is not appropriate for a SEA Environmental Report to solely aim to support a particular sectoral interest. Particularly when that sector could result in further impact on the wider environment (e.g. increased diffuse pollution). <input type="checkbox"/> In Objective 7B concerning reducing vulnerability to climate change there is no equivalent Key Questions. Both Key Questions concern energy use. The issue of how the WRMP will reduce vulnerability to climate change should be addressed. 	<p>Comments noted. The WRMP will be subject to review as a minimum every 5 years and an SEA of this review carried out. As part of this process, a review of SEA Objectives and related key questions will be carried out. These revised objectives and key questions will be tested in the SEA process against the environmental, regulatory, technical and cost issues pertaining at that time.</p> <p>Comment noted regarding Soils & Agriculture. In future reviews of the WRMP and associated SEA, Soils should be addressed as a separate entity as per air and water. A review of the potential for the Options in the WRMP to impact on soil has been carried out and it is considered that for the Options contained in the WRMP, no major impacts over those already identified in the Environmental Report will be experienced. Impacts on soil from Options in the WRMP are considered most likely to occur during the construction phase of any project. Careful adherence to suitable mitigation (such as that detailed in Appendix A of the</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	<p>□ In Objective 8A concerning Material Assets only energy is used and the key questions are identical to Objective 7A. Infrastructure should also be addressed, e.g. will infrastructure developed for the WRMP result in environmental impacts?</p>	<p>Environmental Report) would be required in order to ensure that impacts on soils during construction are minimised. This would include measures such as the careful storing of topsoil during pipeline operations in order to ensure that it can be reused on site.</p> <p>In relation to the issue of the WRMP and climate change, it is an accepted fact that Northern Ireland's climate is changing, along with that of the rest of the world. What is not known though, is the extent to which these changes will occur and the precise implications for Northern Ireland. It is anticipated that some climate changes will become more apparent / observable over the life span of the Plan i.e. over the next 25 years and it is thought likely that this will bring more intense challenges to NI Water. It is considered that a number of the Options within the plan will strengthen the robustness of the water supply network and therefore allow NI Water greater operational flexibility in meeting challenges brought about by climate change. Leakage reduction will also allow greater and more efficient use of resources already being utilised. These Options within the WRMP will therefore help reduce vulnerability to a changing climate within Northern Ireland.</p> <p>Approaches to the issue of Climate Change are changing constantly and information and prediction models are refined and updated on a regular basis. Any future reviews of the WRMP will utilise these updates and new approaches and allow the Plan to be adapted in light of a better and clearer understanding of likely impact.</p> <p>In relation to the potential for infrastructure developed for the WRMP causing environmental impact, as noted in the Environmental Report (see for example Table 9.3) and this SEA Statement, it is considered that there is a potential for environmental impacts to occur mainly at the construction stage. A series of generic mitigation measures are contained</p>

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	<p>The need for an Article 6 / Habitats Regulations Assessment appears to be limited to whether an option is located in a Natura 2000 site. Abstractions take water from a catchment area and therefore the zone of influence of an abstraction may be a distance away from the actual abstraction point, in particular downstream of the abstraction point. A more comprehensive consideration of the potential impact of abstractions should be included where possible, including cumulative/ in-combination impacts.</p>	<p>within Appendix A of the Environmental Report and it is proposed that when further technical details of individual schemes are known, then these generic mitigation measures can adapted in light of particular circumstances to become site / project specific.</p> <p>As noted in this SEA Statement, only one Option in the Draft WRMP was known at this stage to be located within a Natura 2000 site (the Option to increase abstraction from Lough Neagh at Dunore Point WTW by 10MI/d). An Article 6 / Habitats Regulation Assessment was carried out previously (by Mott McDonald in 2005) into proposals to increase abstraction from Lough Neagh. This HRA demonstrated that no impact on the Natura 2000 site would occur. Note that this Option has not been carried through to the Final WRMP.</p> <p>It is recognised that the other Options contained within the WRMP may also impact on Natura 2000 sites, even when these may not be directly within the site. As such a HRA Stage 1 Screening Exercise has been carried out of the WRMP and is reported as Atkins Report 5079991/264/DG/093. It is important to note that while the SEA process and HRA inform each other, they are a quite separate process and as such the HRA Stage 1 screening exercise is reported separately.</p> <p>As noted at present in relation to the Options for Leakage Reduction as well as Strategic and Other Transfers, there is uncertainty as to which Natura 2000 sites may be impacted and the level to which these impacts will occur. These issues can only be determined satisfactorily following a number of detailed technical studies. Therefore the issue of Habitats Regulation Assessment is to be revisited when further details of each individual scheme are being developed.</p> <p>It should also be noted that a UKWIR are carrying out a review and update on existing guidance in relation to SEA</p>

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		<p>and HRA is due to be published in July 2011. This guidance will be considered in any future review of the WRMP and associated SEA.</p> <p>See Section 3 of this SEA Statement for further details of how HRA was considered in relation to the WRMP.</p>
	<p>The SEA objectives should be linked with specific targets. This will provide a mechanism to assess whether the specific objectives have been met or the extent to which progress has been made in achieving the desirable targets.</p>	<p>The SEA Objectives are derived from the identified key environmental issues, trends and problems in Northern Ireland (see Section 4.1.13 and Chapter 5 of the Environmental Report). As noted, it was considered that there was a potential for the WRMP to interact with the key environmental issues, trends and problems identified. However, these issues are also subject to a wide variety of other factors outside the scope of the WRMP or remit of NI Water.</p> <p>It was considered therefore that it would be very difficult to meaningfully 'score' how the WRMP has performed against a specific objective linked target (as it would be very difficult or impossible in some cases to differentiate between an impact caused by the WRMP and an impact caused by another factor). Rather it was considered that it would be more useful to assess how each Option 'performed' against an objective i.e. would it have a positive, negative or neutral effect.</p>
	<p>The proposed SEA monitoring is limited and generally determined to be unnecessary. Since the stated aim of the monitoring is to identify any unforeseen adverse effects due to implementation of the plan, it is not clear how this can be achieved without an adequate monitoring programme. It should be noted that it is not necessary for NI Water to carry out all monitoring. Other agencies monitoring programmes can be used for SEA monitoring purposes, e.g. NIEA's water quality monitoring programme could be used to monitor Objective 5C.</p>	<p>Comment noted. Following consideration of this comment and others received, the monitoring detailed in Section 8 of this SEA Statement has been enhanced from that proposed in the Environmental Report. In particular, greater use will be made of monitoring carried out by other bodies. The issue of monitoring will also be a feature of regular discussion within the NIEA / NI Water Working Group.</p> <p>It should also be noted that as environmental impacts from Options contained within the WRMP may only be</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
		<p>experienced during their construction phase and full details of the construction issues are not yet known, it is proposed that the issue of monitoring is considered in light of conditions prevailing at each particular construction site. For example, if there is a requirement to construct within a designated area, then it may be appropriate for a programme of monitoring to be implemented for that construction period. If warranted, this issue could be discussed further with NIEA at the appropriate time, when further details of the construction issues are known.</p>
	<p>The Draft Plan and the SEA assessment will need to be updated when the two uncertainties of Sustainability Reductions (review of abstraction licences) for the WFD and changes in water charging policy are clarified.</p>	<p>There will be a formal review of the WRMP at least every 5 years (or before if there is a 'Material change of circumstances'), with a short review held annually. A review of the SEA will take place concurrent to the production of the revised WRMP (i.e. in 5 year cycles).</p> <p>Either or both of the uncertainties raised in this comment would constitute a 'material change of circumstances' and would therefore trigger the preparation of a new WRMP and associated SEA (if considered to be appropriate).</p>
Freshwater Task Force	<p>The Task Force would seek clarification on the decision not to consider 'critical period scenario' for Northern Ireland, justified by the fact that supplies are dominated by abstractions from Lough Neagh. It is apparent that in certain circumstances, such as those identified in the Derg/Strule case, supplyside characteristics have a significant impact on the supply demand balance. Therefore, we would ask for further explanation on the circumstances where consideration of 'critical period scenario' would be appropriate and why this is not the case for Northern Ireland.</p> <p>The Task Force recommend that NI Water develop specific policies on both customer and environmental Target Levels of Service in order to ensure consistency in service with water undertakers in England and Wales. Whilst to date, "the concept of customer-side restrictions on discretionary use... is not considered by NI Water</p>	<p>A separate Annex on security of supply issues is included with the Final WRMP documentation.</p> <p>Recommendation noted. Issue expected to be taken forward through discussion with DRD, NIEA and NIAUR (see letter to DRD dated 13th April 2011), but has not been started within the timescale of the Final WRMP.</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	<p>and its customers to be relevant”, given the predicted deficits in supply-demand balance, it is likely that this issue will become more “relevant” within the timeframe of the Plan. Furthermore, in light of the Derg/Strule abstraction proposals, an environmental Target Level of Service which “relates to the frequency of relaxations to conditions of abstraction licences” also appears to be pertinent.</p>	
	<p>The Freshwater Task Force is very concerned about the lack of input from Northern Ireland Environment Agency with regard to the impact of changes to abstraction licenses in line with Water Framework Directive. It is apparent that Sustainability Reductions have the potential to significantly impact Deployable Output (DO) and hence, limits the usefulness of the proposals outlined in this document. Therefore, a programme of work would be required to assess this impact. We suggest that it is imperative that NIEA should make known their intentions and that the public should have the opportunity to consult on the revised draft in light of this information.</p>	<p>Comment noted. The analyses used in the development of the WRMP are based on current regulatory requirements, policies and abstraction licences. It is expected that NIEA will lead a review of abstraction licences over the coming years. Any changes to abstraction licences would be incorporated into a new WRMP.</p> <p>Note that the WRMP has a short review annually, with a formal review every five years or before if there is a ‘Material change of circumstances’. The introduction of ‘Sustainability Reductions’ would represent a material change of circumstances.</p>
	<p>The Freshwater Task Force would support the use of long time series of river flows to determine DO, acknowledging that due to limited data availability in Northern Ireland, an extensive work programme would be required to generate such data. It is our view that the benefits of more representative and resilient analysis would be worthwhile.</p>	<p>Comment noted and agreed. The scope and timing of work will need to be considered by NIEA for its abstraction licence review.</p>
	<p>Given the unavailability of reliable data, it would appear to be necessary to incorporate some margin for error in the level of unplanned outage allowance. The Task Force seeks more information about the advantages and disadvantages of setting a higher, more cautious allowance for outage.</p>	<p>Outage allowances have been reviewed for the Final WRMP.</p>
	<p>The Task Force queries the reasoning that dry years have no or little effect on non-household demand for water. For example, it would seem likely that demand for water from some non-household</p>	<p>NI Water’s WRMP relates to the provision of public water supplies to its own customers; these may include customers in the farming sector.</p>

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	<p>sectors such as farming, would significantly increase. Further information, preferably in the form of statistics, is requested. As stated, reporting non-domestic customer demands by SIC would be informative.</p>	<p>NI Water's billing system does not provide detailed consumption data under different SIC codes. A breakdown of consumption by main sector is given in Appendix C, Table C.16.</p>
	<p>The Task Force would suggest that the Water Resource Zones should take into consideration the Water Framework Directives River Basin Management Plans and should be respectful of the programme of measures within these. We would like to see some evidence of this in the Plan.</p>	<p>In common with water industry best practice, WRZ boundaries do not necessarily follow topographic catchment boundaries. The SEA Environmental Report refers to RBMPs and details how it is anticipated that the WRMP interacts with these (see Section 3.1.8 of the Environmental Report). As such, the programme of measures detailed in the RBMPs was considered in the development of the WRMP. Section 2.3 of the Final WRMP will make reference to this.</p> <p>As noted above in response to the question from the Environmental Protection Agency on comparing the boundaries of WRZ against river basin districts, consideration was given to inclusion of a figure to depict the boundaries of Water Resource Zones in relation to river catchments, in addition to a figure depicting the Water Resource Zones and river basin districts.</p> <p>However, after consideration, these figures have not been included in the Final WRMP or SEA Statement as the Water Resource Zones are not 'natural' areas – they are areas defined as 'the largest possible zone in which all resources, including external transfers, can be shared and hence, the zone in which all customers will experience the same risk of supply failure from a resource shortfall'. These zones can vary in size depending upon the number of sources and the configuration and operation of the supply network and essentially are 'artificial constructs'. In short there is no correlation or conclusion to be drawn between comparison of these areas and natural areas such as river catchments.</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	<p>Chapter 5 focuses on explaining the techniques used to estimate the effect of climate change on supply and demand balance. The Task Force recommends that the data used to inform demand analysis needs to be specific to Northern Ireland, rather than relying on proxy estimates based on UK data, for example. We would like to see the CCDeW research extended to Northern Ireland. In addition, further explanation of Figure 5.7 which presents the impact of climate change on supply and demand balance is warranted to address the implications of these results.</p>	<p>Comment noted. NI Water understands that the issue is being considered by the UK Water Industry in its review of R&D to inform the next planning round. NI Water will continue to contribute and participate in research as appropriate to ensure the applicability of results to Northern Ireland.</p>
	<p>The Freshwater Taskforce recommends that a much greater emphasis is placed on demand-side options than currently presented in the plan. In particular:</p> <ul style="list-style-type: none"> • Much greater emphasis should be placed on promoting water efficiency measures and this campaign should be carried out in collaboration with other interested groups, for example, government departments and relevant NGOs so that a concerted effort and consistent message is conveyed. Making water audit kits and water efficiency tools more widely available to the public would enhance water efficient behaviour and increase awareness about the need to use water sustainably. 	<p>NI Water intends to adopt a more proactive approach to water efficiency in the next Price Control period; the scope and programming of an enhanced initiative will depend on an appropriate level of funding.</p>
	<p>We acknowledge that it is beyond the powers of NI Water to introduce a water charging scheme. However, we have a number of comments on the potential scenarios presented in Chapter 8:</p> <ul style="list-style-type: none"> • The assumption that meter optant rates would be 1% based on rates in England and Wales does not take account of the fact that customers have not previously been charged for water in Northern Ireland. We suggest that these optant rates for metering would be much higher as, given that customers would now have to pay directly for water in this scenario, a larger proportion of customers would rather pay for what they use rather than pay for water based on property values. • Section 9.3 states that metering is not a cost effective option due to the high cost of meter installation and operation. We would question the period of time over which these costs are projected. 	<p>Comments noted. NI Water will continue to work with DRD and NIAUR on issues relating to the introduction of water charging and the potential impacts on demand.</p> <p>Options appraisal and investment modelling considers the whole life costs over the whole of the planning period; the costs of metering are considered on a consistent basis with all other options.</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	<p>Unlike other options, the benefits of metering would be experienced over a much longer time period, thus reducing the real costs.</p> <ul style="list-style-type: none"> • The Water Framework Directive calls for water pricing policies that provide adequate incentives for users to use water resources efficiently and contribute to reaching high quality status in water bodies across Northern Ireland. Therefore, it is essential that water charging to domestic customers is introduced. 	
	<p>The Task Force note with concern the heavy reliance on supply side mechanisms to ensure adequate provision of water. In particular, increasing levels of abstraction and strategic transfers, will only address water supply issues up to a limited capacity.</p>	<p>Comment noted. However, under the current abstraction licensing regime, transfers and leakage reduction maintain an appropriate supply demand balance. Future changes to abstraction licences (e.g. through ‘Sustainability Reductions’) will change the balance, and would be a “material change in circumstances” that would trigger a new WRMP.</p> <p>Note that the WRMP has a short review annually, with a formal review every five years or before if there is a ‘Material change of circumstances’. The introduction of ‘Sustainability Reductions’ would represent a material change of circumstances.</p>
	<p>The Freshwater Taskforce is concerned about the high leakage rates and the assumption that once leakage has been reduced to the target level of 166Ml/d by 2012-3, no further improvement is forecast. Given that Northern Ireland Water is the largest consumer of energy, we believe that it is imperative to reduce the amount of public money that is quite literally being washed down the drain. We believe that an ongoing programme to reduce leakage is a key to improving environmental performance whilst reducing costs and helping to address the predicted deficits in the supply demand balance.</p>	<p>Leakage savings and associated costs have been updated by NI Water’s leakage team; the latest analysis with revised targets and dates for implementation have been used for the Final WRMP (Section 4.3.4).</p>
	<p>We have reservations about the environmental impact on environmentally sensitive areas such as Lough Neagh and about the assumption that no environmental costs are incurred from</p>	<p>Comment noted – It has been shown in a detailed Environmental Impact Assessment and Habitats Regulation Assessment (both carried out by Mott McDonald in 2005 and</p>

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	<p>increasing abstraction levels. The Task Force suggest that more comprehensive and stringent analyses of the environmental costs for each of the options is required. We suggest that a section which summarizes the findings of the SEA report be incorporated in the Plan so that it is clear exactly how the SEA results have informed the preferred strategy.</p>	<p>entitled “Increased Public Water Supply Abstraction from Lough Neagh 2005 – 2015”) that abstraction in excess of the amount of 10MI/d identified for any of the Lough Neagh WTWs will not change the physical characteristics of Lough Neagh. As noted in the Mott McDonald EIA in a letter from Rivers Agency dated 8 August 2005 in response to the above studies Rivers Agency (who operate the sluice gates at Toome) stated that they “<i>accept the conclusions reached that the abstraction proposals have no significant impact on water levels</i>”.</p> <p>Further reference to that report and its conclusions is made in Section 8.5.1 of the Final WRMP.</p>
	<p>We are gravely concerned about the plans relating to the abstraction licence for Derg WTW through increased abstractions levels from the Rivers Strule and Derg which are protected areas under the Habitats Directive. We do not believe that all of the conditions set out in Article 4.6 have been met and therefore, these plans would indicate a breach of the Water Framework Directive. For example, we would ask where in the North Western River Basin Management Plan reference has been made to this proposal. We request information on exactly how the five conditions set out in Section 4.6 of WFD have been addressed. We strongly suggest that alternative solutions are considered to tackle the problems of water scarcity in this area.</p>	<p>Increased abstraction from the River Derg and a new abstraction from the River Strule have been the subject of a series of studies and discussions with a wide range of consultees (including notably NIEA and Loughs Agency) over a number of years. These studies included both an Environmental Impact Assessment and Habitat Regulation Assessment. These studies and the necessary public consultation under the relevant legislation culminated in an application for Water Rights for both the River Derg and River Strule being granted under the terms of Article 11 of the Water and Sewerage Services (Northern Ireland) Order 1973 in March 2007. In April 2010, following further public consultation and other procedures as required under the relevant legislation, a licence was granted by NIEA Water Management Unit to NI Water to allow the abstraction of up to 26.6MI/d from either river, or a combination of both rivers. On 1st September 2010 Planning Permission was also granted by DoE Planning Service for the construction and operation of a pumping station and associated pipeline to be constructed to link an abstraction point on the River Strule with Derg WTW.</p> <p>The SEA Environmental Report refers to RBMPs and details</p>

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		<p>how it is anticipated that the WRMP interacts with these (see Section 3.1.8 of the Environmental Report). As such, the programme of measures detailed in the RBMPs was considered in the development of the WRMP. The Final WRMP will make reference to this. As noted on Page 80 of the North Western RBMP Summary, the River Basin Management Plans will be implemented through Local Management Areas, utilising Local Management Area Plans. The plan which will cover Lough Melvin & Arney, Strule and Faughan will be implemented in 2012. As such, this cannot be considered in this WRMP, but will be considered in future reviews.</p> <p>A separate Annex on Security of Supplies in West WRZ has been included in the Final WRMP documentation</p> <p>NI Water continues to participate in the NI Water / NIEA working group that considers abstraction licence issues.</p>
Inland Fisheries Ireland (IFI)	<p>Rivers by their very nature provide natural boundaries, so it is no surprise that a significant number also form political boundaries and their catchment areas and channels cross these boundaries. It is worth noting that the two of the lowest EPA water quality ratings within the southern portion of the Neagh-Bann iRBD, are at South Bridge Dunfelimy on the Upper Fane and at Jonesborough Bridge on the Ballymascanlon River. Both of these sampling sites are situated directly after the waterbody in question crosses the border. While this is not likely to directly affect the quality of water supplies in Northern Ireland, we hope that issues such as these are taken into account when NI Water are developing plans to improve water quality.</p>	<p>Comment noted, but water quality issues are outside the scope of the WRMP.</p> <p>As a business NI Water is closely reliant upon the quality of the natural environment and strives to protect it by working in an environmentally responsible manner, demonstrating high standards of environmental care and operational performance. As such NI Water is committed to continue its substantial Capital Investment Programme to work towards full compliance with all relevant environmental legislation, regulatory obligations and standards. This commitment is noted in NI Water's Environmental Policy which can be viewed at the following weblink:</p> <p>http://www.niwater.com/environmentalpol.asp</p>
	Any future increases in water abstraction to be carried out by NI	Comment noted. The SEA Environmental Report did not

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	Water must be referred to the relevant authority in the Republic of Ireland for consultation, if it has the potential to affect the levels of any surface water bodies south of the border.	identify any cross-border impacts of options proposed for the WRMP. Consultation was carried out with the relevant consultation bodies in the Republic of Ireland during development of the WRMP and associated SEA. See Section 2.2 and 9.4 of the Environmental Report.
Loughs Agency	Loughs Agency is encouraged by the approach in relation to the non-development of new river/lake/groundwater abstractions, as well as no new reservoirs	Comment noted.
	The Agency considers the main drive for NI Water must be leakage control. In addition, the plan appears to exclude further domestic water efficiency measures. However, the Loughs Agency feels that this option should be reconsidered.	NI Water intends to adopt a more proactive approach to water efficiency in the next Price Control period; the scope and programming of an enhanced initiative will depend on an appropriate level of funding. The costs and benefits of all options to maintain the supply demand balance are considered on a consistent basis.
	In terms of the strategic transfer proposed between Castor Bay and Newry, the Agency would question what biosecurity measures have been considered by NI Water, as well as the curtailment of the spread of invasive species between catchments. Furthermore, the proposed extraction of water from Carmoney to Strabane causes the Agency some concern, given the dual extraction and increased volume of extraction from the River Faughan and Tributaries Special Area of Conservation (SAC). The Loughs Agency would stress that NI Water must ensure that sufficient water remains in the river to allow the free passage of fish, including Atlantic salmon, trout, eels and lamprey. Indeed, the increased volume of abstraction may decrease the available dilution for Drumahoe Sewage Treatment Works, resulting in potentially increasing the pollution threat and the possibility of causing gender transformation of indigenous fish species.	<p>As noted in Section 8.1.5 (Page 148) of the Environmental Report, the Strategic and Other Transfers involve the transfer of treated and not raw water i.e. water will be abstracted and treated to potable standard prior to onward transfer.</p> <p>As noted in the Generic Mitigation Measures contained in Appendix A of the Environmental Report (Page 201), Northern Ireland has been subject to the impact of many invasive species, including for example Zebra Mussels. It is proposed that an Environmental Management Plan (EMP) be prepared for the construction phase of any project derived from the WRMP. This EMP will utilise and expand upon the guidance contained within Appendix A in relation to invasive species.</p> <p>The requirements for any changes to abstraction licences will be addressed in the NIEA-led review of abstraction licences which will be undertaken outside the timescale of the Final WRMP. The introduction of environmental</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
		<p>conditions to existing abstraction licences would be a “material change of circumstances” and therefore trigger a new WRMP.</p> <p>Water quality issues are outside the scope of a WRMP though as noted previously as a business NI Water is closely reliant upon the quality of the natural environment and strives to protect it by working in an environmentally responsible manner, demonstrating high standards of environmental care and operational performance. As such NI Water is committed to continue its substantial Capital Investment Programme to work towards full compliance with all relevant environmental legislation, regulatory obligations and standards. This commitment is noted in NI Water’s Environmental Policy which can be viewed at the following weblink:</p> <p>http://www.niwater.com/environmentalpol.asp</p>
	<p>The Loughs Agency is concerned that groundwater and the aquifer beneath the River Faughan maybe contaminated from historical landfill activities in the Carmoney to Mobouy area, and any proposed increases in abstraction may allow infiltration of these contaminants into the main passage for migratory fish and impacting their olfactory system.</p>	<p>It should be noted that any scheme derived from the WRMP will be subject to detailed technical and environmental examination prior to construction / operation.</p> <p>Water quality issues are outside the scope of a WRMP though as noted previously as a business NI Water is closely reliant upon the quality of the natural environment and strives to protect it by working in an environmentally responsible manner, demonstrating high standards of environmental care and operational performance. As such NI Water is committed to continue its substantial Capital Investment Programme to work towards full compliance with all relevant environmental legislation, regulatory obligations and standards. This commitment is noted in NI Water’s Environmental Policy which can be viewed at the following weblink:</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	<p>The Agency would wish to see extreme low flow conditions modelled, as well as seasonal variations, in assessing the likely impacts of climate change on our rivers. Furthermore, in considering the current economic climate, does it match the proposed model? It is also important to stress that the Foyle Catchment is a shared resource with the Republic of Ireland.</p> <p>In terms of current abstractions and dewatering of rivers during dry periods, the Loughs Agency would have concerns at Ardstraw and Glenhordial. In the case of Ardstraw, we have concerns that abstraction is leaving the river dry, creating a barrier to fish migration. Likewise, the Glenhordial abstraction has on occasion dried out sections of the Killyclogher Burn, an important tributary of the Camowen catchment. This dewatering during dry periods can lead to problems for the resident trout population. The Agency would like to advise NI Water that the stream flowing into Lough Macrory is an important spawning stream for trout, this is more important as a new angling club has been established at Lough Macrory.</p>	<p>http://www.niwater.com/environmentalpol.asp</p> <p>Hydrological analysis undertaken for this WRMP has assessed the impact of climate change (based UKCP09 projections) on historic flows and the potential impact on Deployable Output.</p> <p>As and when updated climate change scenarios become available, analysis will be updated in line with industry best practice and as such would be addressed in future reviews of the WRMP.</p> <p>Trans-border issues were discussed in the SEA Environmental Report. See Section 2.2 and 9.4.</p> <p>NI Water operates its sources in line with existing abstraction licences, whose conditions are set by NIEA. In relation to the abstraction at Ardstraw (Derg WTW, River Derg), it was recognised by NI Water previously that current licensed abstraction rates could cause difficulties under certain flow conditions. As such, a new abstraction on the River Strule was proposed in order to augment supplies to Derg WTW during periods of low flow and therefore allow any abstraction related difficulties on the River Derg to be avoided. Please see the response to the Freshwater Task Force above in relation to licensing of the River Derg / River Strule Abstraction.</p> <p>Requirements for changes to existing licences are expected to be covered in the NIEA-lead abstraction licence review. This review will be undertaken outside the timescale of the Final WRMP. The introduction of environmental conditions to existing abstraction licences would be a “material change of circumstances” and therefore trigger a new WRMP.</p>
	Loughs Agency would be interested to learn of any proposed or	No measures in relation to eel passage at Banagher or

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	existing measures at Banagher and Lough Bradan reservoirs to allow free passage for eels. The Agency would also like to take this opportunity to raise its concerns to the proposed Derg/Strule abstraction scheme. We would be happy to discuss this with NI Water in the near future.	Lough Bradan are being considered at present. In relation to the River Derg / River Strule Augmentation Scheme, please see the response to the Freshwater Task Force above in relation to licensing of this scheme. Please also note that NI Water continues to engage with NIEA on abstraction issues related to the River Derg / River Strule through the joint NI Water/NIEA joint working group.
Northern Ireland Authority for Utility Regulation	We expect the final WRMP to be based on a robust assessment of sustainability reductions to meet the requirements of the Water Framework Directive and other environmental drivers.	Comment noted and agreed. Also see NI Water letter to DRD dated 13 th April 2011
	We expect NI Water to undertake a longer term assessment of hydrology for the final WRMP as there is a risk that the available flow record (29/12/1975 to 11/07/2009) is not representative of the longer term hydrology of Northern Ireland.	Comment noted and discussed with NIAUR at a meeting on 29 th March 2011; issue to be taken forward to future WRMPs.
	Further work is required for the final WRMP to ensure that the company can meet demand during critical periods. A critical period assessment should include the impact of peak winter demand based on the experience of freeze-thaw events in 2009/10 and 2010/11	Comment noted and agreed; further review and analysis to be undertaken and included in Section 4.1.3 and Appendix C.2 of the Final WRMP.
	We recommend that NI Water takes the opportunity to work with water service providers, policy makers and regulators in GB and Rol to assess the likely recurrence and impact of peak winter demand and develop a rational risk based approach to address this issue within the WRMP.	Comment noted and agreed.
	We would expect NI Water to consult its consumers on the level of service the community expects the company to deliver; the frequency at which a reduced level of service would be acceptable; the cost the community is willing to pay to mitigate the risk of infrequent interruptions to water supply.	As discussed at meeting with NIAUR on 29 th March 2011, and set out in the 13 th April 2011 letter to DRD this issue is outside the scope of the WRMP and associated SEA
	We expect the company to describe how it determined that a 17%	Discussed at meeting with NIAUR on 29 th March 2011.

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	outage allowance was reasonable	
	Following rectification of identified risks in the PPP plant, a review should be carried out of the WRMP to reflect any residual risk that the PPP plant will not deliver the contracted output during critical periods	Discussed at meeting with NIAUR on 29 th March 2011; adjustment made to headroom analysis for Final WRMP.
	Water resources in Northern Ireland rely heavily on abstractions from Lough Neagh. We recommend that an assessment is undertaken to assess the risk of deteriorating water quality in Lough Neagh impacting on water supply.	Discussed at meeting with NIAUR on 29 th March 2011; to be reviewed for future WRMPs.
	For the final WRMP, we expect the company to develop a sustainable level of leakage which takes account of the capital costs of additional water production and the cost of carbon. Until this is complete it is not possible for the company to demonstrate that the balance of additional leakage control and additional capital investment proposed in the Plan represents the least cost solution.	Comment noted and discussed at meeting with NIAUR on 29 th March 2011. Final WRMP has been informed by latest analysis and recommendations from NI Water leakage team.
	For the final WRMP we expect the company to take account of known reductions in leakage and non-household demand in its assessment of the dry-year factor included in the Plan.	Discussed at meeting with NIAUR on 29 th March 2011
	The extensive use of trunk mains to distribute small surpluses from one water resource zone to address a small deficit in another zone causes us some concern. Alternatives may exist and these should be considered at a high level in the final WRMP as well as the incremental introduction of trunk-mains.	Discussed at meeting with NIAUR on 29 th March 2011; TMM has been used to inform the preparation of Final WRMP.
	The long term need for additional trunk mains to improve the resilience of the system should be addressed. We would expect the final WRMP to consider this in some detail providing a statement of the costs and benefits of each trunk main and demonstrating that the assessment has considered the issues outlined above and that the trunk-main can improve resilience under extreme conditions of supply and demand.	Discussed at meeting with NIAUR on 29 th March 2011; noted for consideration in preparation of Final WRMPs and under the Single Source Watermains Project Appraisals and the resultant Major Incident Mitigation Projects which focussed on the District Meter Area (DMA) scale.

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	NIW have highlighted the advantage of constructing trunk mains between water resource zones to improve the resilience of the water supply system, an objective that we endorse.	Comment welcomed.
	For the final WRMP we expect the company to address the uncertainty in its estimates of leakage control to produce a robust estimate of cost and benefits. This should be carried out in conjunction with the company's assessment of a sustainable long term economic level of leakage.	Comment noted and discussed at meeting with NIAUR on 29 th March 2011; Final WRMP has been informed by latest analysis and recommendations from NI Water leakage team.
	The decommissioning of Camlough WTW should be economically justified in the final WRMP including the impact on the timing of the Castor Bay to Newry Link Main.	Discussed at meeting with NIAUR on 29 th March 2011; noted for more detailed analysis and justification before the scheme could proceed to more detailed planning and design.
	In relation to the proposed transfers to the Central WRZ, we would expect the company to assess whether constructing one of the two proposed pipe with sufficient capacity to meet the projected demand would provide a lower cost solution.	Discussed at meeting with NIAUR on 29 th March 2011; more detailed analysis has been undertaken using the TMM. .
	Any further work to refine the scope of the proposed transfers to Central WRZ should include leakage reduction in the further review of options.	Discussed at meeting with NIAUR on 29 th March 2011; noted for more detailed analysis and justification before scheme proceeds to more detailed planning and design.
	We understand that the assessment of supply and demand in the draft WRMP assumes that there are no constraints on the distribution of water with each of the five Water Resource Zones considered. We understand that the company is carrying out further analysis of its trunk main network to determine whether there are any constraints on the transfer of water within water resource zones. We would expect NI Water to complete this work for all Water Resource Zones and review the preferred options identified in the draft WRMP in light of these further investigations before finally selecting and proceeding with preferred options to enhance supply.	Discussed at meeting with NIAUR on 29 th March 2011; noted for more detailed analysis and justification before scheme proceeds to more detailed planning and design.
	For its final Water Resources Management Plan, NI Water should consider the current guidance on the valuation of energy use and	Discussed at meeting with NIAUR on 29 th March; noted for review and incorporation into the Final WRMP.

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	greenhouse gas emissions for appraisal and evaluation and test whether this has an impact on the selection of options. The company should identify where the outcome of the economic evaluation has been changed by including a cost of carbon and the additional cost which will be incurred by consumers as a result.	
NIEA	Stated that NIW are licenced to abstract 773 MI/d – NIEA estimates this figure to actually be 1100 MI/d	Error in Non-Technical Summary of Draft WRMP noted; 773 MI/d is the deployable output not the licensed total. This has been corrected for Final WRMP.
	NIEA currently require NIW to submit management plans for abstractions and will review abstraction licences over the next few years	Comment noted and the subject of ongoing discussions in the NI Water/NIEA joint working group.
	Issue relating to increased abstraction from Dunore Point – it is incorrect to assume that this is covered by the total licensed abstraction from Lough Neagh. However, the license strictly limits maximum abstraction to each WTW. Any increase will require a formal request for the licence to be reviewed and full determination by NIEA.	Our consideration in the SEA of the potential environmental impacts of increased abstraction at Dunore Point and/or the other WTWs included in the Lough Neagh abstraction licence was heavily influenced by consideration of a number of Environmental Statements completed previously. These concluded that abstraction up to the level proposed would not cause a detrimental environmental impact. These environmental statements will be forwarded to NIEA as requested, though it is noted that at this stage a formal request for the licence to be reviewed has not been made by NIW. Note also that the Option for increased abstraction has not been brought forward to the Final WRMP.
	With ref. to Section 2.7 of the WRMP and in particular the statement regarding customer level of service, NIEA understand that prolonged drought events should be planned for within the Drought Contingency Plans as set out in the Water and Sewerage Services (Northern Ireland) Order 2006. NIEA do not agree that the two target levels relating to customer restrictions and environmental targets are not relevant in Northern Ireland	As noted in the Non Technical Summary to the Final WRMP, the WRMP will be complemented by the company's Drought Plan which will set out the short-term operational steps that the company will take if a drought develops which increases the risk to security of supplies and whether capital investment is needed to mitigate against such events.
	Assumption in WRMP that groundwater sources are out of supply though anecdotal evidence suggests otherwise. This scenario has not been taken into account when planning for drier periods. Also	Comment noted; NI Water will review its current groundwater abstraction licences and appropriate reference to these has been made in the Final WRMP.

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	groundwater can be easier to protect from pollution than surface water.	One reason for abandoning small groundwater sources has been their vulnerability) particularly in built-up areas not served by main sewers) to pollution from soakaways and septic tanks.
	There is a need for more river flow monitoring to be established by NIW to capture inflows and outflows, in particular at reservoirs.	Comment noted and the subject of ongoing discussions in the NI Water/NIEA joint working group.
	There is no mention of current impoundments / reservoirs being designated as Heavily Modified Water Bodies under the Water Framework Directive and the implications of achieving good ecological potential	The issue of the Water Framework Directive, HMWB and Good Ecological Potential has been addressed in the SEA, which informed the development of the WRMP.
	Discussions need to take place with NIEA in relation to the decommissioning of Camlough Lake.	This is an issue for NIEA & NIW to follow up and is outside the practical scope & detail of the WRMP.
Ulster Angling Federation	The Federation fully support the submission completed by the Freshwater Task Force and endorse all their comments (see above)	Comment noted. Please see the responses to the series of comments received from the Freshwater Task Force detailed above.
Varyflush Limited	The interflush can save 30 litres per person per day. With a population of 1.8 million, this gives a daily saving of $30 \times 1.8 = 54$ MI/d, which far exceeds any of the methods suggested by Atkins. Interflush gives immediate water savings at an absolute fraction of the cost and it can provide 'Green Jobs' fitting it. Reduces: water, electricity, carbon, infrastructure and running costs.	NI Water acknowledges that demand management can play a significant role in maintaining the supply demand balance. The WRMP allows for its consideration of most likely changes to customer demand – making unrealistic assumptions about water efficiency savings would expose NI Water and its customers to unacceptable risks. NI Water intends to adopt a more proactive approach to water efficiency in the next Price Control period; the scope and programming of an enhanced initiative will depend on an appropriate level of funding.
	<p>The logic of the interflush is as simple as the wheel:</p> <ul style="list-style-type: none"> • The flushing toilet is by far the biggest single user of water. It's only purpose is to flush away waste, which is always variable. • For 160 years we have, pressed and let go, releasing the full cistern every time, with no control over the volume flushed, wasting massive amounts of water. • The Interflush and Saver-Siphon gives the user full control 	Comments noted. It is not the role of the WRMP to favour or promote one commercial product.

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	<p>over the volume flushed. The operation becomes: Press, hold down to flush, let go to stop.</p> <ul style="list-style-type: none"> • Just flush only what is needed to clear the waste, wasting not one drop. Thus saving around half the flushing water on average, over a number of flushes. • Nothing can flush a toilet with less water. • It saves 74% more than dual-flush because dual-flush is still flushing fixed volumes of water and hence still wasting some. • Hippo bags are a deception as they cause double flushing which wastes water and not saving water. 	
	<p>The sooner you get the interflush or saver-siphon rolled out to the population, the sooner you start to save water, buying you time and money to sort out the infrastructure, without the need for any of Atkins expensive civil engineering solutions.</p>	<p>Comment noted</p>
	<p>On the draught WRM plan, Atkins have it wrong on a number of points:</p> <ul style="list-style-type: none"> • They state that metering reduces consumption by 10%. This might be the case initially but in practice, the 10% declines in a short time to only a few percent. Metering only has a short lived psychological effect. Measuring water is not the same as saving it. • This said, metering is the only thing that gives householdrs (sic) a financial incentive to save water. Unless you provide and fit the interflush yourself, the only way householders will do it themselves is if you fit water meters everywhere. • Atkins solutions of water transfere (sic) are massively energy and carbon hungry to run. One cubic metre of water weighs a ton, think of water in terms of weight to shift, not volume. They forget to tell you about this. • The pathetically small figures they quote for water efficiency measures are just plain lies, based on sources that are in the pockets of the privatised water companies. In the words of one of their ececutives (sic): 'Why should we save water, 	<p>Comments noted</p>

Comments from	Comments	How have these comments been addressed in formulation of the Final WRMP?
	we are in the business of selling it not saving it'.	
	On a politically wider note, the present crisis will only make louder the voices for privatisation of NI water, which would be a disaster for NI water, as it has been here in England. The interflush and saver-siphon can avert that disaster. I have invented both as solutions to the crisis you are now in.	Comment noted. Issues such as the privatisation of NI Water are outside the scope of the WRMP.

7. Reasons for choosing the Water Resources Management Plan as adopted in light of other reasonable alternatives

The development of an adequate and robust Water Resource Management Plan is a statutory requirement of the Water and Sewerage Services Order (Northern Ireland) 2006 (the 2006 Order). As such, there was no alternative to not developing a plan.

The Options detailed in the final plan are the result of a range of studies which looked at the current potable water supply system within Northern Ireland, a determination of current consumption levels and projections of future anticipated demand. From these studies, a range of Options have been developed which it is anticipated will meet the requirements of the 2006 Order, namely:

- NI Water's estimate of the quantities of water needed to meet its obligations in accordance with the 2006 Order;
- The measures which NI Water intends, or will continue to take, to meet its obligations under the 2006 Order; and
- The likely schedule of activities that will need to be taken to implement the measures required to comply with the WRMP and the 2006 Order.

For the most part, the Options contained within the Final WRMP are the same as those contained within the Draft WRMP. As such, for the most part, the reasons for the inclusion of the Options chosen are detailed in full in the Draft WRMP and associated SEA Environmental Report (Atkins Report 5079991/264/DG/057). The Options contained within the Final WRMP are as detailed in Table 7 below:

Table 7.0: Options included within the Draft and the Final WRMPs

Option	Category	Proposed Option	
		Draft WRMP	Final WRMP
LN1	Increase / Decrease Abstraction from existing sources	Increase the output of Castor Bay, within the total licensed quantity for Lough Neagh.	No longer required undersupply demand balance driver
LR1	Leakage Control	Leakage reduction below current PC10 target of 166 MI/d	Revised targets for total leakage and date by which target is to be achieved
ST1 (JR342)	Planning Period 2013-18 Strategic Transfers	Castor Bay to Belfast Phase 3	No longer required under supply demand balance driver
ST2 (JG035)		Castor Bay to Newry Phase 2	Decision to implement scheme already taken under another driver

ST5 (JF017)		Killyhevlin to Dungannon	No longer required under supply demand balance driver
ST3 (JL715)		Carmony to Strabane	Not required under supply demand balance driver
TR2	Other Transfers	2 MI/d transfer from North to Central Water Resource Zone	Selected for Final WRMP
TR3		2 MI/d transfer from South to Central Water Resource Zone	Selected for Final WRMP
CL	Refurbish Existing Sources	Retain and Refurbish Camlough WTW to provide the existing output of 5 MI/d	Not required under supply demand balance driver

7.1 Influence of the SEA and its associated consultation and the development of the Final WRMP

As noted though, there are some small differences between the Draft WRMP and the Final WRMP. These changes have come about due to further consideration of technical issues and associated models (for example, the further development and refinement of a Trunk Main Model) as well as the consideration of and taking into account of the consultation responses obtained during the consultation process. An explanation of the changes between the Draft and the Final WRMP is included in Section 1.5 the Final WRMP, and see Table 6.2 above for further details of these technical considerations and how the consultation process has been taken into account.

In terms of how the SEA (and its associated consultation) influenced the Final WRMP, it is considered that the iterative process followed in the development of the Draft WRMP resulted in a series of Options which were demonstrated to be either of neutral impact or which could be adequately mitigated (where a potential environmental impact was identified). See for example Table 9.4 of the Environmental Report. The Environmental Report also detailed appropriate mitigation (Generic Protection Measures) which could be adapted for use by any appointed contractors working on any particular scheme derived from the WRMP (see Appendix A of the Environmental Report).

It was recognised though in the Environmental Report (see Section 5.3) that in addition to Environmental issues, technical and other issues also have to be taken into account and a balance struck between these. This has also been the case with the development of the Final WRMP.

The Final WRMP contains fewer proposed Options than the Draft WRMP, with the following being removed:

- Increase / Decrease in abstraction from existing sources
- Planning Period 2013-18 Strategic Transfers (with the exception of Castor Bay to Newry Phase 2 as this has been given the go ahead due to other drivers)
- Refurbish existing sources

For the most part, the Final WRMP recommends that leakage control is prioritised. As demonstrated in the Environmental Report, it is considered that this Option has fewer potential negative environmental impacts (and those remaining can be mitigated) than the majority of potential Options identified in the original long list.

8. Monitoring

8.1 Measures that are to be taken to monitor for any unforeseen environmental effects so that appropriate remedial action may be taken

It is a requirement of the SEA Directive that monitoring should be carried out in order to identify at an early stage any unforeseen adverse effects on the environment due to implementation of the plan. The aim of this is to allow remedial action to be taken when adverse impacts are identified by the monitoring.

It should be noted that many of the impacts identified that would arise from implementing the options of the WRMP will be experienced during the construction of new infrastructure only and will not be experienced during the operation of these facilities. The preferred options in the WRMP are continuations (or extensions) of existing operational practice and are subject to existing regulatory reporting requirements.

The Directive makes clear that it is not necessary to monitor everything, or to monitor an effect indefinitely, rather monitoring should be focused on significant environmental effects and must be clearly linked to the SEA process. In this instance the proposed monitoring is linked to the SEA Objectives (see section 5 of the SEA Environmental Report for further information), where it is considered that monitoring would be beneficial to understanding how the WRMP will interact with the objective – i.e. it is intended that the monitoring should enable NIW to understand how the WRMP interacts with the SEA objectives in relation to the key questions set out against each objective (see Table 5.1 Objectives of the SEA on page 72 of the SEA Environmental Report).

Note that for many of the objectives, it is anticipated that impacts will only be experienced during the construction phase of infrastructure. In these instances it is not considered appropriate to instigate a monitoring regime at this stage as measures to protect the environment will be taken at each discrete construction site (note that specific monitoring may be required if its requirement is identified at the detailed design stage, for example following discussions with NIEA. If required then this matter would be addressed at that stage).

Under current licence conditions the Final WRMP shows that there is no requirement for increasing the abstraction permitted under existing abstraction licences. If abstraction Options were to be identified for future WRMPs then these would need to be subject to the same considerations as other NI Water abstractions namely that it is a condition within existing abstraction licences for NI Water to produce and agree monitoring plans with NIEA for all abstraction activities managed within Northern Ireland.

As part of the abstraction monitoring process, it is likely that NI Water will either need to install flow monitoring equipment or demonstrate through modelling the quantity of water taken at each licensed abstraction location. NIW will be required to make monitoring returns as a further condition of each licence. A detailed assessment of each abstraction point with an assessment of impact under the Water Framework Directive may lead to a review of current licence conditions; particularly if an abstraction is found to be having a detrimental impact on either a protected habitat or species.

At present, these monitoring plans are in the process of being developed and agreed with NIEA and are regularly discussed as part of the NIEA / NI Water working group meetings. When finalised, these abstraction monitoring plans will be of invaluable benefit to monitoring the impacts of abstraction and as such will be of value to future reviews of the WRMP. Further discussion of this issue is outside the scope of the WRMP as for the most part it applies to existing operations that are not considered in the WRMP.

It was also noted that NIEA stated in their consultation response (see Section 6.1 of this SEA Statement) that there is a need for more river flow monitoring to be established by NIW to capture inflows and outflows, in particular at reservoirs. This issue is currently the subject of ongoing discussions in the NI Water / NIEA joint working group and as such is not discussed further here, but will be fully addressed in future WRMP monitoring.

Table 8.0: Proposed Monitoring

SEA Topic	SEA Objective		Key Questions	Monitoring
	Number	Description		
Biodiversity (inc. Flora and Fauna)	1A	Protect biodiversity	<p>Will the WRMP help to halt biodiversity loss?</p> <p>Will the WRMP support protection of designated areas?</p> <p>Will the WRMP help avoid damage to aquatic habitat and ecology?</p> <p>Will the WRMP afford an opportunity to improve aquatic habitat?</p>	<p>No specific monitoring is proposed in relation to assessing directly the impacts of the WRMP on biodiversity as it is anticipated that potential direct impacts due to the WRMP will be experienced mainly during construction stage of infrastructure. Individual measures to protect biodiversity will be taken at each discrete construction site. If for example a designated site is likely to be impacted then discussions would take place with NIEA at that time in order to identify the need for specific monitoring e.g. of protected species.</p> <p>Proposed to use data derived from monitoring plans developed by NI Water / NIEA in relation to abstraction in order to ensure that abstraction is not impacting on biodiversity. Note these monitoring plans are not yet fully developed.</p>

SEA Topic	SEA Objective		Key Questions	Monitoring
	Number	Description		
Population (inc. economic development)	2A	Support a growing population in a sustainable manner	<p>Will the WRMP help to ensure secure supplies of potable water for a growing population?</p> <p>Will the WRMP help to ensure secure supplies of potable water for increased economic activity?</p>	<p>No specific monitoring is proposed to demonstrate if the WRMP will help to ensure secure supplies of potable water as it is the aim of the regular reviews of the WRMP to ensure that there is enough water available to support a growing population in a sustainable manner.</p> <p>Note also that as part of the monitoring programme developed in relation to the implementation of the River Basin Management Plans, data will be compiled by NIEA of the amount of new development in urban and suburban areas where adequate water infrastructure is not in place. This is being used as an indicator of the target to 'provide adequate water infrastructure capacity to all urban and suburban areas by 2015'. NI Water will therefore aid NIEA in the compilation of this data and this can also be used to give NI Water a further understanding of this SEA Objective to 'support a growing population in a sustainable manner'.</p>
	2B	Support economic development		

SEA Topic	SEA Objective		Key Questions	Monitoring
	Number	Description		
Human Health	3A	Support measures to maintain health	<p>Will the WRMP help to ensure secure supplies of potable water?</p> <p>Will the WRMP help to improve drinking water quality?</p>	<p>No specific monitoring proposed to demonstrate if the WRMP will help to ensure secure supplies of potable water as it is the aim of the regular reviews of the WRMP to ensure that there is enough water available to support measures to maintain health.</p> <p>Drinking water quality will continue to be monitored by the Drinking Water Inspectorate, which has a regulatory role in matters relating to drinking water quality and provides an independent commentary and assessment of the quality of drinking water provided by NI Water. Results of monitoring are presented in an annual report. Monitoring has shown that drinking water quality is continuing an upward trend in public drinking water quality compliance. In 2010, 99.87% of all tests carried out at water treatment works, service reservoirs and consumers' taps complied with the regulatory standards.</p> <p>Looking at the five year trend for the period 2005 to 2010, the indicator which is used to compare drinking water quality at consumers' taps reports a significant increase from 99.02% in 2005 compared with 99.81% in 2010. This improvement reflects the substantial investment made to date by NI Water, especially in delivering the planned infrastructure improvement projects at water treatment works.</p>

SEA Topic	SEA Objective		Key Questions	Monitoring
	Number	Description		
	3B	Enhance quality of life		<p>No monitoring identified as it is the aim of the regular reviews of the WRMP to ensure that there is enough water available to support measures to enhance quality of life.</p> <p>NIEA have a comprehensive system of water quality monitoring in place and it is proposed that NI Water will utilise this water quality monitoring to ensure that water quality is not being compromised by NI Water activities and as such will not negatively impact health / quality of life. This issue to be discussed further in the NI Water / NIEA Working Group.</p> <p>Note measures relating to monitor Drinking Water Quality above will also be used to ensure that quality of life is being enhanced through continued provision of good quality water.</p>
Soil (inc. Agriculture)	4A	Support agriculture	<p>Will it help to ensure secure supplies of water for increased agricultural activity?</p> <p>Will the WRMP impact on the agricultural industry</p>	<p>No monitoring proposed as it is the aim of the regular reviews of the WRMP to ensure that there is enough water available to support agriculture.</p> <p>Some Options in the WRMP may impact on the agriculture industry at the local level at construction stage. Any potential impacts will be addressed at that time and as such no specific monitoring is proposed in relation to the impact of the WRMP on the agricultural industry.</p>
Water	5A	Reduce leakage	<p>Will the WRMP help to reduce levels of leakage?</p> <p>Will the WRMP result in increased water efficiency?</p> <p>Will the WRMP afford an opportunity to</p>	<p>A major element of the Final WRMP is the Option to reduce leakage. It is therefore proposed to Monitor leakage rates to ensure target set in WRMP is met or exceeded. Reported to NIAUR as part of Annual Information Return (AIR)</p>

SEA Topic	SEA Objective		Key Questions	Monitoring
	Number	Description		
	5B	Increase water efficiency	<p>improve raw water quality? Will the WRMP help maintain or avoid deterioration of chemical and biological water quality?</p>	<p>Monitor number of water efficiency devices issued to NI Water customers. Reported to NIAUR as part of AIR</p> <p>NIEA have a comprehensive system of water quality monitoring in place and it is proposed that NI Water will utilise this water quality monitoring to ensure that water quality is not being compromised by NI Water activities (both within and outside the WRMP related activities). This issue to be discussed further in the NI Water / NIEA Working Group.</p>
	5C	Protect raw water quality		<p>Raw water quality is monitored at intakes at present. No additional specific monitoring is proposed in relation to assessing the impacts of the WRMP as it is anticipated that potential impacts due to the WRMP will be experienced mainly during construction stage of infrastructure. Individual measures to protect water quality will be taken at each discrete construction site, though if required at that time, discussion will take place with NIEA in relation to specific site monitoring.</p> <p>NIEA have a comprehensive system of water quality monitoring in place and it is proposed that NI Water will utilise this water quality monitoring to ensure that water quality is not being compromised by NI Water activities (both within and outside the WRMP related activities). This issue to be discussed further in the NI Water / NIEA Working Group.</p>

SEA Topic	SEA Objective		Key Questions	Monitoring
	Number	Description		
Air	6A	Protect local air quality and avoid impacts on AQMA	What will be the impact on AQMA from implementation of the plan?	No monitoring proposed – local air quality impacts are anticipated to occur only during construction stage of infrastructure. It is unclear if any AQMA will be impacted at this stage as not all specific scheme details are known. Individual measures to protect local air quality (including monitoring if required) will be taken at each discrete construction site.
Climatic Factors	7A	Reduce greenhouse gas emissions	Will the WRMP lead to increased energy use? Are there options that could reduce the energy use of NI Water?	Monitor level of energy use by NI Water. Reported to NIAUR as part of AIR
	7B	Reduce vulnerability to climate change		Monitor level of energy use by NI Water. Reported to NIAUR as part of AIR
Material Assets (Energy) (Infrastructure)	8A	Reduce energy use by NI Water	Will the plan lead to increased energy use? Are there options that could reduce the energy use of NI Water?	Monitor level of energy use by NI Water. Reported to NIAUR as part of AIR
Cultural Heritage	9A	Protect the cultural heritage of the plan area	Will the plan avoid damage to known areas of archaeological important sites? What measures will be taken to avoid damage to unknown archaeology?	No monitoring identified as it is anticipated that impacts will only be experienced during construction stage of infrastructure. Individual measures to protect cultural heritage will be taken at each discrete construction site – if required this will include measures such as archaeological excavation.
Landscape	10A	Protect and where possible enhance the landscape of the plan area	Will the plan have a detrimental impact on the landscape? Will the plan offer opportunities to enhance the landscape of the plan area?	No specific monitoring is proposed in relation to assessing the impacts of the WRMP on landscape as it is anticipated that potential impacts due to the WRMP will be experienced mainly during construction stage of infrastructure. Individual measures to protect and enhance landscape will be taken at each discrete construction site.

SEA Topic	SEA Objective		Key Questions	Monitoring
	Number	Description		
Waste	11A	Reduce the amount of waste produced by NI Water operations	Are there options that could reduce the amount of waste produced by NI Water?	Monitor level of waste produced in NI Water Operations

9. Conclusions

A new Water Resource Management Plan (WRMP) has been developed in order to set out NI Water's estimate of the quantities of drinking water required to meet the needs of the population of Northern Ireland over the period for which the plan is effective (the 25 years between 2008/09 and 2034/35)

The WRMP also sets out the measures which NI Water intends, or will continue to take, in order to supply the estimated required quantity of drinking water and details the schedule of activities that will be needed to be taken to implement the WRMP.

It was recognised at the start of the development of the new WRMP that the activities needed to fulfil the objectives of the Plan could have negative environmental impacts. As such, a Strategic Environmental Assessment (SEA) was carried out in tandem with the development of the Plan, in order to ensure that the WRMP was developed in such a way that allowed full consideration of all technical, financial and other constraints, as well as all anticipated environmental issues.

Part of the WRMP development process involved consultation with a range of statutory bodies, as well as a period of public consultation. The results of this consultation have been carefully considered and where appropriate, amendments have been made to the Draft WRMP to ensure that any concerns raised have been addressed.

It should also be noted that the WRMP and associated SEA are 'living documents' - i.e. they will be constantly kept under review (annually and with complete revision every 5 years or when there is a "material change of circumstances"). To aid this review process a series of monitoring measures have been developed and will be carried out in order to identify at an early stage any unforeseen adverse effects on the environment due to implementation of the Plan. The aim of this is to allow remedial action to be taken when adverse impacts are identified by the monitoring.

In this way, a dynamic WRMP has been developed which strikes a balance across the range of technical, financial and environmental constraints identified.

A WRMP has therefore been developed that meets NI Water's objectives to continue to serve the people of Northern Ireland with a secure supply of potable water without unjustifiable environmental impacts.