

# **Draft Strategic Environmental Assessment**

## Appendices

26<sup>th</sup> July 2019

## Consultation Details

This document can be made available in a range of alternative formats. Please contact us with your requirements.

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If you require any technical clarification on any of the documents please also use these contact details.

### How to respond

The consultation will run for nine weeks to 27 September 2019. Please send any representations to the Department for Infrastructure (DfI), who will review these before sending them to NI Water for comment. If you wish to make representations on the draft Plan or supporting documents please do so by 27 September 2019 using the below contact details:

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The information you provide in your response to this consultation, excluding personal information, may be published or disclosed in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004 (EIR).

If you want the information that you provide to be treated as confidential, please tell us why, but be aware that, under the FOIA, we cannot guarantee confidentiality.

For information regarding your personal data, please refer to the DfI Privacy Notice at <https://www.infrastructure-ni.gov.uk/dfi-privacy>.

For further details on confidentiality, the FOIA and the EIR please refer to <https://www.ico.org.uk>

### Notes

The draft Plan is based on best practice and technical guidance in the industry.

NI Water has not excluded any information from the draft Plan for either commercial confidentiality or for national security interests under Article 71(10) of the Water & Sewerage Services (Northern Ireland) Order 2006.

The Water and Sewerage Services Act (Northern Ireland) 2016, permits NI Water to combine the Water Resource Management Plan and the Drought Plan in a Water Resource & Supply Resilience Plan (WR&SR Plan).

### Freedom of Information 2000 & the Environmental Information Regulations [EIRs] 2004

Following the consultation period, once all the comments have been reviewed and addressed as appropriate, NI Water will publish a summary of the consultation responses. . Your response, with your personal details extracted or redacted (in line with the requirements of the Data Protection Act 2018 and General Data Protection Regulation) under Section 40 of the Act or Regulation 13 of the EIR, (as appropriate), may be disclosed on request. NI Water/ The Department can refuse to disclose information only in exceptional circumstances. Before you submit your response, please read the paragraphs below on the confidentiality of consultations and they will give you guidance on the legal position about any information given by you in response to this consultation.

The Freedom of Information Act gives the public a right to request any non-personal, non-environmental, recorded information held by a public authority, including NI Water and the Department in this case.

The Environmental Information Regulations 2004 extends this right of request to "[environmental information](#)" for example, information about land development, pollution levels, energy production, and waste management.

This right of access to information, subject to exemption or exception, includes information provided in response to a consultation. NI Water/the Department cannot automatically consider as non-disclosable information supplied to it in response to a consultation. However, it does have the responsibility to decide whether any information provided by you in response to this consultation, should be made public or treated as non-disclosable.

This means that information provided by you in response to the consultation is unlikely to be treated as exempt from release to the wider public domain, except in very particular circumstances.

The Lord Chancellor's Code of Practice on the Freedom of Information Act provides that:

- NI Water/the Department should only accept information from third parties in confidence if it is necessary to obtain that information in connection with the exercise of any of the NI Water / Department's functions and it would not otherwise be provided;
- NI Water/the Department should not agree to hold information received from third parties 'in confidence' which is not confidential in nature;
- Acceptance by NI Water/the Department of confidentiality provisions must be for good reasons, capable of being justified to the Information Commissioner.

For further information about confidentiality of responses, please contact the

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## Appendix A. Review of Legislation, Policies, Plans and Programmes

Colour coding:

	International
	National/Regional
	Local

Plan, Programme, Policy, Legislation	Key Issues Identified	Key Implications for the WR & SR Plan and SEA
<b>General</b>		
European Union's 7th Environmental Action Plan 2013	This identifies that the great challenge faced by economies today is to integrate environmental sustainability with economic growth and welfare. It recognises that the consequences of climate change and the growing demand for energy and resources are challenging this objective. The action plan includes a series of proposals on sustainable consumption and production that will contribute to improving the environmental performance of products and increase the demand for more sustainable goods and production technologies.	The WR & SR Plan and SEA need to consider the overall objectives for sustainable development in their approach.
EU Sustainable Development Strategy 2006	The strategy provides a long term vision and the overarching policy framework for all EU policies and strategies. It recognises that significant effort is needed to curb and adapt to climate change, to decrease high energy consumption in the transport sector and to reverse the current loss of biodiversity and natural resources.	The WR & SR Plan and SEA need to consider the overall objectives for sustainable development in their approach.

## Draft Water Resource & Supply Resilience Plan

Plan, Programme, Policy, Legislation	Key Issues Identified	Key Implications for the WR & SR Plan and SEA
Europe 2020 strategy; for smart, sustainable and inclusive growth	Europe 2020 puts forward three mutually reinforcing priorities: <ul style="list-style-type: none"> <li>• Smart growth: developing an economy based on knowledge and innovation;</li> <li>• Sustainable growth: promoting a more resource efficient, greener and more competitive economy;</li> <li>• Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.</li> </ul>	The WR & SR Plan and SEA need to consider the overall objectives for sustainable development in their approach.
Water and Sewerage Services (Northern Ireland) Order 2006	Establishes government-owned companies' obligations for water supply, drinking water quality, trade effluent and sewage disposal, water and sewerage charges and customer service.	The WR & SR Plan and SEA need to take account of the relevant statutory obligations for Northern Ireland Water Relevance: Statutory obligations in relation to water supply and protection of environment.
Department of Regional Development, Regional Development Strategy, Building a Better Future, 2035	Aims to deliver the spatial aspects of the Programme for Government. It and aims for balanced sub-regional growth and recognises the importance of key settlements as centres for growth and investment, dealing with climate change as a key environmental and economic driver, and the importance of rural communities. It aims to maximise the use of existing infrastructure and services.	The WR & SR Plan and SEA need to take account of the Programme for Government and the aims and objectives of the strategy for development in Northern Ireland.
<i>Local Area Plans</i>	Local Area Plans set out the framework for development over a long term period, usually 10 years.	The WR & SR Plan and SEA need to take account of Local Development plans to ensure they comply with the area's aims, objectives and long term vision in terms of growth, constraints and opportunities.
<b>Population, Economic Development and Human Health</b>		

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United Nations Economic Commission for Europe (1998) Aarhus Convention - Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters	The Aarhus Convention grants the public the right to participate in, and access all aspects of the decision making on environmental planning at local, national and transboundary government level.	The WR & SR Plan and SEA Environmental Report should be readily accessible by the public, i.e. easy to access on-line and written in non-technical clear language. Relevant to: Process.
EC Drinking Water Directive (1998/83/EC)	Sets requirements for drinking water - See under Water.	The WR & SR Plan should support and ensure the achievement of drinking water quality standards.
Bathing Water Directive (2006/7/EC)	Sets quality standards for Bathing Waters. All countries in the EU have to ensure that their bathing waters meet these standards.	Need to protect water quality / prevent pollution incidents.

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<p>Defra (2011) Mainstreaming Sustainable Development. The Government's Vision which builds on Defra (2005) Securing the Future; Delivering UK Sustainable Development Strategy</p>	<p>This is the Coalition Government's 'refreshed vision' of sustainability that seeks to build on the 2005 strategy. It commits to the same five guiding principles i.e., 'Living within environmental limits' and ensuring sustainable water supplies. The key points are: further integration and accountability for sustainability in government policy making and economic growth measures, leading by example, embedding SD into policy, and transparent and independent scrutiny.</p> <p>The 2005 strategy updated the previous 1999 strategy taking account of devolution in Scotland, Wales and Northern Ireland. Its four priorities were:</p> <ul style="list-style-type: none"> <li>• Natural resource protection and environmental enhancement;</li> <li>• Sustainable communities;</li> <li>• Climate change and energy; and</li> <li>• Sustainable consumption and production.</li> </ul>	<p>The WR &amp; SR Plan must take account of the principles and priorities set out in the strategy. The SEA should ensure that sustainability objectives are considered when assessing the potential impacts of the WR &amp; SR Plan.</p>



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<p>Planning Act (NI) 2011 and Local Development Plans</p> <p>Strategic Planning Policy Statement (to replace PPS15: Flood Risk) that sets out additional guidance on development in flood risk areas</p>	<p>The Planning Act (NI) sets out planning policy for Northern Ireland establishing a new two-tiered planning system with devolved powers to local government. The 2011 Act requires all councils to prepare a LDP that will provide a 15 year framework to support economic and social needs facilitating sustainable growth. LDPs should ensure that supporting actions are in place to ensure that developers provide necessary infrastructure such as road access, water supply, sewerage and land drainage.</p> <p>The SPPS replaces over 20 former Planning Policy Statements (PPS) including PPS15 on flood risk, and Supplementary Planning Guidance documents (SPG) with the aim of securing the orderly and consistent development of land in Northern Ireland under the reformed two-tier planning system. This requires that developers prepare Flood Risk Assessments to support planning applications to determine the variations in flood risk from all sources of flooding across and from their area now and in the future.</p> <p>The Flood Risk assessments are prepared in consultation with the Rivers Agency, other local authorities and drainage authorities under the Land Drainage Act 1991.</p>	<p>The WR &amp; SR Plan should take account of the Planning Act's presumption in favour of sustainable growth and integrated local planning.</p>

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Northern Ireland Water (2012) Our Strategy for NI Water 2012	<p>This sets out the long term objectives for NI Water:</p> <ul style="list-style-type: none"> <li>• Provide the level of customer service expected and valued;</li> <li>• Deliver clean, safe, secure, sustainable supplies of drinking water to households, industry and agriculture;</li> <li>• Adapt to deal with the effects of climate change;</li> <li>• Protect and enhance the natural environment;</li> <li>• Manage flood risk to facilitate social, economic and environmental development;</li> <li>• Protect affordable, reliable water and sewerage and environmental development, giving customers good value for money;</li> <li>• Take care of wastewater to prevent pollution to the environment;</li> <li>• Supply customers with the water they need;</li> <li>• Ensure sustainable, secure governance funding and regulation of the water sector;</li> <li>• Manage our inland and coastal waters to support tourism, recreation and biodiversity;</li> <li>• Provide an excellent service by having the right people doing the right thing.</li> </ul>	The WR & SR Plan should take account of the strategy objectives.
Pollution Prevention and Control Regulations (Northern Ireland) 2003 & amendments	Prescribes that certain activities must operate under a permit issued by the relevant regulator. Operators of these activities must employ the Best Available Techniques (BAT) to control and manage the risk of pollution from their facility, whilst maintaining a balance between costs to the operator and environmental benefits.	Some of the outcomes from the WR & SR Plan may lead to new facilities that fall under PPC regulations.
Water and Sewerage Services (Northern Ireland) Order 2006	Establishes government-owned companies' obligations for water supply, drinking water quality, trade effluent and sewage disposal, water and sewerage charges and customer service.	NIW have a requirement to meet terms of the Order. WR & SR Plan will help ensure this is done.

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Adopted Local Development Plans and emerging LDPs from 11 District Councils	See General.	The WR & SR Plan will need to take account of the adopted and emerging Local Development Plans in terms of growth, constraints and opportunities.
<b>Tourism and Recreation</b>		
United Nations Economic Commission for Europe (1998) Aarhus Convention - Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters	See under General.	The WR & SR Plan and SEA Environmental Report should be readily accessible by the public, i.e. easy to access on-line and written in non-technical clear language. Relevant to: Process.
EC Drinking Water Directive (1998/83/EC)	See under Water.	Need to protect water quality / prevent pollution incidents.
Sport NI, Environment and Heritage Service and NIEA, 1998, NI Countryside Recreation Strategy.	Establishes a strategy to develop a vibrant countryside recreation culture in which responsible and well informed people enjoy high quality sustainable and appropriate activities in an accessible, well managed yet challenging environment; where landowners and managers are welcoming and there are accompanying benefits to local communities both in social and economic terms.	The WR & SR Plan should take account of the need to reduce impact on the countryside and recreation.
PPS 8: Open Space, Sport and	Sets out the Department's planning policies for the protection of open space, in association with the use of land for sport and outdoor recreation, and advises on the treatment of these issues in	The WR & SR Plan should take account of the need to reduce impact on the countryside and recreation.

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Outdoor Recreation	development Plans. It embodies the Government's commitment to sustainable development, to the promotion of a more active and healthy lifestyle and to the conservation of biodiversity.	
AONB Management Plans	See Landscape, Townscape and Visual Amenity.	The WR & SR Plan should take account of these Plans.
<b>Material Assets</b>		
EC Waste Framework Directive (2008/98/EC)	This outlines the definitions related to waste management. It requires that waste be managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals, without causing a nuisance through noise or odours, and without adversely affecting the countryside or places of special interest. The Directive also introduces the "polluter pays principle" and the "extended producer responsibility" and includes a target of 70% preparing for re-use, recycling and other recovery of construction and demolition waste by 2020.	The WR & SR Plan should take account of the need to reduce waste and aim to improve waste recovery.
HM Treasury (2011) National Infrastructure Plan	<p>This sets out the government's plan for coordinating and planning public and private investment in UK infrastructure. It presents past performance and projected investment across the water sector. Objectives relating to water include:</p> <ul style="list-style-type: none"> <li>• Supports roll-out of a £22 billion investment programme over 2010-15 to balance supply and demand; maintain assets, improve environmental protection and deliver service improvements;</li> <li>• Maintain the security and performance of the water and sewerage system while reducing its environmental impacts;</li> <li>• Improve flood defences to meet 2015 targets;</li> <li>• Smooth out investment cycles to reduce costs;</li> <li>• Facilitate movement of freight from road to water where viable and appropriate;</li> <li>• Facilitate opportunities for shared use of network infrastructure, e.g. a railway embankment also being part of a flood defence;</li> <li>• Develop new models of private finance and delivery.</li> </ul>	Any infrastructure planning aspects within the WR & SR Plan should align with this plan.

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Planning Act (NI) 2011 and Planning Policy Statements (including Planning Policy Statement 11: Planning & Waste Management)	<p>The Planning Act and PPS's set out the planning controls on Northern Ireland to ensure that valuable land is protected and developed appropriately, and resources and waste adequately managed.</p> <p>See also under Population &amp; Health.</p>	The WR & SR Plan should take account of the Planning Act (NI)'s regulations on development on valuable land.
The Waste (Amendment) (Northern Ireland) Order 2007	<p>The Waste (Amendment) (Northern Ireland) Order 2007 ("the Order") strengthens existing waste legislation in an attempt to deter illegal waste activity in Northern Ireland.</p> <p>The 2007 Order updates the legislation governing the management and disposal of waste, as set out in the Waste and Contaminated Land (Northern Ireland) Order 1997.</p>	Waste will be produced due to the construction and operation of options under the plan.
Waste and Contaminated Land Order (Northern Ireland) 1997	Introduced in Northern Ireland as a result of the Waste Framework Directive, the Hazardous Wastes Directive and the Landfill Directive which set legal standards and responsibilities for the deposit, treatment, keeping or disposal of waste.	Waste will be produced due to the construction and operation of options under the plan.
Northern Ireland's Waste Management Strategy, Delivering Resource Efficiency (2013), revises Waste Management Strategy for Northern Ireland "Towards	Sets out the policy framework for the management of waste in Northern Ireland and contains actions and targets to meet EU Directive requirements and the Department's Programme for Government commitments. It and places renewed emphasis on the Waste Hierarchy, moving the emphasis from resource management, with landfill diversion as the key driver to resource efficiency.	The WR & SR Plan should take account of emerging waste policy changes and government aspiration to reduce, reuse and recycle when possible.

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Resource Management"		
Environmental Impact Assessment (Forestry) Regulations (Northern Ireland) 2006	Sets out measures for forestry projects.	The WR & SR Plan should take account of these regulations.
<b>Biodiversity, Flora &amp; Fauna</b>		
United Nations (1992) Convention on Biological Diversity (CBD) (UK BAP)	This internationally binding treaty introduced requirements to protect biodiversity and is implemented through National Biodiversity Strategies and Action Plans. During the 2010 International Year of Biodiversity, the UN declared the period from 2011 to 2020 as the UN-Decade on Biodiversity.	The WR & SR Plan must take account of national biodiversity strategies and action plans.
UNESCO Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat, 1971	This international treaty protects the biodiversity and sustainable use of wetlands habitats and species.	The WR & SR Plan must avoid any detrimental impacts on wetlands designated as Ramsar sites potentially affected by implementation of the WR & SR Plan.

Plan, Programme, Policy, Legislation	Key Issues Identified	Key Implications for the WR & SR Plan and SEA
<p>EU Biodiversity Strategy, 2011</p>	<p>In May 2011, the European Commission adopted a new strategy to halt the loss of biodiversity and ecosystem services in the EU by 202, in line with the commitments made at the 10<sup>th</sup> meeting of the Convention on Biodiversity (CBD) held in Japan in 2010. By 2050, European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided".</p> <p>The strategy contains six targets and 20 actions. The six targets cover:</p> <ul style="list-style-type: none"> <li>• Full implementation of EU nature legislation to protect biodiversity;</li> <li>• Better protection for ecosystems, and more use of green infrastructure;</li> <li>• More sustainable agriculture and forestry;</li> <li>• Better management of fish stocks;</li> <li>• Tighter controls on invasive alien species;</li> <li>• A bigger EU contribution to averting global biodiversity loss.</li> </ul>	<p>The WR &amp; SR Plan must take account of the biodiversity action targets.</p>
<p>EC Birds Directive (2009/147/EC)</p>	<p>The Directive implements the EC obligations under the Bern and Bonn conventions for wildlife birds. In particular: the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex I of the Directive, and all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance (Article 4). Together with Special Areas of Conservation designated under the Habitats Directive, SPAs form a network of European protected areas known as Natura 2000.</p>	<p>The WR &amp; SR Plan will need to take account of commitments for SPAs within the WR &amp; SR Plan area.</p>

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<p>EC Directive on the Conservation of Wild Birds (79/409/EEC)</p>	<p>This Directive covers the conservation of all wild birds throughout the EU including marine areas. It includes their protection, management, control and exploitation and applies to birds, their eggs, nests and habitats. Maintenance of favourable conservation status of all wild bird species and the classification of Special Protection Areas for rare or vulnerable species are of particular relevance to the WR &amp; SR Plan.</p>	<p>The WR &amp; SR Plan must take account of potential detrimental and beneficial effects on protected birds and Special Protection Areas (SPAs) from the implementation of the WR &amp; SR Plan.</p>
<p>EC Environmental Impact Assessment Directive (85/337/EEC) and 'Strategic Environmental Assessment' – SEA Directive (2001/42/EC)</p>	<p>Environmental assessment is a procedure that ensures that the environmental implications of decisions are taken into account before the decisions are made. Environmental assessment can be undertaken for individual projects, according to the Environmental Impact Assessment'- EIA Directive; or for public plans or programmes according to the 'Strategic Environmental Assessment' – SEA Directive. The common principle of both Directives is to ensure that plans, programmes and projects likely to have significant effects on the environment are made subject to an environmental assessment, prior to their approval or authorisation. Consultation with the public is a key feature of environmental assessment procedures.</p>	<p>The WR &amp; SR Plan and SEA should be structured to meet the requirements of the SEA directive.</p> <p>Relevant for: Process.</p>
<p>Shellfish Waters Directive (2006/113/EC)</p>	<p>Aims to protect shellfish populations, maintaining the high quality of shellfish in our waters. The directive sets the standard for water quality in estuaries and other areas where shellfish grow and reproduce.</p> <p>Under this directive, waters that are inhabited by shellfish need to be monitored for certain substances.</p>	<p>Need to protect water quality / prevent pollution incidents.</p>



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<p>EC Habitats Directive (92/43/EC)</p>	<p>The main aim of the EC Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance. In applying these measures Member States are required to take account of economic, social and cultural requirements and regional and local characteristics.</p>	<p>Protection of Designated Habitats and feature interests. Sets out requirements for 'Appropriate Assessments'.</p>
<p>EC Freshwater Fish Directive (2006/44/EC)</p>	<p>The Directive seeks to protect fresh water bodies identified by Member States as waters suitable for sustaining fish populations. For those waters it sets physical and chemical water quality objectives for salmonid waters and cyprinid waters. The Directive will be repealed in 2013 by the EC Water Framework Directive. Obligations are implemented through the Surface Waters (Fishlife) Regulations 1997.</p>	<p>The WR &amp; SR Plan should take account of the requirements to protect important fisheries.</p>
<p>EC Directive on Conservation of Natural Habitats and of Wild Fauna and Flora- Habitats Directive (1992/43/EEC)</p>	<p>The Habitats Directive (together with the Birds Directive) set the main legal requirements and guidance for Europe's nature conservation policy. They require Member States to identify and protect sites of European importance as 'Special Areas of Conservation' (SACs) under the Habitats Directive and 'Special Protection Areas', (SPAs) for birds under a pan-European ecological network of conservation sites known as "Natura 2000".</p> <p>Member States must maintain or restore designated natural habitats and wild species at "favourable conservation status in their natural range".</p>	<p>The WR &amp; SR Plan must avoid potential damage to sites protected under the Directive and follow the required process to demonstrate possible effects have been considered fully.</p>

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The Environmental Liability Directive (ELD)2004/35/EC	<p>The Directive seeks to achieve the prevention and remedying of environmental damage – specifically, damage to habitats and species protected by EC law, damage to species or habitats on a site of special scientific interest for which the site has been notified, damage to water resources and land contamination which presents a threat to human health. It reinforces the “polluter pays” principle – making operators financially liable for threats of or actual damage. It was transposed into English law by the Environmental Damage in March 2009.</p> <p>Water undertakers will be liable under the Directive to take remedial measures where an activity has caused damage to habitats or species listed in the Annexes to the Habitats and Birds Directive. This does not apply where the activity was fully in accordance with conditions of an authorisation and the operator was not at fault or negligent.</p>	The WR & SR Plan should take account of the potential environmental liability from its proposals and aims to protect water quality / prevent pollution incidents of aquatic or terrestrial and avoid damage to sensitive sites.
EC Eel Regulation (Council Regulation 1100/2007)	This EC regulation requires European member states to prepare Eel Management Plans to describe the current status of eel stocks and highlight management actions that will be taken, in particular to consider eel passage as part of the solution in addressing declining eel stocks.	The WR & SR Plan should take account of objectives to meet Eel protection requirements or potential to contribute where relevant to proposals.
The Bonn Convention on the Conservation of Migratory Species of Wild Animals (1983)	This <b>intergovernmental treaty</b> conserves terrestrial, aquatic and avian migratory species throughout their movements. For the water sector it is particularly significant in conserving migratory bird movements.	The WR & SR Plan should take account of implications of proposals for migratory birds.

Plan, Programme, Policy, Legislation	Key Issues Identified	Key Implications for the WR & SR Plan and SEA
<p>The Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)</p>	<p>All countries that have signed the Bern Convention must take action to:</p> <ul style="list-style-type: none"> <li>• Promote national policies for the conservation of wild flora and fauna, and their natural habitats;</li> <li>• Have regard to the conservation of wild flora and fauna in their planning and development policies, and in their measures against pollution;</li> <li>• Promote education and disseminate general information on the need to conserve species of wild flora and fauna and their habitats;</li> <li>• Encourage and co-ordinate research related to the purposes of this Convention;</li> <li>• Co-operate to enhance the effectiveness of these measures through co-ordination of efforts to protect migratory species; and the exchange of information and the sharing of experience and expertise.</li> </ul>	<p>The WR &amp; SR Plan must take account of Bern Convention policies where relevant to the proposals and as required under national legislation.</p>
<p>Ramsar Convention on the conservation and sustainable use of wetlands (1971)</p>	<p>The Convention covers all aspects of wetland conservation and wise use. The Convention has three main 'pillars' of activity: the designation of wetlands of international importance as Ramsar sites; the promotion of the wise-use of all wetlands in the territory of each country; and international co-operation with other countries to further the wise-use of wetlands and their resources.</p>	<p>Promote the wise use of wetlands and their resources.</p>

Plan, Programme, Policy, Legislation	Key Issues Identified	Key Implications for the WR & SR Plan and SEA
<p>(2011) UK National Ecosystem Assessment, Northern Ireland Summary</p>	<p>The first assessment identified the following key findings:</p> <ul style="list-style-type: none"> <li>• The role of ecosystem services in mitigating the effects of human impacts, including climate change and biodiversity loss, should be considered in all decisions about the use of land and sea;</li> <li>• Carbon management needs to be seen as an important part of management for multiple services;</li> <li>• The full value of sequestration in existing habitats must be factored into carbon and greenhouse gas budgets and targets and given weight when making decisions on land management regimes;</li> <li>• Planning and management policies need to be aligned with natural processes to maintain the capacity for multiple service delivery;</li> <li>• A network of ecologically coherent sites should form a core for integrated management within the wider environment, delivering ecosystem services and minimising environmental degradation.</li> </ul>	<p>The WR &amp; SR Plan should take account of potential large scale impacts on ecosystems.</p>

Plan, Programme, Policy, Legislation	Key Issues Identified	Key Implications for the WR & SR Plan and SEA
<p>Conservation (Natural Habitats, etc.) (Amendment) Regulations (Northern Ireland) 2012</p> <p>Environment (Northern Ireland) Order 2002</p>	<p>The 2012 Regulations amend the Conservation (Natural Habitats etc.) Regulations (Northern Ireland) 1995 which make provision for implementing the EC Directive on the conservation of natural habitats and of wild fauna and flora. The changes aim to provide greater legal precision about how the Directive's obligations are fulfilled. Provides protection for habitats and species that are of European importance. These regulations provide for the designation and protection of 'European Sites', the protection of 'European Protected Species' and the adaptation of planning controls for the protection of such sites and species. Under the regulations, public bodies have a duty in exercising their functions to have regard to the EC Habitats Directive, protecting certain birds, plants, animals, marine life and their habitats, including Natura 2000 sites, through creating criminal offences and changing planning requirements.</p> <p>There regulations require public bodies to take account of the Habitats and Wild Birds Directives when assessing any plans or policies and use 'all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds'. Northern Ireland Natura 2000 sites designated under both Directives as having maintenance or improvement of water status as an important factor in their protection are listed on a register of protected areas under WFD.</p>	<p>Proposals within the WR &amp; SR Plan must meet the requirements of the Regulations including abstraction impacts covering both 'confirmed' and 'likely' sustainability changes in their central forecasts, as notified by the Northern Ireland Environment Agency and undertaking Habitats Regulations Assessment on the Plan. These regulations make reference to the potential requirement for Appropriate Assessment of Water Abstraction plans.</p>

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Plan, Programme, Policy, Legislation	Key Issues Identified	Key Implications for the WR & SR Plan and SEA
<p>Wildlife (Northern Ireland) Order 1985</p> <p>Nature Conservation and Amenity Lands (Northern Ireland) Order 1985</p>	<p>This regulation sets out the statutory protection of wildlife and wildlife habitats, including biodiversity protection with a requirement for NIEA to identify Sites of Special Scientific Interest (SSSI). The Wildlife Order makes it an offence to interfere with certain species of wild animals and plants, with certain exceptions, which require a licence. Specifies open and closed periods for hunting of limited species, with special protection for deer.</p> <p>The Nature Conservation and Amenity Lands Order establishes the Council for Nature Conservation and the Countryside and sets out the DoE's rights and duties to protect and enhance sites of natural beauty or special scientific interest in Northern Ireland. Makes provision with respect to nature conservation, enjoyment and conservation of the countryside, and amenity lands. Places particular emphasis on the establishment of a network of Areas of Special Scientific Interest and Nature Reserves.</p>	<p>The SEA should ensure the WR &amp; SR Plan meets the requirements of these regulations, in particular for protected areas/designated habitats and species such as nesting birds, badgers, red squirrels and otters.</p>
<p>Surface Waters (Fishlife) (Classification) (NI) Regulations 1997</p>	<p>These regulations implement the Freshwater Fish Directive (FWFD) (2006/44/EC). These Regulations prescribe a system for classifying the quality of inland freshwaters which need protection or improvement in order to support fish life and define functions of the Environment in this respect. The classifications SW ("salmonid waters") and CW ("cyprinid waters") and the criteria for those classifications set out in the Schedule shall apply for classifying inland freshwaters which need protection. The Regulations also provide for pollution reduction programmes.</p>	<p>The WR &amp; SR Plan and SEA should meet the requirements of the regulations for fish life in surface waters.</p>
<p>River Basin Management Plans (NI)</p>	<p>Implements the Water Framework Directive through the adoption and implementation of River Basin Management Plans and Programmes of Measures.</p>	<p>Must take measures to ensure good ecological status is maintained and maintain sustainable management practices.</p>

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Plan, Programme, Policy, Legislation	Key Issues Identified	Key Implications for the WR & SR Plan and SEA
DoE (2013) An Invasive Alien Species Strategy for Northern Ireland	The Strategy provides a comprehensive and integrated framework intended to co-ordinate the actions of Government agencies and external partners, building on a foundation of sound scientific knowledge in tackling non-native species. It is structured into components which reflect the main challenges for Northern Ireland and are in line with the guiding principles set out by the Convention on Biological Diversity and the Global Invasive Species Programme.	The WR & SR Plan and SEA should take account of the latest version of reports emerging from the Framework.
DoE/NIEA (2012) Our Passion, Our Place – NIEA Strategic Priorities 2012 -2022	This plan sets out the Northern Ireland Environment Agency's strategic direction over the next ten years to bring together diverse roles and guide corporate business planning. It sets out strategic goals and actions under four priority themes; Healthy Natural Environment, People and Places, Sustainable Economic Growth and Using Our Resources Well.	The WR & SR Plan and SEA should take account of the Northern Ireland Environment Agency's strategic goals and actions.
Northern Ireland Environment Agency (2013) From Evidence to Opportunity, A Second Assessment of the State of Northern Ireland's Environment	The second assessment of the NI environment providing a 5 year update on the first report "Our environment, our heritage, our future". This report draws together in one place an overall picture of the NI environment and identifies cross-cutting issues, allowing better assessment of the effectiveness of environmental policies over the longer term and base decisions on how we manage and protect our environment on appropriate evidence.	The WR & SR Plan must take account of the evidence and indicators detailed in the report where appropriate.
Wildlife and Natural Environment Act (NI) 2011	This act places a statutory duty on every public body to further the conservation of biodiversity so far as is consistent with the proper exercise of those functions.	

<p>DoE (2015) Valuing Nature, A Biodiversity Strategy for Northern Ireland to 2020.</p>	<p>The Northern Ireland Biodiversity Group (NIBG) identified 15 major issues affecting biodiversity in NI and made a series of recommendations in the Northern Ireland Biodiversity Strategy on protecting and enhancing biodiversity, identifying priority species and habitats requiring action in Northern Ireland. The strategy has the aim of halting biodiversity loss by 2016. The strategy was introduced under the Programme for Government for 2011 –to meet the Government’s objective to halt overall loss of biodiversity in the UK. The purpose of the Northern Ireland Biodiversity Strategy will be to ‘make progress towards halting overall biodiversity loss, establish an ecosystem approach and help business and society in general have a greater understanding of the benefits that nature can bring to everyday life in Northern Ireland’.</p> <p>As a key part of the NI Biodiversity Strategy 37 Northern Ireland Habitat Action Plans (HAPs) have been published for priority habitats requiring conservation action.</p> <p>The Strategy recognises that natural heritage is at the core of what makes Northern Ireland special and the Northern Ireland Executive is committed to protecting this common wealth in a way that reflects the interests of those who use it and who live in it.</p> <p>The Strategy sets out plans to safeguard biodiversity in the present and over the next decade and beyond. In summary, the Strategy;</p> <ul style="list-style-type: none"> <li>• Examines threats to biodiversity;</li> <li>• Provides an analysis of issues;</li> <li>• Sets out long term goals;</li> <li>• Indicates appropriate mechanisms that will be implemented via the Northern Ireland Biodiversity Group;</li> <li>• Has an all-Ireland dimension that recognizes shared biodiversity resources such as waterways, water-tables and cross-border conservation sites;</li> <li>• Expects all government departments to work together for biodiversity conservation;</li> <li>• Sets out additional resources that will be made available;</li> </ul>	<p>The WR &amp; SR Plan should reflect the aims of the strategy and the SEA should ensure those aims are effectively integrated.</p>
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	<ul style="list-style-type: none"> <li>• Seeks to promote greater knowledge, understanding and participation across all sectors.</li> </ul> <p>The Northern Ireland Biodiversity Strategy has identified major issues affecting Biodiversity and contains specific recommendations for conservation action. It has identified priority species and habitats requiring action in Northern Ireland.</p>	
<p><b>Marine Act (NI) 2013</b></p>	<p>The Marine Act sets out a new framework for Northern Ireland's seas based on: a system of marine planning that will balance conservation, energy and resource needs; improved management for marine nature conservation and the streamlining of marine licensing for some electricity projects.</p> <p>The Marine Act converted Strangford MNR into a Marine Conservation Zone. This became Northern Ireland's first Marine Conservation Zone. DAERA in December 2016 designated an additional 3 MCZs.</p> <p>The Marine Act applies to the Northern Ireland inshore region comprising of the territorial sea out to twelve nautical miles. This area includes all the tidal rivers and sea loughs (including Lough Foyle and Carlingford Lough). It enables Department of Agriculture, Environment and Rural Affairs to;</p> <ul style="list-style-type: none"> <li>• Prepare a marine plan to allow decisions to be made about the best use of marine areas;</li> <li>• Designate areas as Marine Conservation Zones;</li> <li>• Regulate marine licencing and consents.</li> </ul>	<p>Options which may impact on the marine environment must note the terms of this Act.</p>

**Local Biodiversity  
Action Plans**

- The LBAPs help to ensure that national and Northern Ireland targets for species and habitat conservation in the Northern Ireland Biodiversity Strategy are translated into effective action at the local level. It details the actions required at a local level and what must be achieved on the ground. It also comprises species and habitats that are not included on the national or regional plans but are of local importance.
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- LBAPs identify the sites designated for protection and priority species and habitats identified for conservation action. Detailed action plans will be produced for the priority species and habitats which will set out exactly what is to be done to enhance and protect species and habitats. The LBAP sets out the objectives and indicative actions for these habitat and species action plans.

The WR & SR Plan must take account of the LBAP's objectives and species and habitats designated for protection.

***Landscape, Townscape and Visual Amenity***

<p>European Landscape Convention (Florence 2000)</p>	<p>The European Landscape Convention of the Council of Europe promotes the protection, management and planning of European landscapes and organises European co-operation on landscape issues.</p> <p>The Convention aims to encourage public authorities to adopt policies and measures at local, regional, national and international level for protecting, managing and planning landscapes throughout Europe. It covers all landscapes, both outstanding and ordinary, that determine the quality of people's living environment. The text provides for a flexible approach to landscapes whose specific features call for various types of action, ranging from strict conservation through protection, management and improvement to actual creation.</p> <p>The Convention proposes legal and financial measures at the national and international levels, aimed at shaping "landscape policies" and promoting interaction between local and central authorities as well as trans-frontier cooperation in protecting landscapes. It sets out a range of different solutions which States can apply, according to their specific needs.</p> <p>The Council of Europe intergovernmental committees will be supervising the convention's implementation. The text also provides for a Council of Europe Landscape award, to be given to local or regional authorities or an NGO which introduced exemplary and long-lasting policies or measures to protect, manage and plan landscapes.</p>	<p>The WR &amp; SR Plan and SEA must take account of the outstanding and the ordinary landscape which determines the quality of people's living environment.</p>
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<p>Council of Europe (2006) European Landscape Convention</p>	<p>The European Landscape Convention (ELC) is the first international convention to focus specifically on landscape. Created by the Council of Europe, the convention promotes landscape protection, management and planning, and European co-operation on landscape issues.</p> <p>Signed by the UK Government in February 2006, it became binding from March 2007. It applies to all landscapes, towns and villages, as well as open countryside; the coast and inland areas; and ordinary or even degraded landscapes, as well as those that are afforded protection. The Convention was reaffirmed as being part of the Defra delivery framework through the Natural Environment White Paper, June 2011.</p>	<p>The WR &amp; SR Plan and SEA should take account of the landscape protection requirements set out in this convention.</p>
<p>A Planning Strategy for Rural Northern Ireland</p>	<p>Establishes the objectives and the policies for land use and development appropriate to the particular circumstances of Northern Ireland and which need to be considered on a scale wider than the individual District Council Area.</p>	<p>The options must comply with Planning guidelines and legislation WR &amp; SR Plan will aid planning in Northern Ireland through provision of suitable water supply.</p>
<p>Planning Act (NI) 2011 and Local Development Plans  Strategic Planning Policy Statement (to replace PPS15: Flood Risk) that sets out additional guidance on development in flood risk areas</p>	<p>The SPSS which replaces PPS 1 - 18 contain policies on landscape/land-use related aspects and other planning matters, for example telecommunications or the built heritage, green belts and mineral extraction, and apply to the whole of Northern Ireland. See also Under Population &amp; Health.</p>	<p>The WR &amp; SR Plan and SEA should identify and address any potential impacts landscape.</p>
<p>The Planning (Environmental Impact Assessment) Regulations (Northern Ireland) 2015</p>	<p>Sets out in two schedules the type and scale of developments that would be subject to the requirement for Environmental Impact Assessment. Provides details on the matters for inclusion in an EIA.</p>	<p>Options under the plan may be subject to Environmental Impact Assessment (EIA).</p>

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Regional Development Strategy 2035	A Regional Development Strategy which offers a strategic and long-term perspective on the future development of Northern Ireland up to the year 2025. It has been prepared in close consultation with the community and seeks to define an agreed vision for the Region and to frame an agenda which will lead to its achievement.	The options must comply with Planning guidelines and legislation WR & SR Plan will aid planning in Northern Ireland through provision of suitable water supply.
A Planning Strategy for Rural Northern Ireland	Establishes the objectives and the policies for land use and development appropriate to the particular circumstances of Northern Ireland and which need to be considered on a scale wider than the individual District Council Area.	The options must comply with Planning guidelines and legislation. The WR & SR Plan will aid planning in Northern Ireland through provision of suitable water supply.
Wildlife and Natural Environment Act (Northern Ireland) 2011, which amends the Wildlife (Northern Ireland) Order and the Environment (NI) Order adding provisions to protect species and ASSIs.	The Wildlife and Natural Environment Act (Northern Ireland) 2011, which amends the Wildlife (Northern Ireland) Order and the Environment (NI) Order adding provisions to protect a wider range of species and increase protection to ASSI's. The act gives authorities new powers to issue licences to permit otherwise prohibited action to be taken to resolve problems where there is no other satisfactory solution.	The WR & SR Plan and SEA should take account of legal duties in relation to designated sites when planning new options.
Development Plans (Various)	Set out the context and scale in which development may take place within certain areas of Northern Ireland.	The options must comply with Planning guidelines and legislation WR & SR Plan will aid planning in Northern Ireland through provision of suitable water supply.
Antrim Coast & Glens AONB Management Plan, 2008-2018	This sets out the 10 year vision and management plan for the Antrim Coast & Glens AONB. The aims of the plan are to: <ul style="list-style-type: none"> <li>• Protect, conserve and enhance the natural beauty of the AONB;</li> <li>• Promote opportunities to enhance enjoyment of it the area;</li> <li>• Define objectives for future management of the AONB and monitoring of the plan.</li> </ul>	The WR & SR Plan must take into account the aims and vision of the Plan and potential effects on the landscape in the WR & SR Plan area.

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Binevenagh AONB Management Plan (2010-2020)	This plan sets out the management plan for Binevenagh AONB and the vision for the AONB for 2030. It defines the key characteristics of the AONB within 3 interdependent themes; Land and Sea, Historic Environment and Sustainable Communities and highlights the related issues and opportunities.	The WR & SR Plan and SEA should take into account the issues and opportunities in the AONB area.
Causeway Coast AONB Management Plan 2013-2023	This plan sets out the management plan for Causeway Coast AONB over the next 10 years and the 30 year vision for the AONB. It defines the key characteristics of the AONB within 3 interdependent themes; Land and Sea, Historic Environment and Sustainable Communities and highlights the related issues and opportunities.	The WR & SR Plan and SEA should take account of the AONB management plan.
Lagan Valley Regional Park Strategic Vision, April 2013 – March 2018	The Lagan Valley Regional Park Management Plan defines a program of work around key areas; Biodiversity, Visitors, Community, Landscape, Heritage and Health and Recreation. The plan defines the specific actions, target dates, key organisations involved and outcomes and impacts expected.	The WR & SR Plan and SEA should take account of the AONB management plan and its targets and intended outcomes.
Mourne AONB Management Plan 2010-2015	The Mourne AONB Management Plan defines a clear program of work including specific tasks or actions designed to meet objectives and targets, target dates, key organisations involved, outcomes and impacts expected and a method to assess the achievement of the targets.	The WR & SR Plan and SEA should take account of the AONB management plan aims and objectives.
Ring of Gullion AONB Management Action Plan 2011 – 2016 and 2016-2021	The Mourne AONB Management Plan defines a clear objectives and actions for protecting and enhancing the AONB. Target dates, key organisations involved, are defined.	The WR & SR Plan and SEA should take account of the AONB management plan aims and objectives.
Strangford Lough and Lecale Heritage Management Strategy and Strangford Lough and Lecale Action Plan 2013-2018	The Strangford Lough and Lecale Management Strategy recognises the importance of the area and aims to protect and conserve its treasures whilst providing for their enjoyment in the context of a healthy community and thriving economy. The Action Plan defines the aims and objectives, actions, targets and organisations responsible to managing the AONB.	The WR & SR Plan and SEA should take account of the AONB management strategy and action plan' aims and objectives.
<b>Air Quality &amp; Noise</b>		

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<p>Ambient Air Quality Directive (2008/50/EC) and 4th air quality daughter directive (2004/107/EC)</p>	<p>This sets legally binding limits for concentrations in outdoor air of major air pollutants that impact public health such as particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and nitrogen dioxide (NO<sub>2</sub>). As well as having direct effects, these pollutants can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas) which can be transported great distances by weather systems. The 2008 directive replaced nearly all the previous EU air quality legislation and was made law in Northern Ireland through the Air Quality Standards Regulations (Northern Ireland) 2010.</p>	<p>The WR &amp; SR Plan and SEA should take account of the emerging requirements of these air quality directives.</p>
<p>Defra (2011) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007</p>	<p>The Strategy sets out a way forward for work and planning on air quality issues, sets out the air quality standards and objectives to be achieved, introduces a new policy framework for tackling fine particles, identifies potential new national policy measures which modelling indicates could give further health benefits and move closer towards meeting the Strategy's objectives.</p>	<p>The WR &amp; SR Plan should not affect air quality.</p>
<p>The Air Quality Standards Regulations (Northern Ireland) 2010</p>	<p>These regulations implement the requirements of the Ambient Air Quality Directive (2008/50/EC) and 4th air quality daughter directive (2004/107/EC).</p>	<p>The WR &amp; SR Plan and SEA should address the air quality legal requirements as set out in these regulations; however the plan is unlikely to affect air quality.</p>
<p><b>Climatic Factors</b></p>		
<p>2007 Kyoto Protocol on Climate Change</p>	<p>The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions. These amount to an average of five per cent against 1990 levels over the five-year period 2008-2012.</p> <p>The major distinction between the Protocol and the Convention is that while the Convention encouraged industrialised countries to stabilize GHG emissions, the Protocol commits them to do so.</p>	<p>The WR &amp; SR Plan and SEA should take account of status of the Protocol and implications for future long term planning. UK Government has a commitment to reach target of reduced greenhouse gas emissions. All public bodies have a duty to help comply with this objective.</p>

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<p>EC Renewable Energy Directive on the Promotion of the use of energy from renewable sources Directive (2009/28/EC)</p>	<p>This directive sets a target for the UK to achieve 15% of its energy consumption from renewable sources by 2020 as a contributory factor in tackling climate change. This compares to 3% in 2009.</p> <p>This requires Member States to establish national action plans which set the share of energy from renewable sources consumed in transport, as well as in the production of electricity and heating, for 2020. These action plans must take into account the effects of other energy efficiency measures on final energy consumption (the higher the reduction in energy consumption, the less energy from renewable sources will be required to meet the target).</p> <p>This impacts on water company plans through encouraging increased use of renewable energy resources and exploring renewable energy production options e.g., biogas production from sewage treatment works.</p>	<p>The WR &amp; SR Plan and SEA should demonstrate that renewable energy sources and potential options for generation are being considered.</p>
<p>Paris Agreement 2015</p>	<p>Signed by nearly 200 countries the agreement with the United Nations Framework Convention on Climate Change (UNFCCC) came into effect on 4 November 2016. It sets target to keep global temperature rise to under 2°C by 2050 - The WR &amp; SR Plan and SEA should take account of status of the agreement and implications for future long term planning. UK Government has a commitment to reach target of reduced greenhouse gas emissions.</p>	<p>The WR &amp; SR Plan should take into account the UK and Northern Ireland's commitment.</p>



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<b>EU Energy and Climate (2020) Package 2009</b>	<p>The 2020 package is a set of binding legislation to ensure the EU meets its climate and energy targets for the year 2020. The package sets three key targets:</p> <ul style="list-style-type: none"><li>• 20% cut in greenhouse gas emissions (from 1990 levels);</li><li>• 20% of EU energy from renewables;</li><li>• 20% improvement in energy efficiency.</li></ul> <p>In October 2014, all EU member states agreed to a new EU Energy and Climate Framework that will require the EU to reduce GHG emissions by 40% by 2030.</p> <p>To achieve the 40% GHG emissions reduction the EU operates two schemes, the Emissions Trading System (EU ETS) that covers around 45% of the EU's GHG emissions and the Effort Sharing Decision (ESD) covering the remaining 55% of EU GHG emissions.</p> <p>Current proposals are for the UK to reduce emissions by 43% in the EU ETS and 37% in the ESD. UK Government has a commitment to reach target of reduced greenhouse gas emissions.</p>	<p>The WR &amp; SR Plan must take into account Northern Ireland's responsibility towards meeting these targets.</p>
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<p>Defra (2012) The 2012 Climate Change Risk Assessment and the 2017 Climate Change Risk Assessment (published Jan 2017)</p>	<p>The UK Climate Change Risk Assessment (CCRA) is the first assessment of its kind for the UK and the first in a 5 year cycle. It reports on a review of the evidence for over 700 potential impacts of climate change in a UK context. Detailed analysis was undertaken for the water and flood and coastal erosion management sectors, on the basis of their likelihood, the scale of their potential consequences and the urgency with which action may be needed to address them.</p> <p>The outputs provide an evidence base to be used by central Government and water companies to identify priorities for action and appropriate adaptation measures that will be required to minimise risks to the economy, environment and society. Water related risks identified by the CCRA include impact on aquatic ecosystem services including water quality, water supply and biodiversity resulting from higher temperatures and changes in rainfall patterns. The Government expects water company adaptation plans to be based on robust risk assessment and informed by the best available evidence, including UKCP09 (reference Defra Oct 12 Statement of Obligation). Findings of the assessment include:</p> <ul style="list-style-type: none"> <li>• Maintaining supplies may become particularly challenging in south-east unless further action is taken both to reduce the demand for water and to increase supplies;</li> <li>• By the 2050s, there may be a significant decrease in the number of rivers where sustainable water abstraction is possible and this situation may grow more severe by the 2080s.</li> <li>• Increases in water demand for irrigation of crops;</li> <li>• An increase in precipitation in winter months due to a combination of greater depths and more frequent heavy rainfall events - suggesting larger volumes of runoff with potential negative impacts on flood risk and sewer overflows in urban environments;</li> <li>• Flash-flooding associated releases from combined sewer overflows (CSO) could in turn increase associated illnesses at</li> </ul>	<p>The WR &amp; SR Plan and SEA should take account of the latest findings on UK climate change risk such as the CCRA to inform its proposals.</p>
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	the coast due to the varying occurrence of microbial pathogens in the marine environment.	
UKCIP (2009) UK Climate Projections UKCP09 (2009)	The UKCP09 Projections is a UK government programme to provide authoritative climate change projections for all sectors such as water with statutory responsibilities to develop climate mitigation and adaption plans.	The WR & SR Plan and SEA should demonstrate that the most appropriate climate change data has been used in developing future plans.
DECC (2011) The Renewables Roadmap and (2009) UK Renewable Energy Strategy	Renewable energy expansion is a key element in reduction of greenhouse gases and addressing climate change. The Renewables Roadmap sets out the Coalition Government's action plan to accelerate the UK's deployment and use of renewable energy to meet its 2020 target. Despite not having a legally binding target, Northern Ireland is responsible for contributing to the overall UK target.	The WR & SR Plan and SEA should take account of potential for micro generation and renewable energy opportunities.
Defra (2012) Emerging National Adaptation Programme  DoE (2014) Northern Ireland Climate Change Adaptation Programme	DAERA have been responsible for developing a Climate Change Adaptation Programme under the National Adaptation Programme to address the risks set out in the first UK Climate Change Risk Assessment for Northern Ireland. The first National Adaptation Programme was published in 2013 and focused on helping UK businesses, local authorities and civil society to become more resilient or 'Climate Ready' to climate change impacts. Defra and DAERA encourage water companies to become involved in its development and to address this approach in their planning. The National Adaptation Programme will be reviewed every five years to address the most pressing climate change risks to the UK.	The WR & SR Plan should address emerging development of national climate adaptation programmes.
The Climate Change and Sustainable Energy Act, 2006	Enacted following the publication of the UK Climate Change Programme (2006) the Act extends to Northern Ireland in terms of reporting on greenhouse gas emissions, microgeneration, energy efficiency, community energy and renewable heat.	The WR & SR Plan and SEA should take account of potential for micro generation opportunities and energy efficiency.

<p>DECC (2008) Climate Change Act</p>	<p>The world's first long-term legally binding framework to tackle the dangers of climate change. The Climate Change Act creates a new approach to managing and responding to climate change in the UK, by setting ambitious, legally binding targets, taking powers to help meet those targets, strengthening the institutional framework, enhancing the UK's ability to adapt to the impact of climate change, establishing clear and regular accountability to the UK Parliament and to the devolved legislatures.</p> <p>Despite not having a legally binding target, Northern Ireland is responsible for contributing to the overall UK target.</p> <p>A key requirement of the act is a UK wide Climate Change Risk Assessment (CCRA) that must be produced every five years. This helps inform a national adaptation programme (NAP) that must be reviewed every five years.</p> <p>Water companies are expected to plan for mitigating and adapting to the impacts of climate change over the next decades. Under the Act, water companies are 'reporting authorities' required to prepare reports detailing assessments of current and future climate risks that they have undertaken on their assets, as well as potential adaptation options.</p>	<p>The WR &amp; SR Plan and SEA should take account of the requirements of the Act including climate adaption planning reports, the need to reduce emissions of greenhouse gases and to reduce energy use.</p>
<p>Carbon Reduction Commitment (Defra (2011) The Government Carbon Plan)</p> <p>NI Mitigation Action Plan 2016/2017</p>	<p>The aim of the Carbon Reduction Commitment is to reduce the level of carbon emissions currently produced by the larger 'low energy-intensive' organisations by approximately 1.2 million tonnes of CO2 per year by 2020. As a Climate Change Bill commitment, the scheme is aiming for a 60% reduction in CO2 emissions by 2050.</p> <p>The Carbon Reduction Commitment will cover both public and private sector organisations. Despite not having a legally binding target, Northern Ireland is responsible for contributing to the overall UK target.</p>	<p>The WR &amp; SR Plan and SEA should take account of the need to reduce emissions of greenhouse gases and to reduce energy use.</p>

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<p>The Air Quality Standards Regulations (Northern Ireland) 2010</p>	<p>These regulations implement the requirements of the Ambient Air Quality Directive (2008/50/EC) and 4th air quality daughter directive (2004/107/EC).</p>	<p>The WR &amp; SR Plan and SEA should address the air quality legal requirements as set out in these regulations; however the plan is unlikely to affect air quality.</p>
<p>Energy Efficiency (Northern Ireland) Order 1999</p>	<p>Confers power - (a) on the Department of Economic Development to promote the efficient use of energy in industry and in voluntary organisations; and (b) on the Department of the Environment to promote the efficient use of energy in residential accommodation and by public bodies.</p>	<p>Aspiration to make operation of the water infrastructure as energy efficient as possible</p>
<p><b>Water Environment</b></p>		
<p>Water Safety Plan Manual, World Health Organisation, (WHO) 2006</p>	<p>The UK regulations (Water Supply (Water Quality) Regulations (NI) 2007 as amended 2009, 2010 and 2015) for controlling drinking water quality according to the EC Drinking Water Directive requires that water companies following the WHO approach for developing Water Safety Plans (WSPs) as set out in this manual as the Drinking Water Directive does not specify this approach.</p>	<p>The SEA assumes drinking water safety requirements are being applied.</p>
<p>EC Floods Directive (2007/60/EC)</p>	<p>This sister directive to the Water Framework Directive requires Member States to identify and assess the flood risk of all water courses and coast lines; map the flood extent and assets and humans at risk in these areas; and, take adequate and coordinated measures to reduce this flood risk.</p> <p>Member States are required to complete a preliminary assessment by 2011, draw up flood risk maps by 2013 and establish flood risk management plans focused on prevention, protection and preparedness by 2015.</p>	<p>The WR &amp; SR Plan should consider the inland flood risks.</p>

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<p>EC Water Framework Directive (2000/60/EC) largely enacted through the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003.</p>	<p>The Water Framework Directive (WFD) establishes a standard EC strategic approach to managing groundwater, wetlands and surface water bodies to meet common environmental objectives.</p> <p>It is implemented through River Basin Management Plans that set out an objective for each water body and summarise the measures which will be taken to achieve this.</p> <p>WFD objectives include:</p> <p>For surface waters:</p> <ul style="list-style-type: none"> <li>• prevent deterioration;</li> <li>• aim to achieve good ecological status (or for Artificial or Heavily Modified Water Bodies, good ecological potential);</li> <li>• aim to achieve good chemical status;</li> <li>• aim to reduce/cease emissions, discharges &amp; losses from priority substances and priority hazardous substances and;</li> <li>• meet protected area objectives where relevant.</li> </ul> <p>For groundwater:</p> <ul style="list-style-type: none"> <li>• prevent deterioration of status;</li> <li>• aim to achieve good quantitative status;</li> <li>• aim to achieve good chemical status;</li> <li>• prevent or limit the input of pollutants;</li> <li>• reverse significant upward trends in the concentration of pollutants and;</li> <li>• meet protected area objectives where relevant.</li> </ul>	<p>The WR &amp; SR Plan must take account of the targets and aims of the Directive to ensure water bodies meet required standards. This covers both ecological status of water bodies and water quality improvements.</p>
<p>EC Drinking Water Directive (1998/83/EC)</p>	<p>The Directive is the primary legislation that sets standards for drinking water quality. It was implemented in relation to public water supplies by the Water Supply (Water Quality) Regulations (NI) 2007, as amended. These contain the water quality standards of the Directive and national standards. Under the Regulations, water companies are required to implement a risk based approach using the World Health Organisation (WHO) 2004 Guidelines for Drinking Water Quality – Water Safety Plans (WSPs) methodology. Imminent new requirements include the introduction of a stricter health based standard for lead in 2013.</p>	<p>The WR &amp; SR Plan will need to ensure drinking water quality standards are legally compliant when assessing public water supply options.</p>

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<p>EC Environmental Liability Directive (2004/35/EC)</p>	<p>The Directive seeks to prevent and remedy environmental damage – specifically, damage to EC protected habitats and species, water resources and land contamination which presents a threat to human health. It is based on the “polluter pays” principle – making operators financially liable for threats of or actual damage.</p>	<p>The WR &amp; SR Plan and SEA should take account of the Directive by identifying and avoiding measures likely to cause environmental damage.</p>
<p>EC Groundwater Daughter Directive (2006/118/EC) that replaced the EC Groundwater Directive (80/68/EEC)</p>	<p>This directive will be repealed by the WFD in December 2013 with no changes to the current directive objectives to:</p> <ul style="list-style-type: none"> <li>• Achieve ‘Good’ groundwater chemical status by 2015, commonly referred to as ‘status objective’;</li> <li>• Achieve Drinking Water Protected Area Objectives;</li> <li>• Implement measures to reverse any significant and sustained upward trend in groundwater quality, referred to as ‘trend objective’; and</li> <li>• Prevent or limit the inputs of pollutants into groundwater, commonly referred to as ‘prevent or limit’ objectives</li> </ul> <p>In particular, it provides instructions on how to classify the chemical status of groundwater bodies and identify upward trends in pollutant concentrations. It is implemented through the Groundwater Regulations (Northern Ireland) 2009 as amended 2009, 2011, 2014 and 2016 which regulates the discharging of hazardous substances and non-hazardous pollutants onto land and establishes the threshold values for assessing groundwater quality.</p>	<p>The WR &amp; SR Plan must take account of the main objective of the Directive to prevent pollution of groundwater.</p>
<p>Bathing Water Directive (2006/7/EC)</p>	<p>Currently in transition, this directive sets standards for bathing waters. Designated bathing waters in Northern Ireland are monitored under the Bathing Water Regulations 2013. From 2015 Member States have been required to take realistic and proportionate measure to increase the number of bathing waters meeting the ‘Good’ or ‘Excellent’ classifications. Existing improvement schemes should continue but planning for the future should now be targeted at the revised classifications: ‘Sufficient’, ‘Good’, and ‘Excellent’ (those that fail to meet ‘Sufficient’ are classified as ‘Poor’).</p>	<p>The WR &amp; SR Plan must take account of the emerging standards from the transition to the new Directive.</p>

<p>EC Dangerous Substances Directive (DSD) (76/464/EEC) (to be replaced from 2013 by the WFD; and Environmental Quality Standards (Directive 2008/105/EC) (EQSDir)</p>	<p>These directives control the management of surface water chemical status, including control of dangerous substances. They are implemented respectively through the Environmental Permitting Regulations and Surface Waters (Dangerous Substances) (Classification) Regulations 1998.</p> <p>Substances for control are identified in a list of Priority Substances and Priority Hazardous Substances with their Environmental Quality Standards (EQSs) which must be met to achieve 'Good Chemical Status'. These are being updated by the EC and will form the basis for WFD second cycle planning. Also Member States are required to identify substances of national concern which are discharged in significant quantities as 'Specific Pollutants' and then derive EQSs for them using the WFD methodology. The WFD UK Technical Advisory Group is currently proposing a list of new 'Specific Pollutants' and EQSs and amendments to some existing EQSs based on the most recent scientific knowledge and these may also be added to the second cycle planning.</p> <p>Water companies must meet the requirements of:</p> <ul style="list-style-type: none"> <li>• The current and future EQSs, and provide information to inform River Basin inventories of emissions discharges &amp; losses;</li> <li>• Prepare for the progressive reduction of priority substances and phase out requirements for priority hazardous substances; and,</li> <li>• If outputs from sewage treatment works are deemed to potentially lead to failure to meet 'Good' chemical status water companies should be prepared to plan cost effective infrastructure development/treatment upgrades in the second or third round of river basin planning.</li> </ul>	<p>The WR &amp; SR Plan and SEA should take account of emerging water chemical status in accordance with statutory requirements and the impact of REACH, PPC and other reduction initiatives.</p>
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<p>The Floods Directive (2007/60/EC), a sister Directive to the Water Framework Directive.</p>	<p>The directive's aim is to reduce and manage the risks floods pose to human health, the environment, cultural heritage and economic activity. It requires Member States to identify the river basins and associated coastal areas at risk of flooding in flood risk maps by 2013 and establish flood risk management plans focused on prevention, protection and preparedness by 2015. The Directive applies to inland waters as well as all coastal waters across the whole territory of the EU. It is to be coordinated with the implementation of the Water Framework Directive, through the co-ordination of FRMPs and RBMPs and through the statutory consultation of draft plans.</p>	<p>The WR &amp; SR Plan and SEA should ensure that flood risk impacts have been assessed.</p>
<p>EC Freshwater Fish Directive (2006/44/EC) (revoked 2013 - Replaced by the Water Framework Directive in 2013.)</p>	<p>This Directive covers improvements in habitats and water quality for aquatic biodiversity and fisheries. Its objectives are to protect and improve fresh waters to support coarse and game fisheries.</p>	<p>The WR &amp; SR Plan must take account of areas important to freshwater fisheries and potential detrimental and beneficial impacts on these sites.</p>
<p>EC Nitrates Directive (91/676/EEC)</p>	<p>The Directive's purpose is to both reduce and prevent water pollution caused by nitrates from agricultural land. It sets out to protect current and future drinking resources as well as prevent eutrophication. Nitrate Vulnerable Zones are defined to protect waters from pollution. Further controls on nitrates impacts have been introduced under the WFD e.g. initiatives under Catchment schemes.</p>	<p>The WR &amp; SR Plan must take account of any Nitrate Vulnerable Zones within the WR &amp; SR Plan area and consider initiatives under Catchment schemes to address nitrates issues.</p>
<p>EC Shellfish Waters Directive (2006/113/EC) (Revoked 2013 - Replaced by the Water Framework Directive in 2013.)</p>	<p>Its requirements were transferred to WFD in 2013 are to preserve and enhance shellfish life and growth. It sets out mandatory and guideline water quality requirements for shellfish waters. Obligations are implemented in the Surface Waters (Shellfish) Directions 1997. Measures necessary to implement the SWD are identified in Pollution Reduction Plans (PRPs) and will become part of the RBMP Programme of Measures from 2014.</p>	<p>The WR &amp; SR Plan must take account of potential detrimental and beneficial impacts on designated shellfish waters within the WR &amp; SR Plan area.</p>

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<p>EC Urban Wastewater Treatment Directive (91/271/EEC) transposed to The Urban Waste Water Treatment (Northern Ireland) (Amendment) Regulations 2007.</p>	<p>The Directive's purpose is to protect the environment from urban and industrial discharges and covers the collection treatment and discharge of domestic, mixed and industrial waste water. It sets out emission standards in pollutant concentrations for discharges from sewage treatment works. Member states are required to ensure that:</p> <ul style="list-style-type: none"> <li>• Sewers are provided for urban waste water from cities, towns, villages and industrial premises above a certain size;</li> <li>• Urban waste water is treated to specified minimum standards before discharge into the environment;</li> <li>• Sensitive waters are identified as 'sensitive areas' and discharges to them are stricter.</li> </ul> <p>In Northern Ireland there are 6 areas identified as sensitive areas under the UWWTD.</p>	<p>The WR &amp; SR Plan should seek to demonstrate ongoing active management of sewers including measures used for monitoring intermittent discharges and spill frequency trigger levels in permits for discharges impacting on particularly sensitive waters (for example bathing and shellfish waters) where appropriate.</p>
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<p>2010/75/EU Directive on Industrial Emissions Directive due to replace: EC Integrated Pollution Prevention and Control Directive (IPPCD) (2008/1/EC)</p> <p>Waste Incineration Directive (2000/76/EC)</p>	<p>The Industrial Emissions Directive (IED) currently being transposed into English law by an update to the Environmental Permitting Regulations (2010) in January 2013 will replace seven existing Directives of which the following are relevant to water management: Integrated Pollution Prevention &amp; Control; Waste Incineration. The IPPCD is designed to prevent or, where that is not practicable, to reduce emissions to water from the listed activities, including waste such as wastewater sludges. It applies the approach of best available techniques (BAT) which is determined by the regulator i.e. the Northern Ireland Environment Agency for each installation. The Waste Incineration Directive (2000/76/EC) is applicable to all incineration or co-incineration activity e.g. sewage sludge.</p> <p>The Industrial Emissions Directive maintains and strengthens IPPC requirements, as well as extending them to more waste treatment activities, in particular those involving recovery using biological processes. However, activities covered by Directive 91/271/EEC (the “urban waste water treatment” Directive) are excluded. Activities newly subject to IPPC will have to meet the requirements by July 2015: those already subject to IPPC and carried out in existing installations will have the strengthened requirements applied from January 2014.</p> <p>The waste incineration requirements remain virtually unchanged from those in the Waste Incineration Directive.</p>	<p>The WR &amp; SR Plan and SEA should explain how sludge treatment, incineration and disposal will be compliant with these directives.</p>
<p>Marine Strategy Framework Directive (2008/56/EC)</p>	<p>Establishes a framework within which Member States will take measures to maintain or achieve ‘good environmental status’ (GES) in the marine environment by 2020.</p>	<p>Some options may impact on the marine environment.</p>

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<p>Water (Northern Ireland) Order 1999</p>	<p>The Water (Northern Ireland) Order sets out measures to combat and prevent pollution of waterways and groundwater in Northern Ireland. It sets out the role, functions and responsibilities of the Department of the Environment and their duty to protect the environment from water pollution. It gives the Northern Ireland Environment Agency (NIEA) powers to issue notices to businesses and apply for a court order to prevent or remedy pollution, introduce regulations to further prevent pollution, regulate the abstraction and impounding of water, introduce charging schemes, carry out engineering or building operations and acquire land.</p>	<p>Need to protect water quality / prevent pollution incidents. Some options may require licensing.</p>
<p>Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003</p>	<p>Implements the Water Framework Directive.</p>	<p>Must take measures to ensure 'good ecological status' is maintained and maintain sustainable management practices.</p>
<p>Water and Sewerage Services (Northern Ireland) Order 2006</p>	<p>Establishes government-owned companies' obligations for water supply, drinking water quality, trade effluent and sewage disposal, water and sewerage charges and customer service.</p>	<p>The WR &amp; SR Plan should take account of emerging water balance demand discussions.</p>
<p>The Water Environment (Floods Directive) Regulations (Northern Ireland) 2009</p>	<p>This legislation transposes into Northern Ireland law, the European Directive on the Assessment and Management of Flood Risks (2007/60/EC), known as the Floods Directive. The Floods Directive is designed to help Member States establish a framework for managing flood risk that is aimed at reducing the adverse consequences of flooding on human health, the environment, cultural heritage, and economic activity.</p>	<p>Some options may impact upon flood maps and management plans Particular care to be taken for options that may impact on areas of potentially significant flood risk – see also reference to PPS 15 Planning and Flood Risk for further information.</p>
<p>Water Resources (Environmental Impact Assessment) (Amendment) (Regulations) Northern Ireland 2009</p>	<p>Outlines requirements for assessing the effects of agricultural water management projects on the environment, and procedures for considering applications or proposals for projects. Amends 2005/32 as a result of Water Abstraction and Licensing Regulations (Northern Ireland) 2006. Outlines measures for public participation in creating plans or programmes relating to the environment.</p>	<p>The WR &amp; SR Plan should form the water resources supply demand balance component of its business plan.</p>

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The Environment (Northern Ireland) Order 2002	The establishment of the Northern Ireland Environment Agency for the responsibility for environmental management in NI. Includes contaminated land regime, protection of the aquatic environment, air quality management and producer responsibility.	The WR & SR Plan must meet the requirements of the Act and related regulations.
The Environmental Liability (Prevention and Remediation) (Amendment) Regulations (Northern Ireland) 2009	These regulations provide additional protection to habitats and species identified in Annexes 1 and 2 of the EC Habitats Directive (92/43/EEC). Water related damage areas include: <ul style="list-style-type: none"> <li>• Adverse effects on surface water or groundwater consistent with a deterioration in the water's status;</li> <li>• Adverse effects on the integrity of a Site of Special Scientific Interest (SSSI) or on the conservation status of species and habitats protected by EU legislation outside SSSIs.</li> </ul>	The WR & SR Plan must take into consideration the guidance provided by the regulations.
An Integrated Coastal Zone Management Strategy for Northern Ireland 2006 - 2026	A key aspect of the implementation of the Strategy was the establishment of a Northern Ireland Coastal and Marine Forum [CMF]. The Coastal and Marine Forum is an independent, non-statutory body made up of a cross-section of interests ranging from local government, business, agriculture, fishing and environmental bodies.	Some options may impact on the coastal zone and therefore note to be taken of this strategy.
Water Abstraction and Impoundment (Licensing) (Amendment) Regulations (Northern Ireland) 2007	Aims to protect the water environment and to secure efficient and sustainable water use. These Regulations provide a consistent, environmental risk based, approach to the assessment and authorisation of water abstraction and impoundment activities within Northern Ireland. NIEA is the competent authority and is responsible for implementing the regulations in Northern Ireland.	Some options may require licensing / amendments to existing licences.  Requirement to protect aquatic habitats.
Quality of Bathing Water (Amendment) Regulations (Northern Ireland) 2013	These regulations implement the EC Bathing Water Directive. Quality standard monitoring has changed from Faecal coliform to E Coli.	The WR & SR Plan and SEA must ensure that proposed measures affecting Bathing Waters will be compliant with these Regulations.

<p>The Pollution Prevention &amp; Control (Northern Ireland) Regulations 2003</p>	<p>These regulations provide a wide range of water pollution control legislation under a suite of EC directives including: Groundwater/Water Framework Directive, Integrated Pollution Prevention and Control Directive (IPPCD), and the Waste Incineration Directive. They subsume the Groundwater Regulations (2009) and will be updated in January 2013 to transpose the Industrial Emissions Directive that will replace seven existing Directives of which the following are relevant to water management: Integrated Pollution Prevention &amp; Control; Waste Incineration.</p> <p>For WFD enforcement they reclassify List I and List II substances, now referring to hazardous substances and non-hazardous pollutants. While hazardous substances generally equate to the former List I's, non-hazardous pollutants covers a broader range of substances than under the former List II's. Radioactive substances are included within the scope of the GWDD because they are classified as pollutants under the WFD. Although radioactive substances were not included formerly under List I, they are classified as hazardous substances.</p>	<p>The WR &amp; SR Plan and SEA must ensure that any proposals likely to impact on groundwater quality remain compliant with these regulations.</p>
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<p>Water Environment (Floods Directive) Regulations (Northern Ireland) 2009</p>	<p>These regulations implement the requirements of the Floods Directive setting out a six year time cycle for flood risk management planning that aligns with the WFD planning cycle. Under the directive, Northern Ireland was required to:</p> <ul style="list-style-type: none"> <li>• Prepare a Preliminary Flood Risk Assessment (PFRA) for the whole of Northern Ireland by Dec;</li> <li>• Identify 20 areas in NI which have the most significant flood risk, known as “Significant Flood Risk Areas” for more detailed planning and flood mapping;</li> <li>• Prepare Flood Risk Management Plans by Dec 2015 highlighting the flood hazards and risks in the 20 most Significant Flood Risk Areas, identifying the measures that will be taken to address flooding and setting out how relevant authorities will reduce the risks.</li> </ul> <p>Under these regulations public bodies (including NI Water) are required to comply with requests for information by the Department exercising their functions under these regulations.</p>	<p>The WR &amp; SR Plan and SEA should address the requirements for provision of appropriate flood related information to enable completion of FRMPs.</p>
<p>The Reservoirs Act (Northern Ireland) 2015</p> <p>PPS 15 Flood Risk Management</p>	<p>Under the Reservoirs Act the water company operating or owning the reservoir, has ultimate responsibility for the safety of the reservoir. The Act applies to all “large raised reservoirs”, which means a reservoir capable of holding at least 25,000 cubic metres of water above the natural level of any ground adjoining the reservoir. The act places obligations on undertakers in relation to supervision, safety and reporting.</p> <p>Under the Flood Risk Regulations, the Environment Agency is required to develop Flood Risk Management Plans that cover large raised reservoirs. Water companies who are reservoir undertakers are required to work with the Environment Agency to set out appropriate measures to manage flood risk related to large, raised reservoirs.</p>	<p>The WR &amp; SR Plan must take account of responsibilities for managing reservoirs in flood and drought conditions.</p>
<p>Surface Waters (Fishlife) (Classification) (NI) Regulations 1997</p>	<p>See under Biodiversity.</p>	<p>See under Biodiversity.</p>

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<p>The Surface Waters (Shellfish) (Classification) Regulations (Northern Ireland) 1997</p>	<p>See under Biodiversity.</p>	<p>See under Biodiversity.</p>
<p>Water Framework Directive) Regulations (Northern Ireland) 2003</p>	<p>In accordance with the Directive, these Regulations establish a strategic planning process to manage, protect and improve water quality Northern Ireland that is based on the use of river basin districts.</p>	<p>The WR &amp; SR Plan must meet the requirements of the regulations.</p>
<p>The Water Industry Act 1991 and Water Act (2003) transposed into NI legislation through the Water and Sewerage Services (Northern Ireland) Order 2006.</p>	<p>The Water Industry Act 1991 (WIA 1991) sets out the duties of water companies to supply drinking water that is safe and of a quality acceptable to consumers.</p> <p>The Water and Sewerage Services (NI) Order 2006 sets out the duties of the responsible authority for Water in Northern Ireland; Northern Ireland Authority for Utility Regulation (NIAUR).</p>	<p>The WR &amp; SR Plan must be prepared in accordance with these Acts, i.e. set out how NIW will manage, and continue to manage, its water resources to meet its legal obligations.</p>
<p>NI Water, Water Resources Management Plan 2012</p>	<p>This sets out the statutory requirements a water undertaker must meet when preparing and consulting on its draft and final Water Resources Management Plans. Overall requirement is to ensure effective water resources management planning that maintains a balance between the needs of the public water supply and the environment.</p>	<p>The WR &amp; SR Plan must follow these regulations.</p>
<p>The Water Supply (Water Quality) Regulations (NI) 2007, as amended. Amendment (2015)</p>	<p>These regulations implement Drinking Water Directive (DWD) requirements for controlling water quality including chemical and biological contamination. They require water companies to assess the risk posed by contamination of the raw water and have water treatment in place to ensure that the disinfection process is robust and able to either inactivate or remove all pathogenic organisms, including viruses, parasites and bacteria; and prevent pollution from chemicals, before water is supplied.</p>	<p>The WR &amp; SR Plan and SEA should take account of statutory requirements to assess risks from contamination of raw water.</p>



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<p>NI Water (2014) Our Strategy for NI Water</p>	<p>This document indicates that water resource management measures should:</p> <ul style="list-style-type: none"> <li>• Continue to aim for sustainable levels of abstraction;</li> <li>• Recognise the challenges posed by climate change;</li> <li>• Protect conservation sites that depend on water;</li> <li>• Safeguard water resources through effective catchment management, considering the interaction between quality and quantity;</li> <li>• Promote water efficiency measures, with water companies contributing to water efficiency commitment;</li> <li>• Reduce leakage further;</li> <li>• Incentivise efficient use of water.</li> </ul>	<p>The WR &amp; SR Plan and SEA should address the regional resource planning strategy for the SE.</p>
<p>Groundwater Regulations (Northern Ireland) 2009</p>	<p>Implements the Groundwater Directive 2006/118/EC on the protection of groundwater against pollution and deterioration. Introduces classification systems in line with EU developments, makes it an offence to discharge listed substances without an authorisation, controls issuing and reviews of authorisations and consents. Covers enforcement, codes of practice and penalties.</p>	<p>The WR &amp; SR Plan will need to protect water quality / prevent pollution incidents.</p>
<p>Adopted and emerging Local Development Plans</p>	<p>See under Population &amp; Health.</p>	<p>See under Population &amp; Health.</p>
<p><b>Cultural Heritage &amp; Archaeology</b></p>		
<p>Convention for the Protection of the Architectural Heritage of Europe (Granada 1985)</p>	<p>The Convention for the protection of the architectural heritage of Europe is a legally binding instrument which set the framework for an accurate conservation approach within Europe. For a total of forty three member states of the Council of Europe, the Conventions total ratification/accession has reached forty-two countries since it was opened for signature in 1985. It entered into force on 1 December 1987.</p> <p>After 30 years of collaboration among member states of the Council of Europe, this convention constitutes an important framework for the safeguarding of the Cultural Heritage of monuments and sites.</p>	<p>The WR&amp;SRP proposal and SEA should take into account and understand the value of cultural heritage and archaeology.</p>

<p>The European Convention on the Protection of the Archaeological Heritage (Valletta 1992)</p>	<p>The Valletta Convention is an international legally binding treaty within Europe. It deals with the protection, preservation and scientific research of archaeological heritage in Europe. In particular, the revised Convention focuses on the problem of conservation of archaeological heritage in the face of development projects. Other threats to the archaeological heritage are:</p> <ul style="list-style-type: none"> <li>• Natural disasters;</li> <li>• Illicit and unscientific excavations;</li> <li>• Lack of public awareness.</li> <li>•</li> <li>• In accordance with the Preamble, objectives of the revised Convention are:</li> <li>• To integrate the conservation and archaeological investigation of archaeological heritage in urban and regional planning policies;</li> <li>• To establish a co-operation and consultation processes between archaeologists, and project developers;</li> <li>• To set standards for funding and archaeological and conservational methods used in studying the “knowledge of the history of mankind”;</li> <li>• To promote educational actions and public awareness of the necessity of the protection and investigation of archaeological heritage in Europe; and</li> <li>• To foster international co-operation and joint action among all European countries in the field of archaeological resource management by means of developing and exchanging relevant scientific information, technologies and expertise.</li> </ul>	<p>The WR&amp;SRP proposal and SEA should take into account and understand the value of cultural heritage and archaeology.</p>
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<p>Council of Europe Framework Convention on the Value of Cultural Heritage for Society (Faro 2005)</p>	<p>The Faro Convention emphasizes the important aspects of heritage as they relate to human rights and democracy. It promotes a wider understanding of heritage and its relationship to communities and society. The Convention encourages us to recognize that objects and places are not, in themselves, what is important about cultural heritage. They are important because of the meanings and uses that people attach to them and the values they represent.</p> <p>The Faro Convention is a “framework convention” which defines issues at stake, general objectives and possible fields of intervention for member States to progress. Each State Party can decide on the most convenient means to implement the Convention according to its legal or institutional frameworks, practices and specific experience.</p>	<p>The WR&amp;SRP proposal and SEA should take into account and understand the value of cultural heritage and archaeology.</p>
<p>The Planning (NI) Act 2011 and Strategic Planning Policy Statement to replace PPS 6: Planning, Archaeology and The Built Heritage</p>	<p>This Act sets out the planning regulations on developments in the vicinity of listed buildings and conservation areas. This legislation provides the powers for DoE Planning Service to compile lists of buildings of special architectural or historic interest, as well as designate areas of special architectural or historic interest (Conservation Areas).</p> <p>This PPS sets out the Department's planning policies for the protection and conservation of archaeological remains and features of the built heritage. It embodies the Government's commitment to sustainable development and environmental stewardship.</p>	<p>The WR &amp; SR Plan should take account of planning policy for historic features affected by proposals.</p>
<p>Historic Monuments and Archaeological Objects (Northern Ireland) (Order) 1995</p>	<p>The Act gives protection to Scheduled Monuments, historic monuments and buildings, archaeological objects and wrecks. Any work affecting a Scheduled Monument requires Scheduled Monument Consent.</p>	<p>The WR &amp; SR Plan and SEA should be compliant with the requirements of these regulations. There is a legal requirement to comply with terms of this order when developments may impact on sites of archaeological importance. Also sets out measures for protecting unknown sites.</p>

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<p>The Planning (Listed Buildings) Regulations (Northern Ireland) 2015 to replace Planning (Listed Buildings) Regulations (Northern Ireland) Order 1991</p>	<p>Under these regulations, listed Buildings are protected and are recognised to be of special architectural or historical interest. It sets out a duty for Local Authorities to preserve buildings and their setting. Any work physically affecting a Listed Building requires Listed Building Consent. Conservation Area designation provides control over demolition of unlisted buildings within a Conservation Area. Certain permitted development rights are limited within the area.</p> <p>Demolition within a Conservation Area requires Conservation Area Consent.</p>	<p>The WR &amp; SR Plan and SEA should be compliant with the requirements of these regulations.</p>
<p>Conservation Management Plans and Local Development Plans</p>	<p>These plans outline the conservation and development policies in local areas. Conservation Management Plans set out policies for specific heritage sites such as HMS Caroline and Alexandra Dock, Dungannon Castle Hill and Londonderry Town Walls.</p>	<p>The WR &amp; SR Plan and SEA should be compliant with the policies set out for conservation management and local development.</p>
<p><b>Geology and Soils</b></p>		
<p>The Planning (NI) Act 2011</p>	<p>The Act sets out the planning regulations on development and mining activities in order to protect geology, soils valuable landscapes.</p>	<p>The WR &amp; SR Plan and SEA should identify and address any potential management impacts on minerals extraction and restoration of minerals workings.</p>
<p>Nitrates Action Programme (Amendment) Regulations (Northern Ireland) 2015</p>	<p>These Regulations give further effect to Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources.</p>	<p>The WR &amp; SR Plan and SEA should identify and address any potential management impacts on soil and water quality.</p>
<p>2014-2020 Rural Development Programme</p>	<p>These documents present the need to address water management as an integral aspect of ensuring a sustainable future farming sector.</p>	<p>The WR &amp; SR Plan and SEA should take account of the current and projected use of water in agriculture.</p>
<p><b>Sustainability Issues</b></p>		
<p>Water and Sewerage Services Order (NI) 2006</p>	<p>NI Water as the appointed Undertaker, are required under the Water and Sewerage Services Order (NI) 2006 to provide a sustainable water supply.</p>	<p>The WR&amp;SR Plan and the SEA shall support the requirement to provide sustainable water supply.</p>

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<p>Department of Infrastructure, Sustainable Water – A Long Term Strategy for Northern Ireland</p>	<p>The Strategy presents a clear framework for action which will facilitate implementation of a range of initiatives aimed at delivering the long term vision to have a sustainable water sector in Northern Ireland.</p>	<p>The WR&amp;SR Plan will need to support the implementation of NI Water’.</p>
<p>DAERA (2010), Sustainable Development Strategy for the Northern Ireland and Sustainable Development Implementation Plan Defra (2011) Mainstreaming Sustainable Development. The Government’s Vision which builds on Defra (2005) Securing the Future; Delivering UK Sustainable Development Strategy</p>	<p>See population, economic development and human health. The strategy is intended to ‘ensure socially responsible economic development while protecting the resource base and the environment for the benefit of future generations.’ (UNCED, 1992). The Strategy aligns with the priorities within the Programme for Government and has been heavily influenced by the need to develop Northern Ireland’s economy. The Strategy outlines Priority Areas for Action, Strategic Objectives, Guiding Principles and Targets, as well as key challenges to achieving sustainability.</p> <p>The Sustainable Development Strategy contained a commitment to publish an implementation plan setting out how the Executive would achieve its strategic objectives. This Implementation Plan was published in April 2011 and allocates lead responsibility for the achievement of each of its 32 strategic objectives to the most appropriate Government Department.</p>	<p>The WR &amp; SR Plan must take account of the principles and priorities set out in the strategy. The SEA should ensure that sustainability objectives are considered when assessing the potential impacts of the WR &amp; SR Plan.</p>

## Appendix B. Scoping Consultation Responses

Scoping Stage Comments		
	Comment	Response
<b>Utility Regulator</b>		
1	General comments regarding clarifying the contextual information on the project and the plan.	Addressed
<b>Consumer Council</b>		
2	General comments regarding re-wording of sentences, clarifying the contextual information on the project and the plan.	Addressed
3	Changes made under the Water and Sewerage Services (Northern Ireland) Act 2016 replacing the 5 yearly planning period to a maximum period of six years.	Addressed.
4	Clarification on the reason for the split in WRZs needed - to better reflect existing connectivity and water resource allocation/operation.	Updated.
5	Clarification on what is meant by “more detailed studies of site specific impacts at project level” needed.	The SEA is a high level assessment of proposed plan. Options identified to be included in the plan will be subject to a more detailed assessment at the project design stage in line with planning and EIA requirements as relevant. Text within the report has been updated to make this clearer.
6	This version of the text clearly explains levels of service, but a line or two on the future process of setting levels of service would benefit understanding.	Comment on the level of service assumptions included in the WR&SR and Drought plan is provided in the SEA Report.
7	6.2 page 42 – Clarification is needed defining the role of steering groups and stakeholders throughout the SEA process.	Reflected in the reference to the stakeholders/steering group consultation in SEA report.
<b>Drinking Water Inspectorate</b>		
8	No further comment.	No action required.
<b>Department for Communities</b>		

Scoping Stage Comments		
9	Further evidence could be used/existing evidence revised in order to improve the accuracy of baseline assessment, to address gaps and to bring them up to date. Further evidence you need to incorporate includes Battle sites, Areas of Archaeological Potential, Shipwrecks.	Baseline evidence has been checked and verified as most recent and up to date available. The baseline information has been incorporated into the constraints mapping for the options assessment and includes Battle sites and Areas of Archaeological Potential - no off-shore options were considered. Simplified constraints maps are provided in the SEA report for each WRZ.
10	In relation to text on Resource Zones, HED would suggest that this needs to be redrafted to be more focused with a clearer recognition of some of the key assets in these areas, and particularly those that might be affected through any proposed works.	These key assets and similar have been taken into account in the SEA Report.
11	<p>We note the inclusion of the Giant's Causeway (4.10.2) but note that this has been given World Heritage status on grounds of its natural heritage significance, rather than cultural heritage – it might be more appropriate to include elsewhere in your document (geology).</p> <p>Scheduled historic monuments such as canals and navigation would be appropriate to mention in relation to some of the resource zones, as for example would be Lakeland heritage in Fermanagh, where there is an extensive number of crannogs. Similarly many bridges associated with Northern Ireland's waterways have listed status.</p>	Text updated.
12	We would advise that there is merit in giving some consideration to Cultural Heritage and Archaeology at Strategic, as well as Project level. It would be prudent to consider in particular impacts of works on scheduled monument areas – these can on occasion be extensive (eg. canals), and the requirement for scheduled monument consent for same (this is a separate permission from planning permission for which there is no presumption in favour of granting). Similarly any large scale works within ASAI's would merit early consideration so that appropriate evaluative mechanisms can be considered. - It might be important to consider some impacts on strategic level – i.e. issues in relation to the zones around scheduled monuments or major infrastructural works proposed in ASAI's.	Strategic level Areas of Scientific Archaeological Importance (ASAI's) and scheduled monuments are taken into account and potential impacts considered within the assessment.

Scoping Stage Comments		
13	<p>Further Plans Programmes and Policies:</p> <p>International and European:                      The European Convention on the Protection of the Archaeological Heritage (Valletta 1992)                      Convention for the Protection of the Architectural Heritage of Europe (Granada 1985)                      Council of Europe Framework Convention on the Value of Cultural Heritage for Society (Faro 2005)                      European Landscape Convention (Florence Convention)</p> <p>Regional:                      Although superseded by SPPS and eventually to be by local development plans HED recommend cognisance of explanatory text in PPS6 in relation to background to policies on Archaeology and the Built Heritage.</p> <p>Local:                      Conservation Management Plans for heritage assets such as HMS Caroline and Alexandra Dock, Dungannon Castle Hill, Londonderry Town Walls etc.                      Local Development Plans.</p>	<p>These plans, policies and programmes have been added to the assessment.</p>
14	<p>There are many other sites of heritage interest which are not/are not yet listed in our records. These include historic boundaries such as townland boundaries, surviving air raid shelters (these are reported to us from time to time) and some historic cemeteries, occasionally associated with former workhouse sites.</p>	<p>It is anticipated that at the project development and design stage, when more detailed project specific baseline information will be obtained informed by detailed desk based assessment, consultation and field surveys, and sites of importance as such will be taken into account at this stage.</p>
NIEA		
15	<p>We welcome that biodiversity, flora and fauna is scoped into the environmental report. However we are concerned that limiting the assessment to only designated sites will not consider the widespread cumulative effects that could occur on priority habitats and species.</p>	<p>Potential impacts on priority habitats and species are recognised in the assessment and will need to be considered further through detailed scheme assessment and mitigation and are also identified in the monitoring plan for the SEA.</p>



Scoping Stage Comments		
16	We welcome that soils are scoped in and would expect the assessment to include peat soils, their dissolved organic compounds and the effects of upland restoration on water quality and quantity.	Potential for upland restoration, the value of peat soils and benefits for water quality and quantity are recognised in the SEA recommendations and monitoring plan.
17	Under sustainability and water we would also expect discussion on the use of SuDS to reduce peak flows and improve water quality on a catchment wide basis and its promotion and long term management especially since the change in legislation this year.	We have noted the value of promoting SuDS in the SEA Report.
18	A recheck of the baseline information on flora and fauna should be undertaken.	Information updated.
19	On page 14 it makes reference to FFD directive and then again in the annex. FFD is now revoked and subsumed under WFD.	The WFD is referred to in the SEA report.
20	The scoping and Environmental Report must reference the latest WFD status assessments at the links provided.  <a href="https://www.daera-ni.gov.uk/sites/default/files/publications/doe/water-report-ni-wfd-statistics-october-2015.pdf">https://www.daera-ni.gov.uk/sites/default/files/publications/doe/water-report-ni-wfd-statistics-october-2015.pdf</a> <a href="https://www.daera-ni.gov.uk/sites/default/files/publications/doe/ni-environmental-statistics-report-2016.pdf">https://www.daera-ni.gov.uk/sites/default/files/publications/doe/ni-environmental-statistics-report-2016.pdf</a>	These are taken into account in the WFD assessment (Appendix E).
21	Impacts of water abstraction on Designated Groundwater Dependent Terrestrial Ecosystems are considered as part of WFD assessments. <a href="https://www.daera-ni.gov.uk/publications/water-dependent-features-natura-2000-sites-neagh-bann-river-basin-district-0">https://www.daera-ni.gov.uk/publications/water-dependent-features-natura-2000-sites-neagh-bann-river-basin-district-0</a> <a href="https://www.daera-ni.gov.uk/publications/water-dependent-features-natura-2000-sites-sacs-scis-and-spas-north-eastern-river-basin">https://www.daera-ni.gov.uk/publications/water-dependent-features-natura-2000-sites-sacs-scis-and-spas-north-eastern-river-basin</a> <a href="https://www.daera-ni.gov.uk/publications/water-dependent-features-natura-2000-sites-sacs-scis-and-spas-north-western-river-basin">https://www.daera-ni.gov.uk/publications/water-dependent-features-natura-2000-sites-sacs-scis-and-spas-north-western-river-basin</a>	These are taken into account in the HRA (Appendix D) and WFD assessment (Appendix E).
22	The scoping report does reference HMWB but it would be good to acknowledge that many of the reservoirs are HMWB's and therefore mitigation measures including sediment management will need to be considered along with water quantity and quality.	The WFD assessment takes account of relevant waterbodies affected by the plan, However options involving existing reservoirs are not included in the plan proposals. (Appendix E).
23	Page 20 refers to Marine Nature Reserves and Strangford Lough. The Marine Act (Northern Ireland) 2013 converted Strangford MNR into a Marine Conservation Zone. This became Northern Ireland's first Marine Conservation Zone but DAERA will be designating additional MCZs before the end of 2016."	Strangford MNR does not have the potential to be impacted by the options or preferred plan.

<b>Scoping Stage Comments</b>		
24	<p>Climate Change Page 12 - Table - PPP sources (Note examples to be developed further):</p> <p>Add; Paris Agreement 2015 and EU Energy &amp; Climate Framework. Replace; NI Climate Change Emissions Reduction 2011 with NI Mitigation Action Plan 16/17. Include : UK Climate Change Risk Assessment 2017</p>	Addressed.
25	Page 25 – Footnote is SNIFFER 2007. Would UKCP 09 not be more up to date on potential impacts for NI?	UKCP09 predictions are not broken down in as much detail or as specific detail, so for this reason have not been used (note in report text) although the general trends from UKCP09 are reflected in the report.
26	General comments regarding clarifying the contextual information on the project and baseline environment.	Addressed.
27	Appendix A, page 14: Northern Ireland Greenhouse Gas Emission Reduction 2011 should be replaced with NI mitigation action plan 16/17.	Addressed.
<b>DAERA Fisheries Inspectorate</b>		
28	<p>DAERA Fisheries Inspectorate have no issues or concerns to raise with the scoping report consultation at this stage, but this project may pose concerns in the future as we have a number of licensed aquaculture sites all over Northern Ireland. Our concerns would be in relation to the abstraction of water from lakes, rivers or streams where our aquaculture sites are operating. Please keep us on your consultation list as this project progresses. And as always we would like to remind the applicant that:</p> <p>It is an offence under Article 47 of the Fisheries Act (NI) 1966 to cause pollution which is subsequently shown to have a deleterious effect on fish stocks.</p>	Impacts from abstraction have been considered in the options assessment and also potential for pollution risk. Pollution mitigation has been detailed in the Environmental Monitoring Plan within the SEA Environmental Report.
<b>DAERA</b>		
29	Under the options being assessed within the plan NIEA suggest that NIW consider ‘ the modification to existing abstraction licenses’ adding conditions designed to maximise short term seasonal abstraction increases to support winter storage. Also for ‘best practice guidance on increasing attenuation and catchment storage within watersheds / catchments; the consultants working on the plan could look at the EU WEB site for Natural Water Retention Measures (NWRM’s) i.e. <a href="http://www.NWRM.eu">www.NWRM.eu</a>	This has informed the WFD Assessment and the SEA mitigation recommendations for the plan.

## Draft Water Resource & Supply Resilience Plan

<b>Scoping Stage Comments</b>		
30	With particular reference to the 'Biodiversity, Flora and Fauna' section to the SEA, the plan could become more targeted by focusing on those Natura 2000 protected terrestrial ecosystems which are dependent on water.	This has been covered within the SEA report in Section 3.5: Biodiversity, Flora and Fauna.
31	The plan could also benefit by highlighting the integrated Urban strategic work being planned with Government partners for Belfast where storm water management initiatives are underway.	Although this work does not directly affect any of the plan proposals it is recognised to be supportive to environmental quality. There are no conflicts with the plan and this strategic work.

## Appendix C. Habitats Regulation Assessment

### Executive Summary

Northern Ireland Water (NI Water) aims to have a secure, resilient water supply network that will provide protection against drought and emergency situations. This is achieved through an overarching Water Resource & Supply Resilience Plan (WR & SR Plan).

An initial wide range of 'unconstrained options' were identified for possible inclusion in the WR & SR Plan. These options were subject to an option screening process that identified a smaller set of 'constrained options' for further analysis and evaluation. These 'constrained options' were fully costed and further programme appraisal and consultation was undertaken to arrive at the preferred WR & SR Plan that is the subject of this report. A number of resilience options were also identified through a separate screening process for inclusion in the WR & SR Plan.

The WR & SR Plan identifies eight water resource management options, some of which will contribute in meeting the projected Supply Demand Balance over the WR & SR Plan period and some of which would contribute to a secure, resilient water supply network in the short, medium and long term. The WR & SR Plan also includes a Drought Plan which covers the drought management procedures that are to be implemented during periods of drought and determines the procedures to be implemented either to temporarily reduce demand or increase supply during droughts.

The WR & SR Plan contains eight options some of which have the potential to result in effects to internationally important nature conservation sites. Under the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995, a Habitats Regulations Assessment (HRA) of the WR & SR Plan is required where a plan or project may have a likely significant effect (LSE) on such sites.

Three water resource options and five resilience options comprising the WR & SR Plan and 13 internationally/European important nature conservation sites within the study area were subject to Stage 1 HRA screening. For four options, LSEs could be confidently discounted, as no, or only very weak source-receptor-pathways were identified. For the remaining four options, it was determined that standard mitigation (such as noise and vibration management plans, best practice pollution prevention control guidelines and timing restrictions) would be needed to discount LSE. These options could not be screened out from further assessment, in accordance with a decision reached by the Court of Justice of the European Union (CJEU) in *People Over Wind and Sweetman v Coillte Teoranta (C-323/17)* (the Sweetman judgment). These options within the WR & SR Plan were therefore identified as requiring Stage 2 Appropriate Assessment (AA).

HRA screening for the Drought Plan identified that although the risk of effects on international/European nature conservation sites would likely be low due to the general low probability, frequency and short duration of drought orders, there was uncertainty over the location, scope of the measures which potentially could include implementation of industry standard mitigation measures and the potential pathways to international/European sites and qualifying species. As a result, it was not possible to rule out LSE for all potential options. However, the Drought Plan provides an approach for the implementation of a range of measures depending on the drought situation. The Drought Plan implementation will involve undertaking environmental assessments including HRA on potential options for drought orders in advance of their requirement and this will clarify the details of option-specific mitigation or the use of alternative options from the range of available options, including for example bringing into use abandoned abstractions or development of new sources, to ensure that adverse effects on the integrity of international/European sites will be avoided.

# 1. Introduction and Background

## 1.1 Introduction

Water as a resource is often taken for granted. Urbanisation, population growth, increased living standards, growing competition for water and pollution put pressure on water resources. In Northern Ireland each average person uses around 150 litres of clean, treated water every day (Northern Ireland Water, 2018). Water is also important to many sectors of the economy and is used for growing crops, producing electricity and manufacturing goods. These activities rely on a balance between water supply (sources of water) and water demand (users of water). Many important habitats and species are dependent on water in the environment and can be affected by changes to water resources and quality due to resource use and also as a result of climate change affecting weather patterns.

Habitats and species of international and European importance are protected under Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora (hereafter referred to as the Habitats Directive) and Directive 2009/147/EC on the Conservation of Wild Birds (codified version of Directive 79/409/EEC as amended) (hereafter referred to as the Birds Directive). Ramsar sites have international legislative protection (which extends beyond Europe).

The requirements of the European directives and international convention are implemented through the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 and the Conservation of Habitats and Species Regulations 2010.

## 1.2 Northern Ireland Water (NI Water)

NI Water is the appointed statutory undertaker for the supply of water and sewerage services to the population of Northern Ireland. NI Water has dual status as a government-owned company and a non-departmental public body. It operates according to conditions outlined in its licence. It supplies around 560 million litres of clean water a day and provides sewerage services for approximately 780,000 domestic, agricultural and business customers throughout Northern Ireland, servicing almost 1.8 million people (Northern Ireland Water, undated).

## 1.3 Water Resource and Supply Resilience Plan and Drought Plan

### 1.3.1 Background

Jacobs was appointed to produce a Water Resource and Supply Resilience Plan (WR & SR Plan) (Jacobs, 2016) for NI Water. A WR & SR Plan sets out how the water company intends to maintain the balance between supply and demand for water over the long-term and the operational and management options and activities available to respond to short-term critical events such as droughts and freeze-thaw issues. The WR & SR Plan identifies eight resource and resilience options (hereafter referred to as the options) for the short, medium and long term to ensure a positive supply demand balance for all zones and provide a more resilient system to maintain a consistent level of supply across all zones. A Drought Plan is also included within the WR & SR Plan which identifies what supply side and demand side measures need to be implemented to maintain the water supply level of service at the target supply reliability of 97.5% (with water shortages permitted for 1 year in 40 on average). A description of the WR & SR Plan and the Drought Plan is given below.

**WR & SR Plan:** seeks to provide water to customers to maintain a defined a level of service and identifies the actions required to achieve this over the next 25 years while meeting wider objectives for resilience and sustainability.

**Drought Plan:** sets out the actions required to maintain water supplies to customers for the very rare events that are more severe than the level of service. The WR & SR Plan is based on the assets available to the company now and will be updated as changes to the infrastructure occur.

According to the Technical Guidance Water Resource & Supply Resilience Plan (Department of Regional Development, 2014), the WR & SR Plan should ensure that water resources are used in an efficient and sustainable manner over the long term, giving due consideration to short-term operational issues that may occur. Where a shortfall of supplies available to meet potential demands for water is identified, a set of options must be

identified to restore the balance between supplies and water demands. The supply demand balance underpinning the WR & SR Plan should take due account of:

- the aims and objectives of the Water Framework Directive (WFD) in promoting the sustainable and efficient use of water resources;
- future pressures on water resources from the effects of climate change on available resources and water use;
- what customers want and are prepared to pay for; and
- environmental considerations and constraints.

Development of the WR & SR Plan involved initial studies to review the Water Resource Zones identified in the NI Water Resource Management Plan (2012) which split Northern Ireland into seven Water Resource Zones (WRZs) and determines if they are robust. Work undertaken to date has reported that NI Water has made significant improvements in the resilience of the water infrastructure since the previous 2012 Water Resource Management Plan. The average volume of water needed in the supply system has reduced from around 735 mega litres per day (Ml/d) in 2001/2002 to 570 Ml/d in 2014/2015 (a 24% reduction) through sustained investment in water mains to reduce leakage, along with reduced demand particularly in the industrial sector. NI Water has also invested in upgrading its water mains infrastructure which allows it to transfer drinking water between towns and cities throughout Northern Ireland.

Consultation was undertaken on a draft version of this HRA and the outputs helped to inform the scope of the Final WR & SR Plan.

### 1.3.2 Option Development

#### 1.3.2.1 Unconstrained Options

The WR & SR Plan was developed through an iterative process taking cognisance of multiple criteria including feasibility, environmental considerations and cost. In the early stages of WR & SR Plan development, a series of workshops were held to identify a list of 'unconstrained options'. The unconstrained list included 53 options that could reduce the vulnerability of the water supply system and increase the resilience of the water assets, but before considering the practical and technical feasibility, cost or environmental constraints. These options were subject to an option screening process to produce a smaller set of 'constrained options' for further evaluation. Four criteria were used in this process: environmental impact; technical suitability; water availability/resilience; and promotability. The objective of screening the unconstrained options was to identify and exclude 'showstoppers' where there were unacceptable risks, based on a review of readily available information or knowledge of similar schemes. Options were screened out where constraints deemed that option to clearly not be feasible.

#### 1.3.2.2 'Constrained Options'.

The options that were not screened out, make up the 'constrained options'. The constrained list of options is set out in Table 1-1. The constrained options were taken forward for further appraisal and investigated in more detail and with reference to environmental assessments undertaken in line with the SEA process, as well as capital and operational expenditure, implementation periods and planning. A Least Cost Model and a Multi-Criteria Analysis were developed to assess the options further. The outputs define, in part, the final WR & SR Plan (see section 1.3.2.3).

**Table 1.1: Constrained Options List comprising the remaining feasible options carried through from the Unconstrained List for further assessment. The options which were not taken forward as preferred options are highlighted.**

Option Ref	Option Name	Outcome
1	Derg Bankside Storage	Not selected
2	Lough Neagh, New WTW and Trunk Main Transfer	Not selected
3	Rationalise small West WRZ sources and supply from increased Killyhevlin WTW	Not selected
4	New Groundwater Sources in Fermanagh	Not selected
5	Killyhevlin WTW to Lough Bradan Trunk Main	Not selected
6	Carmoney WTW to Strabane Trunk Main	Inclusion in final WR & SR Plan
7	Caugh Hill WTW to Strabane Trunk Main	Not selected
8	Castor Bay WTW to Ballydougan SR Trunk Mains Upgrade	Inclusion in final WR & SR Plan
9	Booster upgrade on Carland to Cookstown Trunk Main	Inclusion in final WR & SR Plan
10	Further Leakage Reductions	Not selected
11	HH water audits	Not selected
12	Targeted non-HH water audits (key accounts)	Not selected
13	Rainwater harvesting - external daily us	Not selected
14	Water efficient white goods discount vouchers	Not selected
15	Incentives for bathroom retrofit	Not selected
16	Improved specification of water fittings in new homes	Not selected
17	Schools water audit and retrofit	Not selected
18	Free water saving devices	Not selected
19	Hotel & Hospitals water audit and retro	Not selected
20	Hotel Water Audits and installation of water saving devices	Not selected
21	Collaborated water & energy efficient retrofit programme delivered by third parties	Not selected
22	Social housing refurbishment	Not selected
23	Farm Audits	Not selected

### 1.3.2.3 Resilience Options

NI Water's supply system can be vulnerable to particular events such as climatic events, outages and industrial action. All of these can compromise the security of supply for its customers. A number of potential resilience issues have been identified and options developed to address these issues.

Screening of resilience options was carried out in tandem with the WR & SR Plan development but underwent a different Screening process. Similar to the water resource options, the resilience options were assessed against SEA Objectives and E&S valuation was undertaken. Environmental impacts for the options were identified as either low or moderate risk. The resilience options considered are set out in Table 1-2.

**Table 1.2: Resilience Options Dossiers List. The Resilience Options not taken forward as preferred options are highlighted.**

Option Ref	Option Name	Outcome
1	Dorisland Resilience	Not selected
2	North East WRZ Resilience	Not selected
3	Lough Fea WTW & Moyola WTW Resilience	Inclusion in final WR & SR Plan
4	Ballinrees Resilience	Inclusion in final WR & SR Plan
5	Killyhevlin to Lough Bradan Resilience Trunk Main	Not selected
6	Upgrade Killyhevlin WTW	Inclusion in final WR & SR Plan
7	Killyhevlin to Belleek Trunk Main	Not selected
8	Cabragh SR to Glencuil SR Trunk Main	Not selected
9	Seagahan to Clay Lake Trunk Main	Inclusion in final WR & SR Plan
10	West WRZ Resilience, Trunk Main Upgrades and Links	Inclusion in final WR & SR Plan

### 1.3.3 WR & SR Plan Options

The unconstrained and constrained lists were refined following the processes described in section 1.3.2 to arrive at a preferred WR & SR Plan, described below.

The WR & SR Plan includes a variety of options (including pipelines, trunk mains (TMs), Water Treatment Works (WTW), pipeline upgrades, water storage reservoirs etc.) to reduce the vulnerability of NI Water's services and increase resilience of its water assets in order to continue to meet the projected demand for water as indicated above.

Options within the WR & SR Plan include demand management and water resource options. The demand management options involve options such as household or business audits and water conservation measures which were screened as not having any potential for significant effects on international nature conservation sites.

Ultimately, three water resource options were assessed as potential feasible options for meeting the supply demand deficit:

#### **Resource (Supply Demand Balance) Options:**

- Carmoney WTW to Strabane Trunk Main
- Castor Bay WTW to Ballydougan SR Trunk Mains Upgrade
- Booster Upgrade on Carland to Cookstown (increase transfer capacity with a booster upgrade consisting of a pump at Carland service reservoir and a pump near properties between Carland and Cookstown)



The HRA screening assessment of these options informed the SEA options assessment and the selection of options to be taken forward as part of the preferred WR & SR Plan.

Five resilience options were also identified to reduce the vulnerability of NI Water's services and increase resilience of its water assets in order to continue to meet the projected demand for water. These resilience options will be considered further during the WR & SR Plan period and some of these options may be taken forward for implementation. The resilience options comprised the following:

### **Resilience Options:**

- Lough Fea WTW & Moyola WTW Resilience Link
- Upgrade Killyhevlin WTW
- Seagahan to Clay Lake Transfer
- West WRZ Resilience, Trunk Main Upgrades and Links
- Ballinrees Resilience

### **1.3.4 Drought Plan Options**

Four broad types of measures are identified in the Drought Plan:

1. demand management actions e.g. hosepipe bans and customers being requested to use less water;
2. redistribution of water within the existing network e.g. rezoning of water;
3. increased abstractions but within existing licence conditions; and
4. abstractions outside of the licence (requiring drought orders) such as increase abstractions or reduce release of compensation flows from reservoirs into rivers.

The demand management and redistribution of water within the network measures were screened out as not having potential for significant adverse effects on international nature conservation sites. The use of increased abstraction within licence conditions was also considered to be covered through the existing licence provisions and the review of consent process and these measures were screened out of the Drought Plan HRA.

## **1.4 Legislative Requirements for Habitats Regulations Assessment (HRA)**

Habitats and species are protected under the European Commission Habitats Directive and Birds Directive. These apply to proposed plans or projects that may have a likely significant effect (LSE) on European sites, which include Special Areas of Conservation, (SACs) and Special Protection Areas (SPAs), within the Natura 2000 Network.

Article 6 of the Habitats Directive states:

*'Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives... competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the public'.*

Ramsar sites are wetland sites of international importance designated under the Ramsar Convention. These internationally important wetland sites such as estuaries, lakes and marshes, provide important waterfowl habitat.

The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 transposed the Habitats Directive into national law and came into force on 30 November 1995. The Regulations have been subsequently amended several times and the Conservation of Habitats and Species Regulations 2017 consolidate all the various amendments made to the 1995 Regulations in respect of Northern Ireland.

Habitats Regulations Assessment (HRA) is the process by which the requirements of these directives are practically implemented in order to ensure and demonstrate compliance. It appraises potential for plans or projects

to significantly affect European sites. In accordance with national planning policy and best practice guidelines, Ramsar sites are also assessed in this HRA.

This report has been prepared in accordance with the requirements of NI Water, as the competent authority, to undertake an HRA as set out in the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995. It considers the potential of the options within the WR & SR Plan and the Drought Plan to adversely affect internationally important nature conservation sites (European sites) either alone or in combination with other plans or projects.

The HRA process will be continued as the WR & SR Plan proposed scheme designs are developed and more detailed assessments under the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 will ultimately be carried out at a project level as and when appropriate using the results from the intervening screening documents.

### 1.5 The Potential Effects at the Plan / Strategy Level

The production of a plan itself does not adversely affect any European site. Neither does a plan usually authorise any project that could have such an effect. Most projects that may result from the provisions of a plan will require some form of consent or other authorisation; this is the case with WR & SR Plan. As such, each individual project contained within WR & SR Plan will be subject to the requirements of the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995.

Guidance from the European Commission (EC), the judgment of the European Court of Justice in the case of EC v the UK, case C – 6/04 and the opinion of the Advocate General in that case, are helpful in understanding how the EC believes plans could have a significant effect on a European site. Based on this guidance, a plan may affect a European site by:

- proposing or resulting in particular types of change that are inherently damaging;
- proposing or resulting in a magnitude of change that would be damaging because it would be so large;
- proposing or resulting in change in locations where the effects of change would be damaging;
- proposing or resulting in a magnitude of change that in the proposed location would be damaging;
- resulting in cumulative or combined effects that would be damaging, either from a programme of similar or different proposals within the WR & SR Plan itself, or a combination of such proposals in the WR & SR Plan and in other plans or projects;
- blocking options for future plans and proposals;
- providing the justification for damaging change; and
- failing to foresee damaging effects that would occur later in a programme.

### 1.6 Purpose of the Report

This HRA identifies the international/European sites that could potentially be affected by the options and assesses, as far as possible, those options that may result in LSE and therefore require an assessment of potential 'adverse effects' to site integrity.

## 2. Methodology

### 2.1 Introduction

HRA is a multi-stage process which first determines LSE and assesses the likelihood for an adverse effect on the integrity of a European site. This process is often referred to as AA; however, AA also forms one stage of the HRA (Stage 2) and is preceded by an initial ‘screening stage’ (Stage 1) that identifies LSE on European sites. The result of the screening stage ultimately then determines whether or not AA is needed. Table 2.1 below shows the overall HRA process.

Table 2.1: Stages in HRA (European Commission, 2001)

Stage	Task	Outcome
Stage 1	Screening	<i>“The process to identify the likely impacts of a project upon a European site, either alone or in combination with other plans and projects and consider whether the impacts are likely to be significant.”</i>
Stage 2	Appropriate Assessment	<i>“The consideration of the impacts on the integrity of the European site, either alone or in combination with other plans and projects, with regard to the site’s structure and function and its conservation objectives. Where there are adverse impacts, an assessment of mitigation options is carried out to determine adverse effect on the integrity of the site. If these mitigation options cannot avoid adverse effects, then development consent can only be given if Stages Three and Four are followed”.</i>
Stage 3	Assessment of alternative solutions	<i>“Examining alternative ways of achieving the objectives of the project to establish whether there are solutions that would avoid or have a lesser effect on European sites”.</i>
Stage 4	Imperative Reasons of Overriding Public Interest (IROPI)	<i>“This is the assessment where no alternative solution exists and where adverse effects remain. This stage aims to assess whether the development is necessary for IROPI and, if so, the potential compensatory measures that would be needed to maintain the integrity of the European site”.</i>

This report focuses on the screening stage or Stage 1 and considered the requirement for the Stage 2 AA.

The purpose of the screening stage of an HRA is to identify all aspects of a plan or project which would potentially have an effect on a European site, either alone or in combination with other aspects of the same plan or other plans or projects (Table 2.1). Where no effect is anticipated (usually because there are no ‘pathways’ between the plan or project and a European site, or because an effect is considered to be not significant) the plan or project can be eliminated from further consideration (European Commission, 2001).

Where it is not possible to rule out the risk of effects to a European site, the plan or project will be taken forward to the next stage of the HRA (Stage 2 AA).

Stage 2 considers the effect of the project or plan, either alone or in combination with other projects or plans, on the integrity of the European/Ramsar site, with respect to the site’s structure, function and its conservation objectives. Its objective is to assess if the integrity of the site will or will not be adversely affected.

### 2.2 Screening Steps

Individual options were subject to screening. This screening assessment involved identifying all elements of each option that had the potential (alone or in combination) to result in LSE to a European site. Source-receptor-pathways (e.g. via air, water, proximity etc.) for LSEs (e.g. pollution, siltation, noise) were identified, either directly or indirectly, to a European site.

Those options identified during the screening as having pathways to European sites were assessed to identify if the effect could be significant to the site.

The screening exercise applied the precautionary principle with all decision making being transparent and objective. Plans and projects were only screened out where it could be demonstrated with sufficient certainty that there would be no LSE on a European site. Where the potential to affect a European site was identified, high level information was provided in order to assist in conducting an AA of the option.

Where standard mitigation was required to discount LSE, such as habitat loss or large scale disturbance, an option was taken forward to Stage 2 (AA) in accordance with the decision reached by the Court of Justice of the European Union (CJEU) in *People Over Wind and Sweetman v Coillte Teoranta* (C-323/17) (see Section 2.6 below).

### 2.3 Identifying Potential Effects of the options and Geographical Scope

The guidance document '*Strategic Environmental Assessment and Habitats Regulations Assessment – Guidance for Water Resources Management Plans and Drought Plans*' (Baker et al., 2012) has been used when assessing whether would be likely to affect European sites.

The proposed Constrained and Resilience options could affect European sites as a result of construction or operational impacts. Such impacts associated with the proposed works could be direct (e.g. construction activity within a European site) or indirect (e.g. impacts to European sites downstream of an abstraction point) and result in LSEs to a European site.

Table 2.2 lists the main impacts that could arise as a result of option implementation, including construction and operational impacts. The table provides illustrative distances within which each effect can be experienced.

For this screening assessment, each option was assessed separately using the source-pathway-receptor model. All European sites were assessed to determine if they were within the Zone of Influence (Zoi) of the proposed project. This involved assessing the proposed works and the potential impacts that could result, the potential pathways to any European sites (e.g. rivers, air, groundwater) and the Qualifying Interests (QI) of the European sites.

Where the options involved groundwater or river abstraction, discharges (fluvial or coastal) or off-shore works, European sites located within the same sites or with other hydrological links were identified and considered in the screening assessment. In addition, general search areas were increased for the reasons listed below.

- Any SACs within 10 km of the proposed development were listed because 10 km is the maximum potential ranging distance of mobile QI species from SACs according to best scientific knowledge (specifically otter territories typically extend this far).
- Any SPAs within 20 km of the proposed development were listed because 20 km is the maximum ranging distance for SPA QI bird species from SPAs according to best scientific knowledge (specifically certain goose species may forage this far from core SPA wetlands).

### 2.4 Interpretation of a 'Likely Significant Effect' (LSE)

A likely effect is one that cannot be ruled out on the basis of objective information. The test is a 'likelihood' of effects rather than a 'certainty' of effects. In the Waddenzee case (case C-127/02) the European Court of Justice ruled that a project should be subject to AA "*if it cannot be excluded, on the basis of objective information, that it will have a significant effect on the site, either individually or in combination with other plans and projects*". This establishes that 'likely', in this context, should not simply be interpreted as 'probable' or 'more likely than not', but rather whether a significant effect can objectively be ruled out.

Where a project is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on the site. The assessment of that risk must be made in the light of the characteristics and specific environmental conditions of the site concerned. Thus, an effect that would undermine the conservation objectives would be a significant effect and the likelihood of it occurring is a case-by-case judgement, taking account of the precautionary principle and the local circumstances of the site.

## 2.5 Consideration of Likely Significant Effects In Combination

The requirement of the Habitats Directive is to undertake an AA of a plan if it would be likely to have a significant effect on a European site “*either individually or in combination with other plans or projects*”. The Directive recognises that in some cases, the effects of a plan on its own would be either unlikely or insignificant. Nevertheless, the Directive also recognises that those plans and projects which are unlikely to have a significant effect or effects alone may have a significant effect or effects in combination with each other or with other plans and projects. This could occur if, when their individual effects are added together, including how they come forward over time, the effects in-combination are likely to be significant.

## 2.6 Standard Mitigation Measures to Avoid Likely Significant Effects

Until recently, standard mitigation measures such as siltation/water pollution, noise and vibration, visual disturbance controls could be introduced during the screening stage by a plan-making body to remove the likelihood of significant effects. Thus, the aspects of the plan (or project) which could have caused such effects would no longer do so and would therefore not be subject to AA.

However, in April 2018, a decision was reached by the Court of Justice of the European Union (CJEU) in *People Over Wind and Sweetman v Coillte Teoranta (C-323/17)* (the Sweetman judgment) which stated that:

“... Article 6(3) of the Habitats Directive must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.”

To comply with the Sweetman judgment, where mitigation was considered necessary to avoid significant effects to European sites, the option was taken forward to Stage 2 (AA). Timing construction works to avoid sensitive periods of the year; restricted construction activity to habitats or areas that are not integral to the maintenance of a site’s favourable conservation status etc.) are considered to be mitigation measures that would trigger the need for Stage 2 AA.

As most of the options are not supported by detailed design proposals (e.g. final pipeline routes have not yet been confirmed, or construction techniques and timings have not been agreed), there are opportunities to ‘design out’ the potential for significant effects to European sites (e.g. changing a pipeline route so that it avoids a European site. A design change of this nature would be considered an inherent aspect of the work plan that would not necessarily trigger the need for Stage 2, AA.

Table 2.2 Potential Impacts of WR & SR Plan Options (Baker et al, 2012)

Broad categories of potential effects on European sites, with examples	Examples of operations responsible for effects ( <i>Distance assumptions shown in italics</i> )
<p><b>Physical loss</b></p> <ul style="list-style-type: none"> <li>- Destruction (including offsite effects, e.g. foraging habitat)</li> <li>- Smothering</li> </ul>	<p>Development of built infrastructure associated with scheme, e.g. pipelines, temporary weirs, access routes.</p> <p><i>Physical loss is only likely to be significant where the boundary of the scheme extends within the boundary of the European site, or within an offsite area of known foraging, roosting, breeding habitat (that supports species for which a European site is designated).</i></p>

Broad categories of potential effects on European sites, with examples	Examples of operations responsible for effects ( <i>Distance assumptions shown in italics</i> )
<p><b>Physical damage</b></p> <ul style="list-style-type: none"> <li>- Sedimentation/silting</li> <li>- Prevention of natural processes</li> <li>- Habitat degradation</li> <li>- Erosion</li> <li>- Trampling</li> <li>- Fragmentation</li> <li>- Severance/barrier effect</li> <li>- Edge effects</li> </ul>	<p>Development of built infrastructure associated with scheme, e.g. reservoir embankments, water treatment plant, pipelines, pumping stations.</p> <p>Recreation e.g. cycling, walking, horse-riding, water-sports associated with scheme benefits, e.g. reservoirs.</p> <p><i>Physical damage is only likely to be significant where the boundary of the scheme extends within or is directly adjacent to the boundary of the European site, or within/adjacent to an offsite area of known foraging, roosting, breeding habitat (that supports species for which a European site is designated).</i></p>
<p><b>Non-physical disturbance</b></p> <ul style="list-style-type: none"> <li>- Noise</li> <li>- Visual presence</li> <li>- Human presence</li> <li>- Light pollution</li> </ul>	<p>Noise from vehicular traffic during construction of scheme.</p> <ul style="list-style-type: none"> <li>• Noise from construction traffic is only likely to be significant where the transport route to and from the scheme is within 3-5 km of the boundary of the European site<sup>1</sup>.</li> </ul> <p>Plant and personnel involved in construction and operation of schemes e.g. for maintenance, plus non-operational activities such as recreation associated with scheme e.g. reservoirs.</p> <ul style="list-style-type: none"> <li>• These effects (noise, visual/human presence) are only likely to be significant where the boundary of the scheme extends within or is directly adjacent to the boundary of the European site, or within/adjacent to an offsite area of known foraging, roosting, breeding habitat (that supports species for which a European site is designated).</li> </ul> <p>Development of built infrastructure associated with scheme, which includes artificial lighting.</p> <p><i>Effects from light pollution are only likely to be significant where the boundary of the scheme is within 500 m of the boundary of the European site. From a review of Environment Agency internal guidance on HRA and various websites it is considered that effects of vibration and noise and light are more likely to be significant if development is within 500 m of a European site.</i></p>
<p><b>Water table/availability</b></p> <ul style="list-style-type: none"> <li>- Drying</li> <li>- Flooding/storm water</li> <li>- Changes to surface water levels and flows</li> <li>- Changes in groundwater levels and flows</li> <li>- Changes to coastal water movement</li> </ul>	<p>Changes to water levels and flows due to water abstraction, storage and drainage interception associated with inland schemes.</p> <p><i>These effects are only likely to be significant where the boundary of the scheme extends within the same ground or surface water catchment as the European site. However, these effects are dependent on hydrological continuity between the scheme and the European site and sometimes, whether the scheme is up or down stream from the European site.</i></p>

<sup>1</sup> A series of studies carried out in the Netherlands have shown that road noise levels above 42-43dB and 47dB results in a rapid fall in population of woodland and grassland breeding bird species, with disturbance distances varying between species from 20 to 1700 meters from the road (at 5000 cars a day) and up to 3.53 km at 50,000 cars a day. The most recent study is Reijnen et al. (1997).



Broad categories of potential effects on European sites, with examples	Examples of operations responsible for effects ( <i>Distance assumptions shown in italics</i> )
<p><b>Toxic contamination</b></p> <ul style="list-style-type: none"> <li>- Water pollution</li> <li>- Soil contamination</li> <li>- Air pollution</li> </ul>	<p>Air emissions associated with vehicular traffic during construction of schemes.</p> <ul style="list-style-type: none"> <li>• This effect is only likely to be significant where the transport route to and from the scheme is within 200 m of the boundary of the European site<sup>2</sup>.</li> </ul>
<p><b>Non-toxic contamination</b></p> <ul style="list-style-type: none"> <li>- Nutrient enrichment (e.g. of soils and water)</li> <li>- Algal blooms</li> <li>- Changes in salinity</li> <li>- Changes in thermal regime</li> <li>- Changes in turbidity</li> <li>- Changes in sedimentation/silting</li> <li>- Air pollution (dust)</li> </ul>	<p>Changes to water salinity, nutrient levels, turbidity, thermal regime due to water abstraction, storage, or inter-catchment transfers.</p> <ul style="list-style-type: none"> <li>• These effects are only likely to be significant where the boundary of the scheme extends within the same ground or surface water catchment as the European site. However, these effects are dependent on hydrological continuity between the scheme and the European site and sometimes, whether the scheme is up or down stream from the European site. This level of information is not available until data such as groundwater modelling is collected to accompany planning applications.</li> </ul> <p>Emissions of dust during earthworks, construction of plant and tunnel/pipeline construction associated with schemes.</p> <ul style="list-style-type: none"> <li>• This effect is only likely to be significant where the construction works for the scheme are within 500 m of the boundary of the European site<sup>3</sup>.</li> </ul>

<sup>2</sup> For deposition of air pollutants associated with construction transport for some of the schemes, the Highways Agency guideline measure of 200 m from a road has been applied with respect to the roads likely to be used. *Design Manual for Roads and Bridges (DMRB), Volume 11*. Highways Agency. 2003.

<sup>3</sup> This distance is based on information relating to dispersion of dust particles (in Appendix 1A of Annex 1 to the *Minerals Policy Statement 2: Controlling and Mitigating the Environmental Effects of Minerals Extraction in England*, ODPM, March 2005). Large dust particles (greater than 30 µm) will mostly deposit within 100 m of the source. Intermediate-sized particles (10–30 µm) are likely to travel up to 200–500 m. Smaller particles (less than 10 µm) may travel 1 km or more from their source. Large particles are associated with nuisance from deposition while smaller particles can have human health effects. It is assumed that dust deposition from a scheme could be significant up to 500 m from European site boundaries (an average distance has been assumed since the size of dust particles arising from schemes is unknown). However, this will also be dependent on the volume of dust produced from the scheme, the particle size and rate of deposition and coverage of the European site. The DMRB Volume 11, Part 1 Air Quality, Annex F notes that the most sensitive species at European sites appear to be affected by dust deposition at levels above 1000 mg/m<sup>2</sup>/day, which is five times greater than the level at which most dust deposition may start to cause a perceptible nuisance to humans. Most species appear to be unaffected until dust deposition rates are at levels considerably higher than this. Information from the Dibden Bay Container Terminal Public Inquiry indicated that vegetation soiling from dust from large construction sites operating for a year or more could occur at up to 100 m without mitigation and 25 m with mitigation (Technical Statement TS/AQ1, ABP, 2000).

### 3. European/International Sites Potentially Affected by the Options Proposed

This section lists the European/international sites considered in this report. Thirteen European/international sites were identified as requiring consideration in this assessment. Ramsar sites (international sites), in all cases were coincident with the European sites (SACs and SPAs). These sites are listed below in Table 3.1.

**Table 3.1 European/international sites considered by the screening assessment**

SACs	SPAs	Ramsar Sites
River Foyle and Tributaries	Lough Neagh and Lough Beg	Lough Neagh and Lough Beg
Tully Bog	Lough Foyle	Lough Foyle (includes the River Faughan and River Roe)
River Faughan and Tributaries		Fairy Water Bogs
River Roe and Tributaries		
Upper Ballinderry River		
Teal Lough		
Fairy Water Bogs		
Lough Nageage		

While conservation objectives are specific to each site, certain generic objectives tend to apply, including:

- maintaining the population of the habitat/species as a viable component of the site;
- maintaining the distribution of the habitat/species within the site;
- maintaining the distribution and extent of any supporting habitat;
- maintaining the structure, function and supporting processes of habitats supporting the species; and
- ensuring there is no significant disturbance of species for which a site has been designated.



## 4. Stage One: Screening

### 4.1 WR & SR Plan Introduction

This section describes the Stage 1 (screening) of the HRA and assesses the WR & SR Plan options detailed in Section 1.3 against the international/European sites identified above (Section 3).

The screening assessment covered:

- three water resource options (see Figure 1); and
- five resilience options (see Figure 2)<sup>45</sup>.

Assessment tables for the international/European sites can be found below (Table 4.1).

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<sup>4</sup> It should be noted that all pipeline routes are indicative and more detailed routing studies will be undertaken at the project stage.

<sup>5</sup> Some pipeline options will include pumping stations along the main.

Figure 4-1 Natura 2000 sites and Water Resource Zone Options

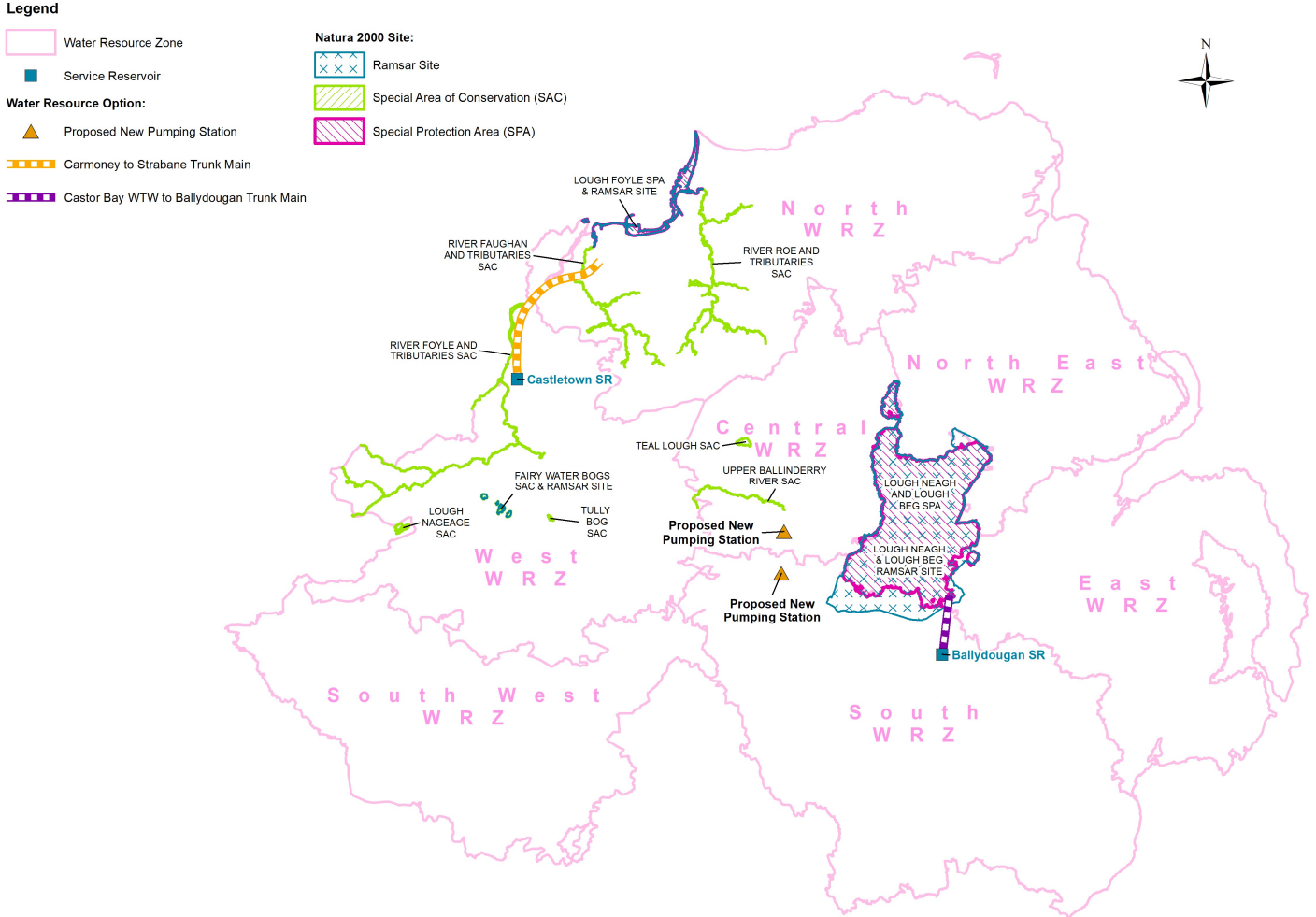
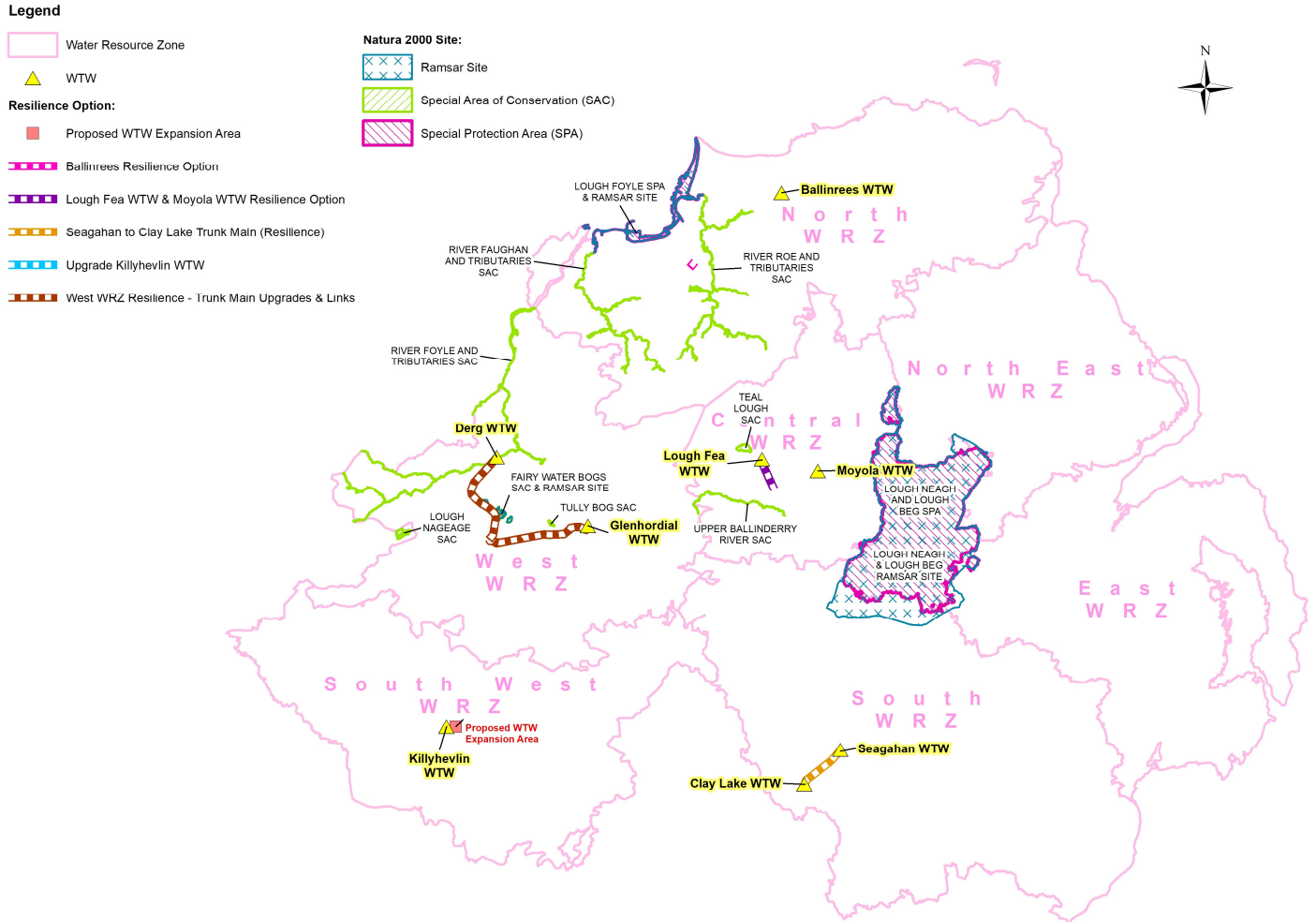


Figure 4-2 Natura 2000 sites and Resilience Options



### 4.2 WR & SR Plan Options Where No Likely Significant Effects are Predicted

For four options LSEs could be confidently excluded, as no, or very weak source-receptor-pathways were identified. The following options could therefore be screened out from further assessment:

- Lough Fea WTW & Moyola WTW Resilience Link
- Ballinrees Resilience
- Upgrade Killyhevlin WTW
- Seagahan to Clay Lake Transfer

Assessments for these options can be seen in Table 4.1.

### 4.3 WR & SR Plan Options Where Likely Significant Effects are Predicted

For the remaining four options, source-receptor-pathways were identified as it was determined that standard mitigation (such as noise and vibration management plans, best practice pollution prevention control guidelines, timing restrictions etc.), would be needed to discount LSE. These options could not be screened out from further assessment, in accordance with the Sweetman judgment. LSE were therefore identified for the following options (and the options therefore advanced to Stage 2 (AA)):

- Carmoney WTW to Strabane Trunk Main
- Castor Bay WTW to Ballydougan SR Trunk Mains Upgrade
- West WRZ Resilience, Trunk Main Upgrade and Links
- Booster Upgrade on Carland to Cookstown Trunk Main

The assessment for the options advanced to Stage 2 is provided in Table 4.2.

### 4.4 In combination Assessment

To comply with the Habitats Regulations, a HRA must assess whether a plan or project would be likely to have a significant effect on a European site 'either individually or in combination with other plans or projects.' This requirement mandates that consideration be given to instances where the effects of a plan or project would be either unlikely or insignificant when acting alone but may result in LSEs when acting in combination with the effects from other plans and projects.

This Screening study has therefore considered the potential for the project to have LSE on European sites in combination with other plans and projects. Where an effect presented no risk of LSEs acting alone, but potential LSEs could not be discounted for a combination of effects, the European site should be advanced to Stage 2 (AA) and the significance of the in-combination effects identified, assessed in detail. In-combination effects are those that may arise from the project in-combination with other plans and projects that are completed, as well as those proposed and consented, but not yet built and operational. Plans or projects that are proposed (but not yet approved) were also considered (EC, 2018).

A desk top review of the planning applications and any proposed developments with feasible spatial or temporal overlap with the proposed project was undertaken. This provided an indication of major infrastructure projects, current road schemes and projects requiring EIA that might have spatial or temporal overlap with the WR & SR Plan.

At this stage, no significant in combination effects were identified between the WR & SR Plan's resource and resilience options that might result in LSE to European sites through interaction with each other, or external plans and projects.

However, due to a lack of project-level information, including information on spatial location, detailed design and timescales, it is not possible to identify and assess every potential for 'in combination' effects at the plan

level. Project level HRA would be carried out at the planning stage which would consider stand-alone effects, cumulative effects and effects in combination with other relevant plans and projects. The general scope of issues for the consideration of in combination effects at project level, include temporary habitat loss and disturbance effects associated with construction and water quality issues.

### **4.5 WR & SR Plan Summary of HRA Screening**

As part of the assessment of potential options for consideration for the WR & SR Plan, all of the three water resource options considered were found likely to result in an LSE to an international/European site and needed to be taken forward to Stage 2 (AA). Of the five resilience options, one was identified as requiring Stage 2 assessment if taken forward in the WR & SR Plan. This was on the basis that standard mitigation measures were required to discount LSE and on the application of the Sweetman judgment. The other four resilience options were found to have no or only very weak pathways to a European site, so these options were screened out.

Table 4.1 Screening results of options included in the draft WR & SR Plan and screened out

Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
<b>Ballinrees Resilience</b>					
<b>Elements:</b> <ul style="list-style-type: none"> <li>• Pumps</li> <li>• Pipe</li> </ul>	<b>EU Site:</b> River Roe and Tributaries SAC  <b>Distance:</b> 2.3 km  <b>QIs:</b> <ul style="list-style-type: none"> <li>• Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</li> <li>• Atlantic salmon (<i>Salmo salar</i>)</li> <li>• Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation</li> </ul>	<b>All pathways</b>  The River Roe and Tributaries SAC is not hydrologically linked to the option. There is therefore no potential LSE as a result of pollution or siltation effects from construction works. As the SAC is 2.3 km from the proposed works no qualifying habitat will be lost and no qualifying species will be disturbed. As a result, no effects pathways and no LSEs are predicted.	No	No	<b>No potential LSE identified - this Option does not require Stage 2 HRA</b>
	<b>EU Site:</b> Lough Foyle Ramsar and SPA  <b>Distance:</b> 7.5 km  <b>QIs:</b> <ul style="list-style-type: none"> <li>• Bewick's Swan (<i>Cygnus columbianus bewickii</i>)</li> <li>• Whooper Swan (<i>Cygnus cygnus</i>)</li> <li>• Golden Plover (<i>Pluvialis apricaria</i>)</li> <li>• Bar-tailed Godwit (<i>Limosa lapponica</i>)</li> </ul>	<b>Water Quality</b>  The Lough Foyle SPA and Ramsar site lies 7.5 km downstream of the proposed pipeline. There is potential for changes in water quality downstream of the works to affect the supporting wetland habitat of the site. The 7.5 km river extent between the pipeline crossing and the SPA would provide significant dispersal and diffusion of any pollutants, which are likely to be small-scale for works (and plant requirements) of this nature. A significant, or pervasive pollution event, or the disturbance of contaminated land is not anticipated and further, works for option 6 upriver would be mitigated to avoid impacts to water	No	No	

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Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
	<ul style="list-style-type: none"> <li>• Assemblage species</li> <li>• Waterfowl assemblage</li> <li>• Supporting wetland habitat</li> </ul>	quality. The pathway to significant impacts on the SPA is therefore considered to be very weak.			
<b>Lough Fea WTW &amp; Moyola WTW Resilience</b>					
<b>Elements:</b> <ul style="list-style-type: none"> <li>• Pipes</li> <li>• Pump</li> </ul>	<b>EU Site:</b> Teal Lough SAC <b>Distance:</b> 2.8 km <b>QI:</b> Blanket Bog *	<b>All pathways</b> No potential LSEs from the construction of the proposed Lough Fea pipeline are anticipated for the Teal Lough SAC. Due to the physical separation of the Option from the site, the QI (blanket bog) will not be affected. There will be no habitat loss or changes in water quality as there are no pathways to the SAC from the proposed works. Teal Lough SAC is located 2.8 km from the proposed works and there are no hydrological connections between the European site and the Option. The QI habitat, blanket bog, will not be affected by the proposed construction works as there are no effects pathways. Therefore, no LSEs are predicted.	No	No	<b>No potential LSE identified - this Option does not require Stage 2 HRA</b>
	<b>EU Site:</b> Upper Ballinderry River SAC <b>Distance:</b> (2.9 km) <b>QIs:</b> <ul style="list-style-type: none"> <li>• Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i></li> </ul>	<b>Water quality</b> There is no potential for LSEs from the construction of this proposed option on the Upper Ballinderry River SAC. The site is 2.9 km away from the proposed development and the pipeline and associated new pump are not hydrologically connected to the SAC. Further the existing mains will be used. On this basis, no impact pathways exist to the 'water courses of plain to montane levels with the <i>Ranunculus</i>	No	No	

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Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
	<p>and <i>Callitricho-Batrachion</i> vegetation</p> <ul style="list-style-type: none"> <li>• Freshwater pearl mussel (<i>Margaritifera margaritifera</i>)</li> <li>• Otter (<i>Lutra lutra</i>)</li> </ul>	<p><i>fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation' or Freshwater pearl mussel features.</p> <p><b>Disturbance</b></p> <p>The area also supports a significant presence of otters. Otters are semi-aquatic and utilise aquatic environments for hunting and shelter on land for resting and breeding. Otter also roam over considerable distances, so it is feasible that an otter could enter the option's zone of influence during construction works and experience disturbance. While a theoretical effect pathway exists, it is considered to be a very weak one. Otter are far more likely to be utilising the river and its associated riverine flora and fauna and adjacent semi-natural vegetation and woodland almost 3km away. The risk of excluding otter from important habitat, or the option affecting significant numbers of otter is considered to be very low. On this basis, LSE is discounted.</p>	No	No	
<b>Upgrade Killyhevlin</b>					
<p><b>Elements:</b></p> <ul style="list-style-type: none"> <li>• Trunk main</li> <li>• Pump</li> </ul>	<p><b>EU Site:</b> Lough Nageage SAC</p> <p><b>Distance:</b> 4.5 km</p> <p><b>QIs:</b></p> <ul style="list-style-type: none"> <li>• White clawed crayfish (<i>Austropotamobius pallipes</i>)</li> </ul>	<p><b>All pathways</b></p> <p>Lough Nageage is situated upstream of the proposed works and will not be affected by the construction of the trunk main. The QI (white clawed crayfish) will not be impacted and the conservation objectives will not be affected. No LSEs are predicted.</p>	No	No	<b>No potential LSE identified - this Option does not require Stage 2 HRA</b>



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Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
<b>Seagahan to Clay Lake Trunk Main</b>					
<u>Elements:</u> <ul style="list-style-type: none"> <li>• Trunk Main</li> </ul>	None identified	<p><b>All pathways</b></p> <p>The closest site is 18 km from the option and no effects pathways could be determined. Therefore, no LSEs on any international/European site can be identified as a result of this option. No LSEs are predicted.</p>	No	No	<p><b>No potential LSE identified - this Option does not require Stage 2 HRA</b></p>

**Table 4.2 Screening results of options included in the draft WR & SR Plan and screened in**

Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
<b>Carmoney to Strabane Trunk Main</b>					

## Draft Water Resource & Supply Resilience Plan

Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
<p><b>Elements:</b></p> <ul style="list-style-type: none"> <li>• Trunk Mains</li> <li>• Pumps</li> </ul>	<p><b>EU Site:</b> River Faughan and Tributaries SAC</p> <p><b>Distance:</b> 0 m</p> <p><b>QIs:</b></p> <ul style="list-style-type: none"> <li>• Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles</li> <li>• Otter</li> <li>• Atlantic salmon</li> </ul>	<p><b>Habitat Loss</b></p> <p>Option 6 involves crossing the River Faughan and Tributaries SAC, designated for otter and Atlantic salmon. There is potential for a direct loss of supporting habitat, such as resting sites and spawning grounds under the option's footprint. In-river ground disturbance could act as a deterrent/barrier to migrating salmon, potentially fragmenting habitat by restricting access to upriver spawning grounds. If Horizontal Directional Drilling (HDD) is used, habitat loss will largely be avoided, except for the land required for the HDD compounds. The scale of land-take required would not be significant to otter at population level, unless important areas were lost. Therefore, surveys would be required to ensure compounds, trenching and work areas would not destroy habitat of value (e.g. holts). If HDD is not used, surveys would be required and in-river works would need to be subject to seasonal constraints to avoid impacts to the salmon run. Under both construction scenarios, mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	<p>Yes, in the absence of mitigation</p>	<p>No</p>	<p><b>Mitigation is required to discount LSE. Therefore, this Option requires Stage 2, AA</b></p>

## Draft Water Resource & Supply Resilience Plan

Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
		<p><b>Changes to Water Quality</b></p> <p>Construction activities could result in the discharge of pollutants and generate polluted storm water runoff that could affect surface water quality in the River Faughan. Salmon in particular require very good water quality, free of excessive sedimentation. As otter depend on the availability of prey (lamprey, salmon, trout and frogs) normally associated with high water quality, there is the potential for both direct and indirect effects to otters. If HDD is used to cross the river, impacts will be largely avoided. However, works adjacent to the river, would need to adhere to industry standard best practices to prevent pollution and sedimentation entering the river and avoid significant impacts to water quality. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	
		<p><b>Mortality</b></p> <p>There is a risk of species mortality through road traffic accidents and entrapment in pipes and pits etc. Mitigation is needed to discount LSE, including the placement of caps on pipes and pits, providing escape routes and requirements to check pipes/pits regularly. Also, pre-construction surveys to identify otter holts and avoid physical interactions with the species. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	

## Draft Water Resource & Supply Resilience Plan

Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
		<p><b>Disturbance</b></p> <p>Construction of the trunk main would generate noise and vibration in the riparian area. Otters are sensitive to noise and visual stimuli and could alter foraging behaviour to avoid habitat that is less appealing, through noise/lighting and human presence around watercourses. Noise can result in otter deserting an area. A loss of resting, foraging or breeding grounds could lead to reduced distribution, species fitness and breeding success. In-river works could also expose salmon to underwater noise and vibration, which could be very disruptive to salmon during sensitive life periods. If HDD is used, impacts will be largely avoided. However, basic mitigation measures, including pre-works survey and suitable exclusion zones where necessary around breeding holts, would need to be applied and developed where necessary to ensure the avoidance of disturbance to otters and their resting sites during river side works. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	
		<p><b>Invasive species</b></p> <p>A change in native vegetation along river banks brought about by the accidental introduction of an invasive species could result in habitat loss. An invasive Species Management Plan should be developed, outlining good biosecurity practice. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	

## Draft Water Resource & Supply Resilience Plan

Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
	<p><b>EU Site:</b> River Foyle and Tributaries SAC</p> <p><b>Distance:</b> 430 m</p> <p><b>QIs:</b></p> <ul style="list-style-type: none"> <li>• Atlantic salmon</li> <li>• Otter</li> <li>• Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation</li> </ul>	<p><b>Habitat Loss</b></p> <p>The trunk main is proposed to cross six tributaries upstream of the River Foyle and Tributaries SAC. If the construction method is HDD, potential habitat loss would be restricted to the land needed for the HDD compounds and work areas. Effects at population level from this scale of habitat loss would be unlikely, but basic surveys would be required to ensure compounds, trenching and construction does not destroy habitat of value (e.g. holts). In-river works would need to be scheduled to avoid the salmon run to avoid upriver disruption to the run. Consequently, mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	
		<p><b>Changes in Water Quality</b></p> <p>Construction activities upriver could result in discharge of pollutants and could generate polluted storm water runoff that could affect surface water quality. If HDD is used to cross the river, impacts will be largely avoided by vastly restricting the strength of the hydrological pathway to the three QIs downstream. Nonetheless, works adjacent to the river would need to adhere to best management practices to prevent pollution entering the river. Mitigation is required upriver to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	
		<p><b>Disturbance</b></p> <p>Construction of the trunk main would generate noise and vibration and visual stimuli in the riparian area and potentially, within the river</p>	Yes, in the absence of mitigation	No	

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		<p>environment. Habitat fragmentation is a risk if foraging access to the other tributaries is prevented. The in-river works upstream could also expose salmon to underwater noise and vibration, which could be very disruptive to salmon during sensitive life periods. In light of the strong pathways to disturbance impacts on the salmon and otter features of this site, basic mitigation measures, including pre-works survey and suitable exclusion zones where necessary around breeding holts, would need to be applied and developed where necessary to ensure the avoidance of disturbance to critical habitat. Even for trenchless/HDD construction, impacts to otter could occur in close proximity to HDD drilling compounds, bore sites or busy work areas. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>			
	<p><b>EU Site:</b> Lough Foyle SPA and Ramsar</p> <p><b>Distance:</b> 2.5-4.2 km from the proposed Avish Hill pumps and 9.5 km downstream from the pipeline river crossing.</p> <p><b>QIs: (wintering)</b></p> <ul style="list-style-type: none"> <li>• Bewick's swan</li> <li>• Whooper swan</li> <li>• Golden plover</li> </ul>	<p><b>Disturbance</b></p> <p>The Avish Hill pumps are proposed to be constructed 2.5 km from this SPA, designated for over-wintering birds. A theoretical pathway to effects does exist where birds foraging outside the SPA could encounter the works. The risk of significant, population level impacts is very low. Firstly, exposure would be minimal; the SPA's wading birds are more likely to be focused on the extensive intertidal mud-flats and sand-flats saltmarsh that the site is designated for. The number of foraging birds that might enter the project's Zol would be small and secondly, the implications would be minimal, as the project area is easily avoided by a slight behavioural response. The works would not</p>	No	No	

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	<ul style="list-style-type: none"> <li>• Bar-tailed godwit</li> <li>• Light-bellied brent goose (<i>Branta bernicla hrota</i>)</li> <li>• Assemblage species</li> </ul>	<p>exclude the SPA birds from important areas of habitat and wouldn't intrude upon the SPA at all. No LSE anticipated.</p>			
		<p><b>Changes in Water Quality</b></p> <p>The pipeline will cross the River Faughan 9.5 km upstream of the SPA. An effect pathway exists via the hydrological connection of the river with the SPA. The habitats and dependent species of the SPA are vulnerable to pollution and contaminated water. The 9.5 km river extent between the sites would provide significant dispersal and diffusion of any pollutants, which are likely to be small-scale for works (and plant requirements) of this nature. A significant, or pervasive pollution event, or the disturbance of contaminated land is not anticipated and further, works for option 6 upriver would be mitigated to avoid impacts to water quality. The pathway to significant impacts on the SPA is therefore considered to be very weak.</p>	No	No	
		<p><b>Habitat Loss</b></p> <p>There is potential for inland foraging habitat of qualifying species such as brent geese and whooper swans to be lost under the footprint of the proposed Avish Hill pumps. However, the small area and extent of habitat lost comparative to the vast availability of habitat available within the SPA is not likely to significantly affect the qualifying species. No LSE anticipated.</p>	No	No	
<p><b>West WRZ Resilience Trunk Main Upgrades and Links</b></p>					

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Option Elements	European site, Distance from option, qualifying interest(s) (QIs)	Potential for effects on qualifying interests	Effect from option alone?	Effect in combination with other Plans/ Projects?	Is option likely to have a significant effect on European site(s)?
<p><b>Elements:</b></p> <ul style="list-style-type: none"> <li>• Ring connection</li> <li>• New Trunk Main</li> <li>• Upgraded Trunk Main</li> <li>• Pumps (x2)</li> </ul>	<p><b>EU Site:</b> River Foyle and Tributaries SAC</p> <p><b>Distance:</b> 0 m</p> <p><b>QIs:</b></p> <ul style="list-style-type: none"> <li>• Atlantic salmon</li> <li>• Otter</li> </ul> <p>Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation</p>	<p><b>Habitat Loss</b></p> <p>There is potential for direct loss of supporting habitat, such as resting sites and spawning grounds during upgrades to the existing trunk main and if the pipeline crosses the river directly. This would represent a temporary loss of habitat to accommodate the works (with subsequent recovery), but effects could be significant if valuable habitat was disturbed (e.g. otter holts or spawning gravels). In-river ground disturbance could also act as a deterrent/barrier to migrating salmon and restrict access to upriver spawning grounds. If HDD is used, this would avoid some physical disturbance effects; habitat loss would be limited to the land required for the HDD compounds and the work areas. This is likely not to represent a significant loss <i>unless</i> important habitat is lost. Therefore, basic surveys would be required to ensure compounds, trenching and construction does not destroy habitat of value. Any drilling within the SAC or close to the river should be supervised by an ecologist following surveys. Any in-river works would be subject to seasonal constraints to avoid the salmon run. Under both scenarios, mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p> <p><b>Water quality</b></p> <p>This SAC contains aquatic species that are susceptible to pollutants or sediment laden runoff that could be generated from construction works on the river bank, or within the river. If HDD is used to cross the river, impacts will be largely avoided. However, works adjacent to the river, would need to adhere to best management practices to prevent</p>	<p>Yes, in the absence of mitigation</p> <p>Yes, in the absence of mitigation</p>	<p>No</p> <p>No</p>	<p><b>Mitigation is required to discount LSE. Therefore, this Option requires Stage 2, AA</b></p>



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		<p>pollution and sedimentation entering the river and avoid significant impacts to surface water quality. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>			
		<p><b>Disturbance</b></p> <p>There is potential for disturbance to QI species during the upgrade works of the existing trunk main. A construction noise and vibration management plan would be required to discount LSEs from disturbance to the SAC features.</p> <p>Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	
		<p><b>Invasive species</b></p> <p>For works within an SAC, an Invasive Species Management Strategy should be put in place to prevent, reduce, control the effects of invasive species. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	
	<p><b>EU Site:</b> Fairy Water Bogs SAC and Ramsar site</p> <p><b>Distance:</b> 50 m</p> <p><b>QIs:</b></p> <p>Active raised bogs *</p>	<p><b>All pathways</b></p> <p>Provided the trunk main will be constructed within the existing road, there will be no LSEs to the SAC or Ramsar site. No LSEs are predicted.</p>	No	No	

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	<p><b>EU Site:</b> Tully Bog SAC</p> <p><b>Distance:</b> 1.3 km</p> <p><b>QIs:</b> Active raised bogs*</p>	<p><b>All pathways</b></p> <p>There will be no effects on the Tully Bogs SAC. There is no source-receptor-pathway for this site, therefore the qualifying habitat will not be affected. No LSEs are predicted.</p>	No	No	
<b>Castor Bay WTW to Ballydougan SR Trunk Mains Upgrade</b>					
<p><b>Elements:</b></p> <ul style="list-style-type: none"> <li>• Trunk main</li> </ul>	<p><b>EU Site:</b> Lough Neagh and Lough Beg SPA and Ramsar</p> <p><b>Distance:</b> 45 m</p> <p><b>QIs:</b></p> <p><b>Breeding</b></p> <ul style="list-style-type: none"> <li>• Bewick's Swan</li> <li>• Golden Plover</li> <li>• Whooper Swan</li> <li>• Black-headed Gull (<i>Larus ridibundus</i>)</li> <li>• Great Crested Grebe (<i>Podiceps cristatus</i>) (also on passage)</li> <li>• Seabird assemblage</li> </ul> <p><b>Wintering</b></p> <ul style="list-style-type: none"> <li>• Goldeneye (<i>Bucephala clangula</i>)</li> <li>• Great Crested Grebe</li> <li>• Pochard (<i>Aythya farina</i>)</li> </ul>	<p><b>Disturbance</b></p> <p>There is potential for construction works (noise and vibration, lighting, movement) of the new trunk mains to cause disturbance to the qualifying species.</p> <p><b>Breeding birds:</b></p> <ul style="list-style-type: none"> <li>• Common tern breed on islands on Lough Neagh and great crested grebe nest in reed beds in the lake. There will be no significant disturbance to the breeding common tern due to the current available information regarding location of this species on Lough Neagh.</li> <li>• The significance of the disturbance effect to the breeding great crested grebe will be determined following breeding bird surveys at project level. In the absence of information on the location of great crested grebe nest sites along the lake shore, a precautionary approach should be adopted. Staged construction could be undertaken to avoid disturbance to both QI species. The northern section of the pipeline near the lake shore will be constructed outside of the breeding season of great crested grebe (April to</li> </ul>	Yes, in the absence of mitigation	No	<p><b>Mitigation is required to discount LSE. Therefore, this Option requires Stage 2, AA</b></p>

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	<ul style="list-style-type: none"> <li>• Scaup (<i>Aythya marila</i>)</li> <li>• Tufted Duck (<i>Aythya fuligula</i>)</li> <li>• Waterfowl assemblage</li> <li>• Supporting wetland habitat.</li> </ul>	<p>October). The southern section of the pipeline will be constructed outside the wintering season of wintering birds (September to March). The pipeline will be constructed to consider all temporal and spatial sensitivities.</p> <p><b>Wintering birds:</b></p> <ul style="list-style-type: none"> <li>• Construction activities (noise and vibration, lighting, movement) have the potential to result in disturbance to wintering birds such as whooper swan, Bewick's swan, greylag geese and waders may forage in the agricultural grassland near the proposed works. Construction noise and vibration management plan will be implemented to mitigate against these effects. Screens will also be used to limit disturbance. However, provided the works are undertaken during April-October, the wintering QIs will not be affected by disturbance.</li> </ul> <p>Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p> <p><b>Habitat Loss</b></p> <p><b>Breeding birds:</b></p> <ul style="list-style-type: none"> <li>• Habitats important to breeding great-crested grebe and common tern will not be affected. Common tern breed on islands within Lough Neagh and great crested grebe breed in reed beds within or along the margins of the lake. The proposed pipeline will be constructed within the field on the shores of the lake. Therefore, no habitat loss (or LSE) is predicted.</li> </ul> <p><b>Wintering birds:</b></p>			
			No	No	

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		<ul style="list-style-type: none"> <li>There is potential for a loss of supporting habitat for wintering birds (agricultural grassland) to accommodate the trunk main and works areas. This would represent a temporary loss of habitat (with subsequent recovery). Effects could be significant if large areas of valuable or rare habitat was lost. This is not anticipated. Given the vast availability of similar habitat within the hinterland, this minimal predicted loss would not be problematic in terms of habitat availability. No LSE anticipated.</li> </ul>	No	No	
		<p><b>Water Quality</b></p> <p>Best practice methods including pollution prevention guidelines during construction will be implemented to mitigate against changes to water quality.</p>	Yes, in the absence of mitigation	No	
<b>Booster upgrade on Carland to Cookstown Trunk Main</b>					
<p><b>Elements:</b></p> <ul style="list-style-type: none"> <li>Increase the transfer capacity through the addition of booster pumps</li> <li>Addition of booster pumps</li> </ul>	<p><b>EU Site:</b> Upper Ballinderry River SAC</p> <p><b>Distance:</b> 80m</p> <p><b>QIs:</b></p> <ul style="list-style-type: none"> <li>Otter</li> <li>Freshwater pearl mussel</li> <li>Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i></li> </ul>	<p><b>Habitat loss</b></p> <p>Works near the water body, such as clearing areas of scrub or tall vegetation to facilitate new pipeline or work areas could result in the loss of otter habitat. This could impair their ability to survive, breed, reproduce. Depending on the nature and scale of works near the river, survey reports and mitigation plans would probably be required to discount LSE. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	<p><b>Mitigation is required to discount LSE. Therefore, this Option requires Stage 2, AA</b></p>

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	<p><i>and Callitriche-Batrachion</i> vegetation</p>	<p><b>Water quality</b></p> <p>At the northern Cookstown end of the transfer, the connection is made at Sandholes Road (UKWP, 2016). The existing pump station on Sandholes Road is located just c.18 m south of the Upper Ballinderry River SAC, which is designated for aquatic habitats and species that are sensitive to pollutants and sedimentation. In the absence of mitigation, construction activities (laying new pipeline) could result in the discharge of pollutants and generate polluted storm water runoff that could affect surface water quality in the river. Freshwater pearl mussel in particular is very sensitive to increased sediment loading and pollution. Both pearl mussel and water courses with vegetation features are in 'Unfavourable condition' (2016/ 2017) due to water quality issues (including silt, water pollution (direct or diffuse) (Reid et al., 2011). Works adjacent to the river would need to adhere to best management practices to prevent pollution and sediment entering the river. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p> <p><b>Fluvial dynamics</b></p> <p>Water courses with vegetation are vulnerable to changes in fluvial dynamics that can be caused by abstractions. The increase in transfer capacity (facilitated by booster pumps) could be associated with increased abstraction from a site within the SAC and this could impact fluvial dynamics in the river. Pearl mussels could be impacted if sections of the river bed dried out, or reduced flows lead to reduced water quality. Significant impacts are not considered likely as the</p>	<p>Yes, in the absence of mitigation</p> <p>No</p>	<p>No</p> <p>No</p>	

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		transfer is supplied from Lough Neagh, 15 km to the east and baseline supply demand balance has informed a level of surplus in the Water Resource Zone. Changes in fluvial dynamics would be local to the abstraction point. No LSEs are predicted.			
		<p><b>Invasive species</b></p> <p>The invasive giant hogweed (<i>Heracleum mantegazzianum</i>) is present along the riverbanks in the lower reach of the river, close to Cookstown (DARDNI, 2009). An Invasive Species Management Strategy should therefore be put in place to prevent, reduce, control the effects of invasive species. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	
		<p><b>Disturbance</b></p> <p>Construction works could also cause indirect impacts (through disturbance) to foraging otter and any otter breeding sites close by. A construction noise and vibration management plan would be required to discount LSEs from disturbance, including surveys to show whether otters are present in the area. Mitigation is required to discount LSE and the requirement for Stage 2 is triggered.</p>	Yes, in the absence of mitigation	No	
	<p><b>EU Site:</b> Lough Neagh and Lough Beg SPA and Ramsar</p> <p><b>Distance:</b> 12.5km</p>	<p><b>Disturbance</b></p> <p>For the extent of the route, this SPA would be approximately 15km away from construction works and 12.5km at the closest point (south of the route at Carland. The SPA is designated for both breeding and</p>	No	No	

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	<p><b>QIs:</b></p> <p><b>Breeding</b></p> <ul style="list-style-type: none"> <li>• Bewick's Swan</li> <li>• Golden Plover</li> <li>• Whooper Swan</li> <li>• Black-headed Gull</li> <li>• Great Crested Grebe</li> <li>• Seabird assemblage</li> </ul> <p><b>Wintering</b></p> <ul style="list-style-type: none"> <li>• Goldeneye</li> <li>• Great Crested Grebe</li> <li>• Pochard</li> <li>• Scaup</li> <li>• Tufted Duck</li> <li>• Waterfowl assemblage</li> </ul>	<p>over-wintering birds. A theoretical pathway to effects does exist where birds foraging outside the SPA could encounter construction works. The risk of significant, population level impacts due to disturbance is very low. Firstly, exposure would be minimal; birds from the SPA are more likely to be focused on the extensive intertidal mud-flats and sand-flats saltmarsh that the site is designated for or foraging close to nesting sites. The number of foraging birds that might enter the project's Zol would be small and secondly, the implications would be minimal, as the project area is easily avoided by a slight behavioural response. The works would not exclude the SPA birds from important areas of habitat and wouldn't intrude upon the SPA at all. No LSE anticipated.</p>			

## 5. HRA Stage 1: Screening of the Drought Plan

NI Water's Drought Plan sets out the actions required to maintain water supplies to customers for the very rare events that are more severe than the level of service. The Drought Plan is based on the assets available to the company now and will be updated as changes to the infrastructure occur. Detailed information on the Drought Plan can be found in Section 5 of the SEA.

### 5.1 Approach to HRA Screening

The aim of HRA screening is to establish whether implementation of the drought options included in NI Water's Drought Plan (either alone or in combination) are likely to have a significant effect on a European site(s).

Drought Plan options include continued utilisation of existing licensed water sources within NI Water's resource base (referred to as supply side options), demand side options (e.g. water use restrictions) and drought permits/orders.

The approach adopted in this HRA comprises the assessment of the likelihood of potential for significant effects of drought options. European/International site integrity is considered for inclusion in the Drought Plan.

The HRA has been undertaken in accordance with currently available guidance and is based on a precautionary approach as required under the Habitats Regulations.

#### 5.1.1 Identification of European Sites for Assessment

GIS data was used to map the locations and boundaries of international/European sites within or adjacent to NI Water's Water Resource Zones. The attributes of international/European sites, were considered with reference to Standard Data Forms for SACs and SPAs and Information Sheets for Ramsar sites. An analysis of these information sources enabled the identification of relevant qualifying species and conservation objectives. This information also allows identification of those features of each site which determine site integrity and the specific sensitivities of the site, as well as an analysis of how potential impacts of the drought options may affect site integrity.

The locations of potential supply side and drought permit/order options for the Drought Plan were mapped to establish their geographic proximity to the European sites. However, it was noted that there was potential for disused sites to be brought in and for new sites to be considered also and location specific information was not available.

### 5.2 Drought Measures

The types of measures in the Drought Plan include the following:

1. demand management actions - involving water efficiency measures;
2. network rezoning actions - involving moving water within the existing network;
3. supply side drought options - involving temporary increase in abstraction within existing licence conditions or bringing back into use of disused but licenced abstractions; and
4. drought order options - where abstraction may be temporarily increased outside licence conditions or compensation flows reduced.

Type 1 and 2 measures will not be included in this assessment and have been screened out as no LSE on international/European sites can result from these demand management and rezoning actions. Demand management measures include restrictions on consumer use and hosepipe bans and as such, are not anticipated to have impacts on European designated sites. Rezoning of water supplies within an existing network will also not have a negative effect on international/European sites.

Type 3 measures would be within existing consent conditions and can be assumed to be acceptable in terms of impacts on international/European sites. A formal review of consents process would be required to determine if



any of these existing consents could have significant adverse effects on international/European sites and is therefore outside the scope of this assessment.

This HRA therefore only considers the Type 4 Drought Order measures proposed within the Drought Plan. These measures can involve increase in supply through abstraction and/or the reduction in compensation flow downstream of the source. The main types of sources identified in the Drought Plan are outlined below.

### 5.2.1 Recommissioning disused sources

The Drought Plan did not identify the need to reintroduce any disused sources based on the historic drought record however it identifies the approach for identifying options to address a situation worse than the historic record.

These options for consideration would include existing water sources in Northern Ireland which have been mothballed or decommissioned in recent years. The reasons for closure, likely asset condition and the status of legal permissions to operate the sites, all have a bearing on the viability of these sites. Those sources that were closed due to issues with maintaining yield are unlikely to be worth pursuing further, but those closed for efficiency reasons could be reintroduced to make some contribution to the drought situation. Those sites that have suffered water quality problems may be viable if temporary package treatment plants can be added to the site.

The legal status of sources will dictate how they can be reintroduced. Those without abstraction licences will require a drought order to permit abstraction. Prior to the application for a drought order, significant design and construction work may be required to make the source operational and the lead in period for bringing the option in and undertaking the necessary assessment would need to be considered in advance.

Viable sites for new sources need not be restricted to old NI Water sites. There may be legacy industrial sites for river or groundwater abstractions which could be utilised, although significant temporary works are likely to be required.

### 5.2.2 Drought orders for existing sources

Drought order options for existing sources are generally a preferable option for additional supplies during severe drought periods although environmental impacts may be greater than moving to new sources. They are also likely to have some history of drought operation which may be used to assess the impacts of future operation.

Drought orders should also be considered for modifications to discharges, where relaxing dilution constraints on sewage treatment works would allow additional abstraction to be made upstream.

No Environmental Assessment Reports have been prepared for any potential drought order measures.

As identified above, the Drought Plan presented within the WR & SR Plan sets out general principles on how the different types of measures would be applied depending on the level of drought and in requirements of different areas. There is uncertainty over the specific options that would be taken forward and what the options would involve in terms of duration and timing. The uncertainty over specific actions therefore limits the HRA that can be completed at this stage.

## 5.3 Potential Impacts of Drought Options

The qualifying habitats and species of international/European sites can be vulnerable to a wide range of impacts such as physical loss or damage of habitat, disturbance from noise, light, human presence, changes in hydrology (e.g. changes in water levels/flow, flooding), changes in water or air quality and biological disturbance (e.g. direct mortality, introduction of disease or non-native species). However, the measures considered for inclusion in the Drought Plan only have the potential to give rise to some of these impacts and in general the main concerns are likely to be those related to changes in hydrology and water quality where existing infrastructure is used. However, construction impacts and risks would also need to be considered for any new or upgraded infrastructure.

In determining the likelihood of significant effects on European sites from the Type 4 Drought Plan measures, particular consideration has been given to the possible source-receptor pathways through which effects may be transmitted to features contributing to the integrity of the European site(s) (e.g. groundwater or surface water

catchments, air etc.). The measures are most likely to use existing infrastructure but involve changes to the level of abstraction or discharge of compensation flows from reservoirs into rivers, although for some options construction work could be required. Table 5.1 identifies the range of types of impacts that Drought Plan measures could have on European site qualifying features.

**Table 5.1: Potential Impacts on European Sites**

Broad categories of potential impacts on European sites, with examples	Examples of operations responsible for impacts (Distance assumptions shown in <i>italics</i> )
<p><b>Physical loss</b></p> <ul style="list-style-type: none"> <li>• Removal (including offsite effects, e.g. foraging habitat)</li> <li>• Smothering</li> </ul>	<p>Development of built infrastructure associated with scheme, e.g. pipelines, transport infrastructure, temporary weirs.</p> <p><i>Physical loss is only likely to be significant where the boundary of the scheme extends within the boundary of the European site, or within an offsite area of known foraging, roosting, breeding habitat (that supports species for which a European site is designated).</i></p>
<p><b>Physical damage</b></p> <ul style="list-style-type: none"> <li>• Sedimentation/silting</li> <li>• Prevention of natural processes</li> <li>• Habitat degradation</li> <li>• Erosion</li> <li>• Fragmentation</li> <li>• Severance/barrier effect</li> <li>• Edge effects</li> </ul>	<p>Development of built infrastructure associated with scheme, e.g. temporary weirs.</p> <p><i>Physical damage is only likely to be significant where the boundary of the scheme extends within or is directly adjacent to the boundary of the European site, or within/adjacent to an offsite area of known foraging, roosting, breeding habitat (that supports species for which a European site is designated).</i></p>
<p><b>Non-physical disturbance</b></p> <ul style="list-style-type: none"> <li>• Noise</li> <li>• Visual presence</li> <li>• Human presence</li> <li>• Light pollution</li> </ul>	<p>Noise from vehicular traffic during construction of scheme.</p> <p><i>Noise from construction traffic is only likely to be significant where the transport route to and from the scheme is within 3-5 km of the boundary of the European site.</i></p> <p>Plant and personnel involved in construction and operation of schemes e.g. for maintenance, plus non-operational activities such as recreation associated with scheme e.g. reservoirs.</p> <p><i>These effects (noise, visual/human presence) are only likely to be significant where the boundary of the scheme extends within or is directly adjacent to the boundary of the European site, or within/adjacent to an offsite area of known foraging, roosting, breeding habitat (that supports species for which a European site is designated).</i></p> <p>Development of built infrastructure associated with scheme, which includes artificial lighting.</p> <p><i>Effects from light pollution are only likely to be significant where the boundary of the scheme is within 500 m of the boundary of the European site. From a review of Environment Agency internal guidance on HRA and various websites it is considered that effects of vibration and noise and light are more likely to be significant if development is within 500 metres of a European site.</i></p>
<p><b>Water table/availability</b></p> <ul style="list-style-type: none"> <li>• Drying, flooding/stormwater</li> <li>• Changes to surface water levels and flows</li> </ul>	<p>Changes to water levels and flows due to water abstraction and storage.</p> <p><i>These effects are only likely to be significant where the boundary of the scheme extends within the same ground or surface water catchment as the European site. However, these effects are dependent on hydrological continuity between the scheme and the European site and sometimes, whether the scheme is up or down stream from the European site.</i></p>

Broad categories of potential impacts on European sites, with examples	Examples of operations responsible for impacts (Distance assumptions shown in italics)
<ul style="list-style-type: none"> <li>• Changes in groundwater levels and flows</li> <li>• Changes to coastal water movement</li> </ul>	
<p><b>Toxic contamination</b></p> <ul style="list-style-type: none"> <li>• Water pollution</li> <li>• Soil contamination</li> <li>• Air Pollution</li> </ul>	<p>Reduced dilution in downstream or receiving waterbodies due to changes in abstraction or reduced compensation flow.</p> <p><i>Air emissions associated with vehicular traffic during construction/operation of schemes.</i></p> <p><i>This effect is only likely to be significant where the transport route to and from the scheme is within 200 m of the boundary of the European site.</i></p>
<p><b>Non-toxic contamination</b></p> <ul style="list-style-type: none"> <li>• Nutrient enrichment (e.g. of soils and water)</li> <li>• Algal blooms</li> <li>• Changes in salinity</li> <li>• Changes in thermal regime</li> <li>• Changes in turbidity</li> <li>• Changes in sedimentation/silting</li> </ul>	<p>Changes to water salinity, nutrient levels, turbidity, thermal regime due to water abstraction, storage, or inter-catchment transfers.</p> <p><i>These effects are only likely to be significant where the boundary of the scheme extends within the same ground or surface water catchment as the European site. However, these effects are dependent on hydrological continuity between the scheme and the European site and sometimes, whether the scheme is up or down stream from the European site.</i></p>
<p><b>Biological disturbance</b></p> <ul style="list-style-type: none"> <li>• Direct mortality</li> <li>• Changes to habitat availability</li> <li>• Out-competition by non-native species</li> <li>• Selective extraction of species</li> <li>• Introduction of disease</li> <li>• Rapid population fluctuations</li> <li>• Natural succession</li> </ul>	<p>Potential for changes to habitat availability, for example reductions in wetted width of rivers leading to desiccation of macrophyte beds due to changes in abstraction or reduced compensation flow.</p> <p><i>This effect is only likely to be significant where the receiving water for the scheme is the European site or a tributary of the European site.</i></p>

## 5.4 Drought Plan Summary of HRA Screening

Given the level of uncertainty over the Type 4 measure to be taken forward, LSEs could not be ruled out without further study of specific potential drought order options and considering the pathways to international/European sites and potential impacts on qualifying species. The frequency and temporary duration of drought order measures means that the environmental risks are considered to be low, however, it is not possible to provide sufficient certainty required for HRA screening.

It is therefore recommended that Environmental Assessment Reports (EARs) and HRA be undertaken for potential Drought Order options where there is a potential for those options to result in LSEs on international/European sites. If LSE cannot be discounted at Stage 1 of the HRA, Stage 2 assessment of the relevant drought option(s) would be required to clarify the potential for adverse effects on site integrity. Mitigation, either temporary or permanent can be implemented to reduce impacts, or aid recovery post drought at stage 2 of the HRA and the residual risk of effects assessed. Mitigation should be site and time specific and developed in consultation with stakeholders. Where the Stage 1 HRA shows that the drought option results in LSEs, Stage 2 AA would be required to determine whether the LSEs would have an Adverse Effect on Site Integrity (AESI).

Where adverse significant effects are identified, an assessment of mitigation measures will need to be considered as is carried out to avoid the AESI. Mitigation measures may be possible on a temporary basis which could limit the nature of impact or aid recovery post drought. The mitigation will need to be site and time specific and will be developed in consultation with stakeholders. This assessment of drought orders would need to be undertaken in advance of the orders being required to ensure sufficient time for assessment, as well as any lead in time for access arrangements or construction works to be implemented. It is important that these are undertaken sufficiently in advance to ensure mitigation can be identified or alternatives considered if needed.

The Drought Plan sets out a process for identifying its component options. Where, in the course of the HRA process, it is established that Adverse Effects on Site Integrity cannot be avoided, alternative options that do not present this risk would be pursued.

### 6. Summary and Conclusions

This HRA has been prepared in accordance with the requirements of NI Water, as the competent authority and as set out in the Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995. It considers the potential of the options contained within the WR & SR Plan and the Drought Plan, to significantly affect European and internationally important nature conservation sites (SACs, SPAs and Ramsar sites) either alone or in combination with other plans and projects.

Thirteen international/European important nature conservation sites were considered within the WR & SR Plan study area for the HRA. Factors affecting these sites (with regard to their conservation objectives) were reviewed to provide a basis for considering whether the activities associated with the proposed options might result in likely significant effects.

Three water resource options and five resilience options have been assessed in this HRA screening report. For four options it was determined there were no, or very weak pathways to European sites and no further assessment within the HRA process was required. However, four options included in the draft WR & SR Plan were identified as requiring HRA Stage 2 AA. For these options, LSEs could be mitigated through the implementation standard mitigation such as adherence to noise and vibration management plans, species protection plans and pollution management plans. No in-combination effects were identified for the options included in the draft WR & SR Plan. However, project-level HRA should revisit the potential for in-combination effects, once an appropriate level of detail about the timing and design of projects is available.

The Drought Plan included a range of potential measures which could be used to address drought conditions. Given the uncertainty over the specific drought orders which might be brought forward it was not possible to rule out LSEs on international/European sites, although the risk was considered to be low. However, the Drought Plan provides for a range of possible measures and it is therefore recommended that HRA screening is undertaken as part of preparatory studies for drought orders to identify potential effects on international/European sites. The development of the Drought Plan is an iterative process that will ensure no Adverse Effects Site Integrity (AESI) ultimately result from the WR & SR Plan, through the exclusion of options that are found to present such a risk.

HRA will continue as the WR & SR Plan options are developed at the design stage. Project level HRA would be carried out at the permission stage, including those options Screened Out at Plan level, which would consider stand-alone effects and effects in combination with other relevant projects.

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## **Appendix D. Water Framework Directive Assessment**

# 1. Introduction and Background

## 1.1 Water Framework Directive in Northern Ireland

The Northern Ireland Environment Agency (NEIA) requires an assessment of the impact of works/modifications to water bodies throughout Northern Ireland under the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003<sup>6</sup>. The Water Framework Directive (WFD) has introduced a holistic approach to the management of water quality, requiring the protection of all aspects of the water environment including rivers, lakes, estuaries, coastal waters and groundwater. The Directive uses five status classifications for the water bodies: High, Good, Moderate, Poor and Bad. It also allows for extended deadlines or less stringent objectives to be set for WFD water bodies, should certain conditions be met.

The primary aim of the WFD is to improve/maintain 'Good Status' (or good ecological potential for artificial or heavily modified water bodies). In addition, the WFD requires no deterioration in overall status or status of individual quality elements. The overall status/potential comprises a series of biological, physico-chemical and hydromorphological 'quality elements'.

Within Northern Ireland the water bodies are divided into three River Basin Districts (RBDs), for which River Basin Management Plans have been created to outline the high level strategy for the district as a whole. The RBDs are then further divided into Local Management Areas (LMAs) within which the individual WFD water bodies sit.

The WFD outlines a number of objectives within Northern Ireland, including:

- provide at least good status for all water bodies;
- prevent deterioration in status;
- promote sustainable development; and,
- achieve specific standards for protected areas.

The overall water body comprises of a 'main water body' which, for the purposes of this report is defined as the watercourse identified on the NEIA mapping (NEIA, 2017), and then all tributaries feeding into this watercourse. The reported status/potential for the WFD water body covers all the watercourses within the catchment.

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<sup>6</sup> The regulations have been transposed from European Union legislation, the Water Framework Directive (2000/60/EC) (as amended)



## 2. Supply Demand Balance Options

## 3. Carmoney to Strabane Trunk Main (Option 6)

### 3.1 Scheme Description

The scheme involves the construction of a new strategic treated water trunk main between Carmoney distribution network near Derry in the North WRZ and Derg WTW in the West WRZ via Castletown SR in Strabane. The new link is based on a previous business case design by McAdams but has been sized to meet the supply demand balance deficit identified in the West WRZ as well as providing additional resilience capacity by supplementing the zone from surplus capacity in the North WRZ.

### 3.2 Technical Description

The scheme will involve the installation of the following:

- 8.9km 500mm DN pipe, operated under gravity, taken of the 600mm DI trunk main south of Avish Hill SR and supplying to Corrody SR (PN25 rated flanges id DI used) (17MI/d transfer).
- 20km 600mm DN pipe, pumped between Corrody SR and Castletown SR outside Strabane (PN25 rated flanges id DI used) (17MI/d transfer).
- It is assumed at this stage that the new trunk mains proposed will be constructed using Open Cut trenching. This is to be reviewed at detailed design, specifically for large watercourse crossings, which may require a drilling technique.
- 3 No Pumps (Duty/Assist/Standby) 450 kW at Carmoney WTW to pump to Avish Hill SR. (10bar pressure to be supplied)
- 2 No Pumps (Duty /Standby) 215 kW at Corrody SR to pump to Castletown SR. (5bar pressure to be supplied)
- Upgrades to the network in West WRZ should be implemented to allow for efficient transfer of the additional capacity provided by this link.

The 17ML/d flow volume has been chosen to meet the 3ML/d deficit identified in the West WRZ and to also to provide resilience to this zone in the event of plant failures occurring.

Routing of the new trunk main is based on the previous option proposed by McAdam design and is assumed to cover a mixture of urban road and grassland. Thorough assessment of the route, along with site surveys should be carried out at detailed design.

### 3.3 Water Environment

The proposed option requires the construction of a pipeline potentially crossing up to 34 watercourses, including 5 main WFD water bodies (i.e. the named watercourse within a WFD water body catchment). The following provides an overview of the WFD water bodies along the pipeline corridor, the potential impacts during construction and operation and an outline of potential mitigation measures.

#### 3.3.1 Baseline Overview

The proposed Carmoney to Strabane trunk main pipeline is located within the North Western River Basin District and passes through three Local Management Areas; namely the Roe, Faughan and Burn Dennet and Foyle. Table 3.1 provides details of the WFD water body catchments potentially impacted by the proposed pipeline and the number of watercourses crossed within each catchment. Table 3.2 then provides an overview of the WFD groundwater bodies potentially within the pipeline footprint and the statuses.

**Table 3.1: Summary of WFD water body crossings**

Local Management Area	Water Body Catchment Impacted	Water Body ID	Water Body Overall Status	Main Water Body Crossed	Other Watercourse Crossings
Roe	River Muff	UKGBNI1NW020203030	Good Status	No	1
Faughan	Faughan River (Carmoney)	UKGBNI1NW020208259	Poor Status	Yes	6
	Burngibbagh	UKGBNI1NW020204034	Good Status	Yes	1
Burn Dennet and Foyle	Upper Foyle	UKGBNI5NW250030	Moderate Status	Yes	21 (located within coastal interbasin)
	Burn Dennet River (Milltown)	UKGBNI1NW010101070	Moderate Status	Yes	0
	Glenmoman River	UKGBNI1NW010101075	Good Status	Yes	0

**Table 3.2: Summary of WFD groundwater bodies crossed by the proposed option**

Local Management Area	Groundwater Body Impacted	Water Body ID	Water Body Overall Status
Roe	Claudy	UKGBNI4NW003	Good Status

The pipeline also passes through a number of areas that lie within flood risk zones. This includes the 1 in 10 year flood zone at Strabane and Sion Mills.

### 3.3.2 Construction Impacts

#### *Open Trench Method*

Open trench crossings require the watercourse channel to be excavated to lay the pipeline and then backfilled following construction. This technique could lead to a significant risk of localised sediment release into the affected watercourses, with subsequent impacts on water quality associated with elevated levels of suspended solids and contaminants. The open trench method could also result in bank instability and increased risk of erosion.

Works within the watercourse and the surrounding floodplain could also have implications on flood risk.

#### *Trenchless Method*

A trenchless method (such as Horizontal Directional Drilling) requires the creation of launch and recovery areas in the land adjacent to a watercourse (i.e. the riparian zone) to set up the drilling infrastructure. A drill then passes under the watercourse and the pipe is laid without requiring any in-channel working. This would lead to activities such as excavation and vegetation clearance, leaving bare earth surfaces that could act as a source of fine sediment to the watercourse. The presence of activities and machinery adjacent to the watercourse could also lead to potential spillage risks, from oil and chemicals that could enter the watercourse during construction.

If the works adjacent to the watercourse are within the floodplain there could also be potential implications on flood risk.

### 3.3.3 Operation Impacts

#### *Open Trench Method*

Following construction, the open trench used to lay the pipe would be backfilled and the cross-section reinstated. However, there is the potential for the works within the channel bed and along the banks to have

created a weak point (also referred to as a knickpoint). This could cause localised erosion of the bed and banks, leading to channel adjustment (both upstream and downstream) within the vicinity of the crossing. This could have implications for the pipeline (depending on the depth it is laid) and surrounding infrastructure and land.

### *Trenchless Method*

The trenchless method requires no in-channel working and as a result there are unlikely to be any direct impacts on the watercourse, with any riparian vegetation stripped anticipated to re-grow. However, there is the potential for permanent changes to the groundwater depending on the depth of the pipeline, dewatering requirements and pipeline design. This would need to be further assessed to determine whether there would be a significant impact.

### **3.3.4 Potential Mitigation Measures**

The open cut trench method would have a number of direct impacts on flood risk, geomorphology and water quality; most of which would be mitigated through the use of the trenchless method. It is recommended that all main WFD water bodies are crossed using a trenchless method (where possible) to avoid any direct impacts to the WFD quality elements (including: hydromorphological, biological and physico-chemical).

If an open trench method is required, it is recommended that the works are undertaken in a dry channel, with water diverted around the working area. This would reduce the potential for mobilisation of sediment and bank material. Following the installation of the pipeline, the channel would be reinstated as per pre-construction conditions, recreating morphological features (including the channel bed and banks) and the riparian corridor. The design of the reinstatement and the works would be supervised by an appropriate personnel (such as a qualified geomorphologist).

The placement of the pipe onto existing road bridge crossings should also be considered as an option to avoid the need for direct works within the watercourses. This would need to be considered on a case by case basis noting the bridge stability, flood risk and landscape and visual implications.

### **3.3.5 Further Assessments**

A WFD assessment would need to be carried out to ensure that this option would not cause deterioration to existing WFD water body statuses or prevent any water body from achieving Good Ecological Status/Potential.

It is likely that further work would also be required to determine the potential impacts on flood risk, water quality and groundwater. This would be completed during the detailed design.

## 4. Castor Bay WTW to Ballydougan SR Trunk Main (Option 8)

### 4.1 Scheme Description

The aim of this option is to provide an additional 25ML/d transfer, from an existing source in the East WRZ, into the South WRZ to address the identified 19ML/d supply demand balance deficit in the zone and provide future resilience to the area.

The scheme involves the addition of a new trunk main between Castor Bay WTW and Ballydougan SR. The new main is to supplement the existing trunk mains between the locations stated above. This will facilitate a total flow transfer of 120ML/d to Ballydougan SR. A new dedicated pumping station will be required for the operation of the new main and is to be located adjacent to the clear water tank in Castor Bay WTW.

The scheme will involve the installation of the following:

- 11.4km 700mmDN pipe, pumped between Castor Bay WTW and Ballydougan SR, south of Lurgan (PN25 rated flanges id DI used) (25ML/d transfer).
- The trunk mains outlined above have been sized based on high level calculations between the source and destination. Further hydraulic analysis should be carried out at detailed design to identify any locations for inter-stage pumping or requirements for break pressure tanks.
- 3 No Pumps (Duty /Assist/Standby) 300 kW at a new pumping station constructed within the works at Castor Bay. (9bar pressure to be supplied)
- Based on discussion with operations and management at Castor Bay WTW, a location for the new pumps has been identified to the west of the existing clear water tank and can be constructed and commissioned with minimal requirement for shutdown to the existing pumps in the works.
- Pumps have been considered and costed with associated pumping station Civil and M&E works included. These include earthworks, pumping station chambers, valve chambers, access and flow control panels. This should be subject to detailed design if the option is progressed.

The 25ML/d flow volume has been chosen to meet the 16ML/d deficit identified in the South and Central WRZs and to provide resilience to the South zone.

Routing of the new trunk main between the two sites is based on a high level review of local mapping – seeking to follow where possible other trunk main routes and avoiding environmentally designated areas. Mains have been broadly outlined to follow transport infrastructure to allow for access when required. Thorough assessment of the route, along with site surveys should be carried out at detailed design. Costing has assumed a 50/50 split of rural road to undeveloped land or farmland construction.

For the purpose of costing, major watercourse crossings have been assumed to be carried out using a directional drilling technique.

For additional flow to be supplied to Ballydougan SR there will be a requirement for other supply areas from Castor Bay WTW to be back fed from other supply areas e.g. Fork Bridge. This should be considered further at detailed design and confirmed by modelling the distribution network in the area.

### 4.2 Water Environment

The proposed option requires the construction of a pipeline potentially crossing up to 24 watercourses, including one main WFD water body (i.e. the named watercourse within a WFD water body catchment). The following provides an overview of the WFD water bodies along the pipeline corridor, the potential impacts during construction and operation and an outline of potential mitigation measures.

#### 4.2.1 Baseline Overview

The proposed West WRZ Resilience trunk main pipeline is located within the Neagh Bann River Basin District and passes the River Blackwater and Derg and Mourne Local Management Area. Table 4.1 provides details of the WFD water body catchments potentially impacted by the proposed pipeline and the number of watercourses crossed within each catchment. Table 4.2 then provides an overview of the WFD groundwater bodies potentially within the pipeline footprint and the statuses.

**Table 4.1: Summary of WFD water body crossings**

Local Management Area	Water Body Catchment Impacted	Water Body ID	Water Body Overall Status	Main Water Body Crossed	Other Potential Watercourse Crossings
Lough Neagh	Closet River	UKGBNI1NB030308209	Moderate Status	Yes	18
	Lough Neagh Peripherals	UKGBNI1NB030308243	Bad Potential	No	5

**Table 4.2: Summary of WFD groundwater bodies crossed by the proposed option**

Local Management Area	Groundwater Body Impacted	Water Body ID	Water Body Overall Status
Lough Neagh	Antrim	UKGBNI4NB005	Poor Status
	Neagh	UKGBNI4NB020	Good Status

#### 4.2.2 Construction Impacts

##### *Open Trench Method*

Open trench crossings require the watercourse channel to be excavated to lay the pipeline and then backfilled following construction. This technique could lead to a significant risk of localised sediment release into the affected watercourses, with subsequent impacts on water quality associated with elevated levels of suspended solids and contaminants. The open trench method could also result in bank instability and increased risk of erosion.

Works within the watercourse and the surrounding floodplain could also have implications on flood risk.

##### *Trenchless Method*

A trenchless method requires the creation of launch and recovery areas in the land adjacent to a watercourse (i.e. the riparian zone) to set up the drilling infrastructure. A drill then passes under the watercourse and the pipe is laid without requiring any in-channel working. This would lead to activities such as excavation and vegetation clearance, leaving bare earth surfaces that could act as a source of fine sediment to the watercourse. The presence of activities and machinery adjacent to the watercourse could also lead to potential spillage risks, from oil and chemicals that could enter the watercourse during construction.

If the works adjacent to the watercourse are within the floodplain there could also be potential implications on flood risk.

#### 4.2.3 Operation Impacts

##### *Open Trench Method*

Following construction, the open trench used to lay the pipe would be backfilled and the cross-section reinstated. However, there is the potential for the works within the channel bed and along the banks to have created a weak point (also referred to as a knickpoint). This could cause localised erosion of the bed and banks,

leading to channel adjustment (both upstream and downstream) within the vicinity of the crossing. This could have implications for the pipeline (depending on the depth it is laid) and surrounding infrastructure and land.

### *Trenchless Method*

The trenchless method requires no in-channel working and as a result there is unlikely to be any direct impacts on the watercourse, with any riparian vegetation stripped anticipated to re-grow. However, there is the potential for permanent changes to the groundwater depending on the depth of the pipeline, dewatering requirements and pipeline design. This would need to be further assessed to determine whether there would be a significant impact.

#### **4.2.4 Potential Mitigation Measures**

The open cut trench method would have a number of direct impacts on flood risk, geomorphology and water quality; most of which would be mitigated through the use of the trenchless method. It is recommended that the main WFD water body is crossed using a trenchless method (if possible) to avoid any direct impacts to the WFD quality elements (including: hydromorphological, biological and physico-chemical).

If an open trench method is required, it is recommended that the works are undertaken in a dry channel, with water diverted around the working area. This would reduce the potential for mobilisation of sediment and bank material. Following the installation of the pipeline, the channel would be reinstated as per pre-construction conditions, recreating morphological features (including the channel bed and banks) and the riparian corridor. The design of the reinstatement and the works would be supervised by an appropriate personnel (such as a qualified geomorphologist).

The placement of the pipe onto existing road bridge crossings should also be considered as an option to avoid the need for direct works within the watercourses. This would need to be considered on a case by case basis noting the bridge stability, flood risk and landscape and visual implications.

#### **4.2.5 Further Assessment**

A WFD assessment would need to be carried out to ensure that the Constrained Castor Bay WTW to Ballydougan SR Trunk Main option would not cause deterioration to existing WFD water body statuses or prevent any water body from achieving Good Ecological Status/Potential.

It is likely that further work would also be required to determine the potential impacts on flood risk, water quality and groundwater. This would be completed during the detailed design phase.

## **5. Resilience Options proposed for further consideration**



## 6. West WRZ Resilience, Trunk Main Upgrades and Links (Option 32)

### Scheme Description

The option detailed below is intended to outline methods to better facilitate flow between all the works in the West WRZ, around the Omagh area. The proposals are also aimed to ensure that, should there be a failure or shortage of supply from an individual works in the region, their supply zones can be supplemented from the other works in the zone (or benefit from proposals outlined in the main body of the Water Resource Plan).

The proposals include upgrading the capacity of the trunk main from Derg WTW to 14ML/d, supplying to the rest of the zone and supplementing Lough Bradan WTWs and Killyclogher SR if required. A new 6ML/d trunk main from Killyclogher/Killybrack westwards to Derg and Bradan allowing bidirectional flow, meaning Bradan and/or Derg can be supplemented from the Omagh and Loughmacrory supply. A new 12ML/d transfer connection between Killybrack and Killyclogher SRs to provide an increased link between the east and west of the WRZ.

New pumps should be located on the Bradan supply main before the junction with the Derg supply to allow for reverse flow to be supplied back to Bradan. New pumps on the Loughmacrory to Killyclogher supply main, at Killyclogher, will allow reversal of the existing 6ML/d flow back to the Loughmacrory supply zone.

### 6.1 Technical Description

The scheme will involve the following:

- Upgrade of the Derg/Bradán Trunk main – 17.9km 550mm DN pipe (14ML/D).
- Proposal to replace the 400mm DI main currently in operation. The new main has been assumed to follow the route of existing main, with tie in points at similar locations.
- It has been assumed that an upgrade to the pumps at Derg would be required. 3 No x Booster Pumps (Duty/Duty/Standby), 325 kW would be required (9bar pressure to be supplied). Capacity of existing pumps to be confirmed.
- 1km 450mm DN main connecting Killyclogher SR to the existing 400mm trunk main supplying from Derg/Bradán to Omagh and the new 6ML/d trunk main (detailed below). This should connect to the existing 400mm DI main upstream of Killybrack SR to create, in effect, a ring main between the reservoirs and allow bidirectional flow between the two. It is assumed the pump capacity at Killybrack SR currently does not need to be upgraded.
- 17.4km 400mm DN pipe (6ML/d) between the Derg/Bradán trunk mains connection and the new Omagh 12ML/d transfer (detailed above). This new main is proposed to follow the route of the existing 400mm DI main which supplies to Killyclogher from Derg/Bradán and facilitate bidirectional flow. It is assumed that no additional pump capacity will be required for operation.
- 2 No x Booster Pumps (Duty/Standby), 200 kW, are required (as shown in Fig 11.1) to facilitate reverse flow of 8ML/d back to Lough Bradán if required (10bar pressure to be supplied).
- 2 No x Booster Pumps (Duty/Standby), 112 kW, are required (as shown in Fig 11.1) to facilitate reverse flow of 6ML/d back to Loughmacrory if required (2bar pressure to be supplied). The new pumps are proposed at a location 2km from Loughmacrory WTW as flow can be gravitated from Killyclogher SR for the remaining section of pipeline.

The above measures are intended to provide an increased flexibility within the WRZ trunk mains network. If the proposals put forward are to be put in place, the network should be modelled at detailed design to confirm

sufficient flow can be provided to each supply zone in the event of WTW failure, without causing issues in the remaining network.

Routings of new trunk mains for this option in general have been assumed to follow the route of existing network infrastructure, apart from the new Omagh transfer. For all new mains, and in particular the transfer in the Omagh area, thorough assessment of the route, along with site surveys should be carried out at detailed design. Costing has assumed a 50/50 split of rural road to grassland construction.

It is assumed at this stage that the new trunk mains proposed will be constructed using Open Cut trenching. This should be reviewed at detailed design, specifically for large watercourse crossings. For the purpose of costing, major watercourse crossings have been assumed to be carried out using a directional drilling technique.

## 6.2 Water Environment

The proposed option requires the construction of a pipeline potentially crossing up to 73 watercourses, including five main WFD water bodies (i.e. the named watercourse within a WFD water body catchment). The following provides an overview of the WFD water bodies along the pipeline corridor, the potential impacts during construction and operation and an outline of potential mitigation measures.

### 6.2.1 Baseline Overview

The proposed West WRZ Resilience trunk main pipeline is located within the North Western River Basin District and passes the River Blackwater and Derg and Mourne Local Management Area. Table 6.1 provides details of the WFD water body catchments potentially impacted by the proposed pipeline and the number of watercourses crossed within each catchment. Table 6.2 then provides an overview of the WFD groundwater bodies potentially within the pipeline footprint and the statuses.

**Table 6.1: Summary of WFD water body crossings**

Local Management Area	Water Body Catchment Impacted	Water Body ID	Water Body Overall Status	Main Water Body Crossed	Other Potential Watercourse Crossings
Strule	Camowen River (Omagh)	UKGBNI1NW010108257	Good Status	No	4
	Strule River	UKGBNI1NW010108258	Moderate Status	Yes	4
	Fairywater River (Dunwish)	UKGBNI1NW010102041	Moderate Status	No	16
	Drumquin River	UKGBNI1NW010104042	Good Status	Yes	15
	The Black Water (Drumquin)	UKGBNI1NW010104046	Moderate Potential	Yes	2
	Fairy Water (Envagh)	UKGBNI1NW010104044	Moderate Status	Yes	22
Derg and Mourne	Derg River (Millbrook)	UKGBNI1NW010102095	Moderate Status	Yes	5

**Table 6.2: Summary of WFD groundwater bodies crossed by the proposed option**

Local Management Area	Groundwater Body Impacted	Water Body ID	Water Body Overall Status
Strule	Omagh	UKGBNI4NW006	Poor Status

Local Management Area	Groundwater Body Impacted	Water Body ID	Water Body Overall Status
Strule/Derg and Mourne	Castledearg	UKGBNI4NW005	Good Status

### 6.2.2 Construction Impacts

#### *Open Trench Method*

Open trench crossings require the watercourse channel to be excavated to lay the pipeline and then backfilled following construction. This technique could lead to a significant risk of localised sediment release into the affected watercourses, with subsequent impacts on water quality associated with elevated levels of suspended solids and contaminants. The open trench method could also result in bank instability and increased risk of erosion.

Works within the watercourse and the surrounding floodplain could also have implications on flood risk.

#### *Trenchless Method*

A trenchless method requires the creation of launch and recovery areas in the land adjacent to a watercourse (i.e. the riparian zone) to set up the drilling infrastructure. A drill then passes under the watercourse and the pipe is laid without requiring any in-channel working. This would lead to activities such as excavation and vegetation clearance, leaving bare earth surfaces that could act as a source of fine sediment to the watercourse. The presence of activities and machinery adjacent to the watercourse could also lead to potential spillage risks, from oil and chemicals that could enter the watercourse during construction.

If the works adjacent to the watercourse are within the floodplain there could also be potential implications on flood risk.

### 6.2.3 Operation Impacts

#### *Open Trench Method*

Following construction, the open trench used to lay the pipe would be backfilled and the cross-section reinstated. However, there is the potential for the works within the channel bed and along the banks to have created a weak point (also referred to as a knickpoint). This could cause localised erosion of the bed and banks, leading to channel adjustment (both upstream and downstream) within the vicinity of the crossing. This could have implications for the pipeline (depending on the depth it is laid) and surrounding infrastructure and land.

#### *Trenchless Method*

The trenchless method requires no in-channel working and as a result there are unlikely to be any direct impacts on the watercourse, with any riparian vegetation stripped anticipated to re-grow. However, there is the potential for permanent changes to the groundwater depending on the depth of the pipeline, dewatering requirements and pipeline design. This would need to be further assessed to determine whether there would be a significant impact.

### 6.2.4 Potential Mitigation Measures

The open cut trench method would have a number of direct impacts on flood risk, geomorphology and water quality; most of which would be mitigated through the use of the trenchless method. It is recommended that all main WFD water bodies are crossed using a trenchless method (where possible) to avoid any direct impacts to the WFD quality elements (including: hydromorphological, biological and physico-chemical).

If an open trench method is required, it is recommended that the works are undertaken in a dry channel, with water diverted around the working area. This would reduce the potential for mobilisation of sediment and bank material. Following the installation of the pipeline, the channel would be reinstated as per pre-construction conditions, recreating morphological features (including the channel bed and banks) and the riparian corridor,

The design of the reinstatement and the works would be supervised by an appropriate personnel (such as a qualified geomorphologist).

The placement of the pipe onto existing road bridge crossings should also be considered as an option to avoid the need for direct works within the watercourses. This would need to be considered on a case by case basis noting the bridge stability, flood risk and landscape and visual implications.

### **6.2.5 Further Assessment**

A WFD assessment would need to be carried out to ensure that West WRZ Resilience option would not cause deterioration to existing WFD water body statuses or prevent any water body from achieving Good Ecological Status/Potential.

It is likely that further work would also be required to determine the potential impacts on flood risk, water quality and groundwater. This would be completed during the detailed design.

## 7. Lough Fea WTW & Moyola WTW Resilience Option (Option 25)

### 7.1 Scheme Description

The purpose of this resilience option is to bring flow from Moyola WTW into the Lough Fea WTW distribution network. This option would only be brought into effect in an emergency if Lough Fea WTW were to encounter a major issue and stop operating.

The option involves bringing the maximum capacity of Moyola WTW, 19ML/d, to the command reservoir, Mullaghbuoy SR, making use of the existing pumped trunk main. The existing pumped trunk main from Mullaghbuoy SR will then transfer 10ML/d to Unagh SR. The capacity of this truck main was confirmed with NI Water Field Manager. The 10ML/d will then be pumped from Unagh SR to Lough Fea CWT2 through the addition of a new pumping station and new truck main. This will allow the water to gravitate from Lough Fea WTW to the distribution network in the normal manner.

This alteration will allow 10ML/d flow to get from Moyola WTW to the Lough Fea WTW distribution network in emergency.

An additional pumping station to the north of Moneymore should also be considered as a potential addition to this option. This pumping station will allow for 10ML/d to be transferred from Lough Fea WTW to Moyola distribution network in an emergency. The 10ML/d flow will then gravitate from Lough Fea WTW utilising the new truck main into Unagh SR. The additional pumping station at Moneymore will then allow the 10ML/d flow to gravitate and be pumped respectively from Unagh SR to the Moyola command reservoir, Mullaghbuoy SR. This alteration would allow 10ML/d flow to get from Lough Fea WTW to the Moyola WTW distribution network in emergency.

In an emergency situation the resilience option would benefit 11,409 households within the Lough Fea WTW distribution network. If the additional pumping station at Moneymore is included then an additional 18,775 households within the Moyola WTW distribution network would benefit from the resilience option.

### 7.2 Technical Description

The scheme will involve the installation of the following:

- 5.12km 450mm DN pipe between Unagh SR to Lough Fea CWT1
- 2 No x Booster Pumps at 275 kW at Unagh SR (11 bar pressure to be supplied)

Possible addition to allow flow to be transferred from Lough Fea WTW to Moyola WTW:

- 2 No x Booster Pumps at 100 kW between Unagh SR and Mullaghbuoy SR (4 bar pressure to be supplied)

### 7.3 Water Environment

The proposed option requires the construction of a pipeline potentially crossing up to 10 watercourses. The following provides an overview of the WFD water body catchment located within the pipeline corridor, the potential impacts during construction and operation and an outline of potential mitigation measures.

#### 7.3.1 Baseline Overview

The proposed Lough Fea WTW and Moyola WTW Resilience option is located within the North Western River Basin District and passes through the Ballinderry Local Management Areas. Table 7.1 provides details of the WFD water body catchment which would be potentially impacted by the proposed pipeline and the number of watercourses crossed within the catchment. Table 7.2 then provides an overview of the WFD groundwater bodies potentially within the option footprint and the statuses.

**Table 7.1: Summary of WFD water body crossing**

Local Management Area	Water Body Catchment Impacted	Water Body ID	Water Body Overall Status	Crossing Main Water Body	Other watercourse crossings
Ballinderry	Lissan Water	UKGBNI1NE050501118	Moderate Status	No	10

**Table 7.2: Summary of WFD groundwater bodies crossed by the proposed option (note: option is located on border between two water bodies)**

Local Management Area	Groundwater Body Impacted	Water Body ID	Water Body Overall Status
Ballinderry	Moneymore	UKGBNI4NB004	Good status
	Cookstown	UKGBNI4NB003	Good Status

### 7.3.2 Construction Impacts

Open trench crossings require the watercourse channel to be excavated to lay the pipeline and then backfilled following construction. This technique could lead to a significant risk of localised sediment release into the affected watercourses, with subsequent impacts on water quality associated with elevated levels of suspended solids and contaminants. The open trench method could also result in bank instability and increased risk of erosion.

Works within the watercourse and the surrounding floodplain could also have implications on flood risk.

### 7.3.3 Operation Impacts

Following construction, the open trench used to lay the pipe would be backfilled and the cross-section reinstated. However, there is the potential for the works within the channel bed and along the banks to have created a weak point (also referred to as a knickpoint). This could cause localised erosion of the bed and banks, leading to channel adjustment (both upstream and downstream) within the vicinity of the crossing. This could have implications for the pipeline (depending on the depth it is laid) and surrounding infrastructure and land.

### 7.3.4 Potential Mitigation Measures

The open cut trench method would have a number of direct impacts on flood risk, geomorphology and water quality; most of which would be mitigated through the use of a trenchless method. It is recommended that the use of a trenchless method is considered for the crossings. The open cut trench method would have a number of direct impacts on flood risk, geomorphology and water quality; most of which would be mitigated through the use of the trenchless method. It is recommended that all main WFD water bodies are crossed using a trenchless method (where possible) to avoid any direct impacts to the WFD quality elements (including: hydromorphological, biological and physico-chemical).

If an open trench method is required, it is recommended that the works are undertaken in a dry channel, with water diverted around the working area. This would reduce the potential for mobilisation of sediment and bank material. Following the installation of the pipeline, the channel would be reinstated as per pre-construction conditions, recreating morphological features (including the channel bed and banks) and the riparian corridor, The design of the reinstatement and the works would be supervised by an appropriate personnel (such as a qualified geomorphologist).

**7.3.5 Further Assessments**

A WFD assessment would need to be carried out to ensure that this option would not cause deterioration to Three Mile Water waterbody status or the water body from achieving Good Ecological Status/Potential.

It is likely that further work would also be required to determine the potential impacts on flood risk, water quality and groundwater. This would be completed during the detailed design.

## 8. Seagahan to Clay Lake Trunk Main (Option 31)

### 8.1 Scheme Description

The scheme proposed involves the construction of a link main between the two works within the South WRZ to improve the resilience of the neighbouring distribution networks.

The works at Seagahan has a large output capacity but there have been recent concerns regarding the source capacity. At Clay Lake the works is smaller but the source is much larger and secure. The construction of a new direct trunk main between the works will provide resilience against failure of either works or source issues for each supply zone area.

This option considers that the main should be bidirectional and allow for water to be transferred between both works.

(The main primarily has been considered for treated water but could potentially act as a raw water transfer from the large source at Clay Lake to the reportedly unsecure source at Seagahan, but this would provide little resilience to the works at Clay Lake).

The option to transfer water via the existing network has been considered (between Armaghbrague SR and Corran SR, but the volume of flow available is limited by the existing mains infrastructure and service reservoir sizes).

### 8.2 Technical Description

The scheme will involve the installation of the follow:

- 9.5km 250mm DN pipe between Clay Lake and Seagahan WTWs
- Sized for 5MI/d transfer.
- To allow for water to be transferred in both directions as required 1 No set of pumps will be required at Seagahan to pump up to Clay Lake
- It is assumed at this stage that the new trunk mains proposed will be constructed using Open Cut trenching. This is to be reviewed at detailed design, specifically for large watercourse crossings. For the purpose of costing, major watercourse crossings have been assumed to be carried out using a directional drilling technique.
- 2 No x Booster Pumps at 90 kW at Seagahan WTW. (5bar pressure to be supplied)

Routing of the new trunk main between the two works is based on a high level review of local mapping – seeking to follow where possible other trunk main routes and avoiding environmentally designated areas. Mains have been broadly outlined to follow transport infrastructure to allow for access when required.

The route shown has also been selected with the intention of insuring Clay Lake is the highest point of supply. This avoids the need to include new pumps at Clay Lake or a Break Pressure Tank along the route.

Thorough assessment of the route, along with site surveys should be carried out at detailed design. Costing has assumed a 50/50 split of rural road to grassland construction.

### 8.3 Water Environment

The proposed option requires the construction of a pipeline potentially crossing up to 17 watercourses, including three main WFD water bodies (i.e. the named watercourse within a WFD water body catchment). The following



provides an overview of the WFD water bodies along the pipeline corridor, the potential impacts during construction and operation and an outline of potential mitigation measures.

### 8.3.1 Baseline Overview

The proposed Seaghan to Clay Lake trunk main pipeline is located within the Neagh Bann River Basin District and passes the River Blackwater Local Management Area. Table 8.1: provides details of the WFD water body catchments potentially impacted by the proposed pipeline and the number of watercourses crossed within each catchment. Table 8.2: then provides an overview of the WFD groundwater bodies potentially within the pipeline footprint and the statuses.

**Table 8.1: Summary of WFD water body crossings**

Local Management Area	Water Body Catchment Impacted	Water Body ID	Water Body Overall Status	Main Water Body Crossed	Other Potential Watercourse Crossings
River Blackwater	Butter Water	UKGBNI1NB030307048	Moderate Potential	No	1
	Ballymacone River	UKGBNI1NB030307111	Moderate Status	Yes	4
	Callan River (Tassagh)	UKGBNI1NB030307112	Moderate Status	Yes	5
	Clay River	UKGBNI1NB030307049	Moderate Potential	Yes	4

**Table 8.2: Summary of WFD groundwater bodies crossed by the proposed option**

Local Management Area	Groundwater Body Impacted	Water Body ID	Water Body Overall Status
River Blackwater	Keady	UKGBNI4NB011	Good Status

### 8.3.2 Construction Impacts

#### *Open Trench Method*

Open trench crossings require the watercourse channel to be excavated to lay the pipeline and then backfilled following construction. This technique could lead to a significant risk of localised sediment release into the affected watercourses, with subsequent impacts on water quality associated with elevated levels of suspended solids and contaminants. The open trench method could also result in bank instability and increased risk of erosion.

Works within the watercourse and the surrounding floodplain could also have implications on flood risk.

#### *Trenchless Method*

A trenchless method requires the creation of launch and recovery areas in the land adjacent to a watercourse (i.e. the riparian zone) to set up the drilling infrastructure. A drill then passes under the watercourse and the pipe is laid without requiring any in-channel working. This would lead to activities such as excavation and vegetation clearance, leaving bare earth surfaces that could act as a source of fine sediment to the watercourse. The presence of activities and machinery adjacent to the watercourse could also lead to potential spillage risks, from oil and chemicals that could enter the watercourse during construction.

If the works adjacent to the watercourse are within the floodplain there could also be potential implications on flood risk.

### 8.3.3 Operation Impacts

#### *Open Trench Method*

Following construction, the open trench used to lay the pipe would be backfilled and the cross-section reinstated. However, there is the potential for the works within the channel bed and along the banks to have created a weak point (also referred to as a knickpoint). This could cause localised erosion of the bed and banks, leading to channel adjustment (both upstream and downstream) within the vicinity of the crossing. This could have implications for the pipeline (depending on the depth it is laid) and surrounding infrastructure and land.

#### *Trenchless Method*

The trenchless method requires no in-channel working and as a result there are unlikely to be any direct impacts on the watercourse, with any riparian vegetation stripped anticipated to re-grow. However, there is the potential for permanent changes to the groundwater depending on the depth of the pipeline, dewatering requirements and pipeline design. This would need to be further assessed to determine whether there would be a significant impact.

### 8.3.4 Potential Mitigation Measures

The open cut trench method would have a number of direct impacts on flood risk, geomorphology and water quality; most of which would be mitigated through the use of the trenchless method. It is recommended that all main WFD water bodies are crossed using a trenchless method (where possible) to avoid any direct impacts to the WFD quality elements (including: hydromorphological, biological and physico-chemical).

If an open trench method is required, it is recommended that the works are undertaken in a dry channel, with water diverted around the working area. This would reduce the potential for mobilisation of sediment and bank material. Following the installation of the pipeline, the channel would be reinstated as per pre-construction conditions, recreating morphological features (including the channel bed and banks) and the riparian corridor. The design of the reinstatement and the works would be supervised by an appropriate personnel (such as a qualified geomorphologist).

The placement of the pipe onto existing road bridge crossings should also be considered as an option to avoid the need for direct works within the watercourses. This would need to be considered on a case by case basis noting the bridge stability, flood risk and landscape and visual implications.

### 8.3.5 Further Assessment

A WFD assessment would need to be carried out to ensure that this option would not cause deterioration to existing WFD water body statuses or prevent any water body from achieving Good Ecological Status/Potential.

It is likely that further work would also be required to determine the potential impacts on flood risk, water quality and groundwater. This would be completed during the detailed design.

## 9. Upgrade Killyhevlin WTW (Option 28)

### 9.1 Scheme Description

Killyhevlin WTW is a strategically important WTW in the south west of the country and is the sole supply for most of that area including the town of Enniskillen. The process at Killyhevlin WTW is reliant on old technology therefore to increase the security of supply of the area it makes sense to consider replacement of this plant with modern technology.

This option involves the construction of a new replacement WTW at Killyhevlin adjacent to the existing works. The new works is to have the capacity to supply the whole South West WRZ, including the Belleek distribution area. The plant is to be a DAF plant with a 40MI/d capacity to replace the existing plant.

### 9.2 Technical Description

The scheme would involve the construction of a new treatment plant consisting of the following:

- New 40MI/d DAF plant, constructed adjacent to the existing site.
- Additional power to the site (standby generation)
- Additional telemetry units.
- New 24hr CWT storage on site.

Approximately 1.7ha of arable land has been identified as required for the construction of the new works. Detailed feasibility should be carried out to locate the optimum position of a new works with regards to topography and least environmental & public disruption.

It has been assumed that the new works can be connected to the existing inlet and outlet pipework and that new abstraction plant will not be required. Existing onsite storage should continue to be utilised.

### 9.3 Water Environment

The proposed option requires the construction of Water Treatment Works Upgrade adjacent to a WFD waterbody, (potentially impacting 2 WFD water body catchments). The following provides an overview of the WFD water bodies in close proximity to the works, the potential impacts during construction and operation and an outline of potential mitigation measures.

#### 9.3.1 Baseline Overview

The proposed Killyhevlin WTW Upgrade is located within the North Western River Basin District and passes through Lower Lough Erne Local Management Area. Table 9.1 provides details of the WFD water body catchments potentially impacted by the proposed WTW Upgrade and the number of watercourses crossed within each catchment. Table 9.2 provides an overview of the WFD groundwater bodies potentially within the footprint and the statuses.

**Table 9.1: Summary of WFD water body crossings**

Local Management Area	Water Body Catchment Impacted	Water Body ID	Water Body Overall Status	Main Water Body Crossed	Other Potential Watercourse Crossings
Lower Lough Erne	Lower Lough Erne Kesh	UKGBNI3NW0006	Moderate Potential	No	0
	Lower Lough Erne Devenish	UKGBNI3NW0007	Moderate Potential	No	0

**Table 9.2: Summary of WFD groundwater bodies crossed by the proposed option**

Local Management Area	Groundwater Body Impacted	Water Body ID	Water Body Overall Status
Lower Lough Erne	Irvinestown	UKGBNI4NW007	Poor Status (due to contribution of P to surface water)
	Castlecaldwell Forest	UKGBNI4NW015	Good Status

The WTW also lies within the 1 in 10 year flood zone at the River Erne.

### 9.3.2 Construction Impacts

Construction impacts include the potential for pollution and disturbance to channel banks causing sediment in runoff or chemical pollution during works.

### 9.3.3 Operation Impacts

Operational impacts include potential for discharge of process wastes from treatment works.

### 9.3.4 Potential Mitigation Measures

Good construction management to reduce risk of pollution of the adjacent River Erne and WTW design to avoid process loss discharge to the river.

### 9.3.5 Further Assessment

A WFD assessment would need to be carried out to ensure that the option would not cause deterioration to the adjacent WFD water body statuses or prevent any water body from achieving Good Ecological Status/Potential.

It is likely that further work would also be required to determine the potential impacts on flood risk, water quality and groundwater. This would be completed during the detailed design.

## 10. Ballinrees Resilience Option (Option 26)

### 10.1 Scheme Description

The purpose of this resilience option is to bring flow from Caugh Hill SR into the Ballinrees distribution network. This option would only be brought into effect in an emergency if Ballinrees Gortcavan CWB were to encounter a major issue and stop operating. This option proposes a method to allow the works to be supplemented from Caugh Hill, if the Ballinrees facility could not function normally.

A capacity of 20MI/d is proposed to be pumped from Caugh Hill through existing 700mm trunk main using the existing pump station. It is assumed that the existing pump and trunk main system at Caugh Hill can handle this capacity. This 20MI/d flow allows for approximately 14.6MI/d to be transferred to Ballinrees with approximately 4.5MI/d and 0.9 MI/d being extracted at Moys and Stradreagh respectively. This 14.6MI/d is smaller than the average output required of 32.45MI/d from Ballinrees CWB. Ballinrees however, has stored capacity which is assumed to supplement this flow from Caugh Hill for a maximum of 48 hours. The installation of an entire new trunk main to increase this flow to Ballinrees is not justified.

As described by OPPs, the existing trunk main at the Corrody Connection near Moys, to Moys SR can only facilitate a maximum of 10MI/d flow. A new trunk main is proposed to facilitate the remaining 10MI/d flow from the Connection to Moys SR as highlighted in red in the same figure.

The existing trunk main from Moys to Ballinrees is proposed to be utilised with the addition of new pumps to aid transfer, as shown in Figure 6.1.

In an emergency situation the resilience option would benefit 35,653 houses (Apartments, Detached, Semi Detached, terrace or other) within the Ballinrees distribution network.

### 10.2 Technical Description

The scheme will involve the installation of the follow:

- Approx. 1.4km of **new** 400mm DN pipe from Corrody Connection to Moys constructed to transfer 10MI/d flow. No pump required. Sized for 10MI/d transfer.
- From Moys SR to Stradreagh SR a **new** 400kW pump is proposed to be installed to allow flow toward Stradreagh SR (9 bar pressure to be supplied). Sized for 16MI/d transfer.
- From Stradreagh SR to Ballinrees CWB **new** additional 1x 310kW and 1x 170kW pumps are proposed to be installed to allow flow toward Stradreagh (8 bar and approx. 4 bar pressure to be supplied). Sized for 15MI/d transfer.

### 10.3 Water Environment

The proposed option requires the construction of a pipeline and three new pumps. The following provides an overview of the WFD groundwater bodies within the study area, the potential impacts during construction and operation and an outline of potential mitigation measures.

### 10.3.1 Baseline Overview

The proposed Ballinrees Resilience Option is located within the North Western River Basin District and passes through the Roe Local Management Area. Table 10.1 provides details of the WFD groundwater body catchments potentially impacted by the proposed option.

**Table 10.1: Summary of WFD groundwater bodies crossed by the proposed option**

Local Management Area	Groundwater Body Impacted	Water Body ID	Water Body Overall Status
Roe	Magiligan	UKGBNI4NW001	Bad Status
	Claudy	UKGBNI4NW003	Good Status

The option also passes through a number of areas that lie within flood risk zones.

### 10.3.2 Construction Impacts

The option could involve activities such as excavation and vegetation clearance, leaving bare earth surfaces that could act as a source of fine sediment to nearby watercourses. The presence of activities and machinery adjacent to watercourses could also lead to potential spillage risks, from oil and chemicals that could enter the watercourse during construction.

If the works adjacent to the watercourse are within the floodplain there could also be potential implications on flood risk.

### 10.3.3 Operation Impacts

The option requires no in-channel working and as a result there are unlikely to be any direct impacts on any nearby watercourses, with any riparian vegetation stripped anticipated to re-grow. However, there is the potential for permanent changes to the groundwater depending on the depth of the pipeline and pumps, dewatering requirements and design. This would need to be further assessed to determine whether there would be a significant impact.

### 10.3.4 Potential Mitigation Measures

The assessment of potential impacts to groundwater and flood risk could result in the requirement for mitigation measures.

### 10.3.5 Further Assessments

It is likely that further work would also be required to determine the potential impacts on flood risk, water quality and groundwater. This would be completed during the detailed design.

## Appendix E. Equality Impact Assessment

### Part 1. Policy scoping

The first stage of the screening process involves scoping the policy under consideration. The purpose of policy scoping is to help prepare the background and context and set out the aims and objectives for the policy, being screened. At this stage, scoping the policy will help identify potential constraints as well as opportunities and will help the policy maker work through the screening process on a step by step basis.

Public authorities should remember that the Section 75 statutory duties apply to internal policies (relating to people who work for the authority), as well as external policies (relating to those who are, or could be, served by the authority).

#### Information about the policy

<p><b>Name of the policy</b></p> <p>Water Resource and Supply Resilience Plan (2015 – 2021)</p>
<p><b>Is this an existing, revised or a new policy?</b></p> <p>New</p>
<p><b>What is it trying to achieve? (intended aims/outcomes)</b></p> <p>The WR &amp; SR Plan is a combined Water Resource Management Plan and Drought Plan. The aims of this combined plan is to;</p> <ul style="list-style-type: none"> <li>a) Estimate of the quantities of water required to meet its obligations;</li> <li>b) Set out measures which the water undertaker intends to take or continue for the purpose of planning to manage and develop water resources so as to be able to meet its obligations;</li> <li>c) Define likely sequence and timing for implementing the measures;</li> <li>d) Set out the measures the water undertaker might need to take to restrain demand for water;</li> <li>e) Set out the measures the water undertaker might need to take to obtain extra water from other sources;</li> <li>f) Define how the water undertaker will monitor the effects of the drought and of the measures taken under the Drought Plan; and</li> <li>g) Such other matters as directed by DfI.</li> </ul>
<p><b>Are there any Section 75 categories which might be expected to benefit from the intended policy?</b></p> <p>No</p> <p><b>If so, explain how.</b></p>
<p><b>Who initiated or wrote the policy?</b></p> <p>NI Water</p>

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### Who owns and who implements the policy?

NI Water

### Background

The Water and Sewerage Services (Northern Ireland) Act 2016 requires NI Water to produce a Water Resource Management Plan on a maximum period of a six yearly basis and a Drought Plan on a 3 yearly basis. (Schedule 1) of the order has been revised in 2016 to bring in a requirement to combine Water Resource Management Plans and Drought Plans. This is achieved through an overarching Water Resource and Supply Resilience Plan (hereafter referred to as 'the Plan' or WR & SRP) in line with the Price Control period (PC15 – 2015 to 2021). The plan outlines a range of options and scenarios to balance supply and demand, increase the resilience of its water assets and reduce the vulnerability of its supply in all areas.

### Implementation factors

Are there any factors which could contribute to/detract from the intended aim/outcome of the policy/decision?

If yes, are they

financial

legislative

other, please specify \_\_\_\_\_

### Main stakeholders affected

Who are the internal and external stakeholders (actual or potential) that the policy will impact upon?

staff

service users

other public sector organisations

voluntary/community/trade unions

other, please specify



## Draft Water Resource & Supply Resilience Plan

### Other policies with a bearing on this policy

- what are they?

Sustainable Water - A Long-Term Water Strategy for Northern Ireland (2015 – 2040)

- who owns them?

Department for Infrastructure

## Draft Water Resource & Supply Resilience Plan

### Available evidence

Evidence to help inform the screening process may take many forms. Public authorities should ensure that their screening decision is informed by relevant data.

What evidence/information (both qualitative and quantitative) have you gathered to inform this policy? Specify details for each of the Section 75 categories.

Section 75 category	Details of evidence/ information
Religious belief	<ul style="list-style-type: none"> <li>• Equalities Commission, 2005, Practical Guidance on Equality Impact Assessment</li> <li>• Northern Ireland Statistics and Research Agency (Various; Population, Health and Social Care, Deprivation, Economy, Births, Deaths and Marriages, People, Places and Culture, etc.) Available at: <a href="https://www.nisra.gov.uk/statistics">https://www.nisra.gov.uk/statistics</a></li> <li>• Northern Ireland Neighbourhood Information Services, (<i>Various; Economy, Population, Human Health, Tourism</i>), Available at: <a href="http://www.nisra.gov.uk/">http://www.nisra.gov.uk/</a></li> <li>• WR &amp; SR Plan Technical Information and detailed SEA Assessment Tables on Options</li> </ul>
Political opinion	
Racial group	
Age	
Marital status	
Sexual orientation	
Men and women generally	
Disability	
Dependants	

## Draft Water Resource & Supply Resilience Plan

### Needs, experiences and priorities

Taking into account the information referred to above, what are the different needs, experiences and priorities of each of the following categories, in relation to the particular policy/decision? Specify details for each of the Section 75 categories

Section 75 category	Details of needs/experiences/priorities
Religious belief	There are no specific needs identified for this group.
Political opinion	There are no specific needs identified for this group.
Racial group	There are no specific needs identified in relation to the WR&SP. However, for the Drought Plan there is potential for water use restrictions to be applied for non-essential use. As there can be specific dependency on access to water for some employment activities which could be affected by Drought Plan water restrictions these could affect some ethnic groups more than others; for example, those involved in car washing businesses or other small businesses. Therefore, there is potential that some ethnic groups may be particularly affected by the application of restrictions.
Age	There are no specific needs identified for this group.
Marital status	There are no specific needs identified for this group.
Sexual orientation	There are no specific needs identified for this group.
Men and women generally	There are no specific needs identified for this group.
Disability	There are no specific needs identified for this group in relation to the WR&SP. However, there can be specific needs for water access for this group which are required to be considered in Drought Plan restrictions.
Dependants	There are no specific needs identified for this group.

### Part 2. Screening questions

#### Introduction

In making a decision as to whether or not there is a need to carry out an equality impact assessment, the public authority should consider its answers to the questions 1-4 which are given on pages 66-68 of this Guide.

If the public authority's conclusion is **none** in respect of all of the Section 75 equality of opportunity and/or good relations categories, then the public authority may decide to screen the policy out. If a policy is 'screened out' as having no relevance to equality of opportunity or good relations, a public authority should give details of the reasons for the decision taken.

If the public authority's conclusion is **major** in respect of one or more of the Section 75 equality of opportunity and/or good relations categories, then consideration should be given to subjecting the policy to the equality impact assessment procedure.

If the public authority's conclusion is **minor** in respect of one or more of the Section 75 equality categories and/or good relations categories, then consideration should still be given to proceeding with an equality impact assessment, or to:

- measures to mitigate the adverse impact; or
- the introduction of an alternative policy to better promote equality of opportunity and/or good relations.

#### In favour of a 'major' impact

- a) The policy is significant in terms of its strategic importance;
- b) Potential equality impacts are unknown, because, for example, there is insufficient data upon which to make an assessment or because they are complex, and it would be appropriate to conduct an equality impact assessment in order to better assess them;
- c) Potential equality and/or good relations impacts are likely to be adverse or are likely to be experienced disproportionately by groups of people including those who are marginalised or disadvantaged;
- d) Further assessment offers a valuable way to examine the evidence and develop recommendations in respect of a policy about which there are concerns amongst affected individuals and representative groups, for example in respect of multiple identities;
- e) The policy is likely to be challenged by way of judicial review;
- f) The policy is significant in terms of expenditure.

#### In favour of 'minor' impact

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- a) The policy is not unlawfully discriminatory and any residual potential impacts on people are judged to be negligible;
- b) The policy, or certain proposals within it, are potentially unlawfully discriminatory, but this possibility can readily and easily be eliminated by making appropriate changes to the policy or by adopting appropriate mitigating measures;
- c) Any asymmetrical equality impacts caused by the policy are intentional because they are specifically designed to promote equality of opportunity for particular groups of disadvantaged people;
- d) By amending the policy there are better opportunities to better promote equality of opportunity and/or good relations.

### **In favour of none**

- a) The policy has no relevance to equality of opportunity or good relations.
- b) The policy is purely technical in nature and will have no bearing in terms of its likely impact on equality of opportunity or good relations for people within the equality and good relations categories.

Taking into account the evidence presented above, consider and comment on the likely impact on equality of opportunity and good relations for those affected by this policy, in any way, for each of the equality and good relations categories, by applying the screening questions given overleaf and indicate the level of impact on the group i.e. minor, major or none.

## Screening questions

1 What is the likely impact on equality of opportunity for those affected by this policy, for each of the Section 75 equality categories? minor/major/none		
Section 75 category	Details of policy impact	Level of impact? minor/major/none
		The Plan as a whole reduces the risk to water supply in critical periods and the Drought Plan provides for normal access to water for household and institutional use during drought conditions and allows exemptions for non-essential restrictions where these could affect specific groups.
Religious belief	There are no specific impacts identified for this group.	None
Political opinion	There are no specific impacts identified for this group.	None
Racial group	There are no specific impacts identified for this group.	Minor There is potential for impacts on specific ethnic groups where business/employment activities could be affected by temporary use bans to restrict water use as identified in the Drought Plan.
Age	There are no specific impacts identified for this group.	None
Marital status	There are no specific impacts identified for this group.	None
Sexual orientation	There are no specific impacts identified for this group.	None
Men and women generally	There are no specific impacts identified for this group.	None
Disability	There are no specific impacts identified for this group.	None - although there are specific needs for this group, the Plan as a whole reduces the risk to supply in critical periods and the Drought Plan provides for normal access to water during drought conditions.
Dependants	There are no specific impacts identified for this group.	None

<b>2 Are there opportunities to better promote equality of opportunity for people within the Section 75 equalities categories?</b>		
Section 75 category	If <b>Yes</b> , provide details	If <b>No</b> , provide reasons
Religious belief		No; there is no opportunity to better promote equality of opportunity.
Political opinion		As above
Racial group		As above
Age		As above
Marital status		As above
Sexual orientation		As above
Men and women generally		As above
Disability		As above
Dependants		As above

<b>3 To what extent is the policy likely to impact on good relations between people of different religious belief, political opinion or racial group? minor/major/none</b>		
Good relations category	Details of policy impact	Level of impact minor/major/none
Religious belief	There will be no impact on this group.	None
Political opinion	As above.	None
Racial group	As above.	None

<b>4 Are there opportunities to better promote good relations between people of different religious belief, political opinion or racial group?</b>		
Good relations category	If <b>Yes</b> , provide details	If <b>No</b> , provide reasons
Religious belief		No; the aims of the Strategy do not create opportunities to better promote good relations.
Political opinion		As above.
Racial group		As above.

**Additional considerations**

**Multiple identity**

Generally speaking, people can fall into more than one Section 75 category. Taking this into consideration, are there any potential impacts of the policy/decision on people with multiple identities? (*For example; disabled minority ethnic people; disabled women; young Protestant men; and young lesbians, gay and bisexual people*).

N/A

Provide details of data on the impact of the policy on people with multiple identities. Specify relevant Section 75 categories concerned.

N/A



### Part 3. Screening decision

If the decision is not to conduct an equality impact assessment, please provide details of the reasons.

All members of society have the potential to benefit from the implementation of the Water Resource and Supply Resilience Plan (WR&SR Plan) which aims to maintain levels of service for water supply nationally and reduce risks related to climate change and increase demand for water. The purpose of the plan is to increase water security for all across Northern Ireland. The Plan proposed will have a positive impact on all, especially those areas which have been identified within the plan who may have a risk during critical weather.

No Section 75 group will be disadvantaged or adversely affected by the Plan proposals.

This form will be included in the Strategic Environmental Assessment (SEA) Environmental Report and provided for public consultation; this will provide an opportunity for interested parties to comment.

A Drought Plan forms part of the WR&SR Plan and this includes a range of measures for addressing different levels of drought.

Drought conditions are infrequent and of short duration and measures usually focus on raising awareness on water use and encouraging voluntary measures to conserve water. The overall aim of the Drought Plan is to ensure that drought conditions do not lead to water shortages that would affect access to water for essential uses for all groups.

In severe drought conditions in some areas there may be a need to restrict customers' water use. The Drought Plan proposes to follow the approach set out in UKWIR's *Managing Through Drought: Code Of Practice And Guidance For Water Companies On Water Use Restrictions – 2013*. This sets out an approach for consultation and exemptions including universal and discretionary exemptions for disabled customers and those on the vulnerable customers' lists.

The Drought Plan includes potential for applying temporary water use bans (TUBs) where drought conditions require. These are restrictions on non-essential use and can include hosepipe and carwash bans. The screening assessment identified that there is potential for these types of restrictions to affect some specific groups such as ethnic groups with potential for economic impacts where employment is dependent on hosepipe or carwash use. These effects were also considered as part of the Strategic Environmental Assessment (SEA) of the Drought Plan.

As part of applying the good practice for Drought Plans outlined in UKWIR guidance which is embedded in the Drought Plan approach, a Communications Plan will be developed for the plan implementation. This will involve consultation to identify discretionary exemptions (in addition to the universal exemptions for disabled and vulnerable customers) that can be applied to avoid impacts on specific groups such as those operating carwash businesses. This approach will also ensure any other vulnerable groups and not already covered in the universal exemptions would be identified. The Communications Plan will set up a formal consultation

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process which would be applied in advance of water restrictions being imposed as part of a formal notification period.

Given this mitigation approach is built into the plan implementation, no Section 75 groups will be disadvantaged or adversely affected by the Plan proposals.

Groups will not be contacted directly to gather information but any interested parties will have the opportunity to comment as part of the statutory procedure.

Any issues identified during the statutory process or during the consultation process relating to any Section 75 group will be considered.

If the decision is not to conduct an equality impact assessment the public authority should consider if the policy should be mitigated or an alternative policy be introduced.

No additional mitigation measures or alternative policies/strategies are considered necessary as those included in the WR&SR Plan and Drought Plan are considered to follow industry good practice as set out in UKWIR's *Managing Through Drought: Code Of Practice And Guidance For Water Companies On Water Use Restrictions – 2013* and that these provide approaches to avoid inequalities and disadvantage to different groups as well as providing a framework for allowing specific individual or organisation requirements to be considered.

If the decision is to subject the policy to an equality impact assessment, please provide details of the reasons.

N/A

All public authorities' equality schemes must state the authority's arrangements for assessing and consulting on the likely impact of policies adopted or proposed to be adopted by the authority on the promotion of equality of opportunity. The Commission recommends screening and equality impact assessment as the tools to be utilised for such assessments. Further advice on equality impact assessment may be found in a separate Commission publication: *Practical Guidance on Equality Impact Assessment*.

### Mitigation

When the public authority concludes that the likely impact is 'minor' and an equality impact assessment is not to be conducted, the public authority may consider mitigation to lessen the severity of any equality impact, or the introduction of an alternative policy to better promote equality of opportunity or good relations.

Can the policy/decision be amended or changed or an alternative policy introduced to better promote equality of opportunity and/or good relations?

If so, give the **reasons** to support your decision, together with the proposed changes/amendments or alternative policy.

Mitigation is embedded into the approach for implementing the Drought plan as outlined above.

### HUMAN RIGHTS ACT ASSESSMENT

## Appendix F.0 Regulatory Impact Assessment Screening Report

# 1. Introduction

## What is a Regulatory Impact Assessment?

A Regulatory Impact Assessment (RIA) is a key element of policy development and is a fundamental tool in the Northern Ireland Better Regulation Strategy<sup>7</sup>. It is designed to assist the consideration of the potential economic impact of the WR & SR Plan for Northern Ireland and is considered alongside other tools to assess social and environmental impacts on plan development. The scope of the RIA includes all business sectors including charitable, voluntary and social enterprise sectors, hereafter collectively called business<sup>1</sup>.

## 1.1 Water Resource and Supply Resilience Plan (WR & SR Plan) and Drought Plan

### 1.1.1 Background and Intervention Requirement

'Schedule 1 of the Water and Sewerage Services (Northern Ireland) Act 2016 aligns the existing requirements on NI Water to prepare, review and revise water resources management plans and drought plans under Articles 70 to 73 of the 2006 Order so that NI Water may prepare a single plan instead of two, which may be known as a water resource and supply resilience plan. The single plan shall be reviewed every two years and revised at least every six years, unless the Department permits a longer period of up to eight years'.

The main focus of the RIA is on the Drought Plan element of the WR & SR Plan as it may have a negative impact on business. The Water Resource element is likely to have a positive overall impact on everyone by supplying a greater resilience in the network.

### 1.1.2 WR&SR Plan Objectives

The WR & SR Plan aims to ensure a secure, resilient water supply network that will provide protection against drought and emergency situations. The objective is to reduce the vulnerability of NI Water's services and increase resilience of its water assets in order to continue to meet the projected demand for water. The Plan intends to identify a variety of options for the short, medium and long time to ensure an equal supply demand balance and provide more resilient system to maintain a consistent level of supply across all of NI both during normal climatic conditions but also during more extreme weather events which are becoming increasingly more challenging. The Plan also includes a range of measures to deal with drought throughout Northern Ireland during the plan period.

### 1.1.3 WR&SR Plan Options

The Preferred Plan includes provision of a number of transfer pipelines, and water efficiency (demand management) measures. These will address all the Supply Demand deficits in Northern Ireland while providing additional resilience to the water supply system. The security of supply of Northern Ireland's water supply system will be improved for the next 25 years. The Preferred Plan has been selected following a detailed analysis of options and combinations of options as plan alternatives including comparison with the 'no plan' scenario.

A Drought Plan forms part of the WR&SR Plan and this includes a range of measures for addressing different levels of drought. In severe drought conditions in some areas there may be a need to restrict customers' water use. The Drought Plan proposes to follow the approach set out in UKWIR's *Managing Through Drought: Code of Practice and Guidance for Water Companies On Water Use Restrictions – 2013*. This sets out an approach for consultation and exemptions including universal and discretionary exemptions for disabled customers and those on the vulnerable customers' lists. The approach will also be applied to identify the impact on business and where possible provide exemptions for businesses or groups who could be affected by water restrictions.

### 1.1.4 WR&SR Plan

A wide range of possible resource supply and demand management options were identified for meeting the predicted supply demand deficit. These were subject a screening process detailed in the WR&SR Plan and the

<sup>7</sup> <http://www.detini.gov.uk/better-regulation-strategy>

SEA Environmental Report. The screening process took into consideration a range of environmental, economic, technical feasibility and promotability issues.

Demand management options were screened out where cost-feasibility and promotability issues were identified. The assessment of all options is detailed in an unconstrained options report which was made available to statutory consultees at a workshop during the options screening and SEA scoping process.

Options screening identified 'feasible options', and from these feasible options a number of different plan scenarios were considered as part of developing the Preferred Plan.

Following the screening process, the feasible options were assessed further in terms of potential environmental and social impacts including the local economy based on the preliminary design information, environmental baseline data and potential mitigation.

A valuation of the construction capital costs (CAPEX) and annual operational costs (OPEX), including environmental and social costs and benefits to capture wider societal costs, was undertaken for each option.

Modelling of the constrained list of feasible options informed the selection of options for the Preferred Plan. An EBSD model, as used by other UK water companies for optimising their water resource plans, was used. This is based on a dynamic programming algorithm to evaluate a range of candidate options in order to arrive at an optimum solution. The model aimed to produce the least cost set of options to meet the supply demand deficit and was restricted to selecting options which can be developed in time to meet the deficit. The model was also used as a basis for generating alternative plan scenarios by either restricting the candidate options and prioritisation.

### **Do minimum baseline scenario**

The development of the baseline environment and supply performance was considered (i.e. the potential effects) over the Plan period without the Plan in place. This takes into account the pressures and trends that might influence the baseline environment and the change in demand. This was identified as a continuation of the current situation without the additional investment in the plan proposals and was referenced as the 'do minimum' scenario.

The model combined the predicted population and household growth and the anticipated changes in water consumption within Northern Ireland in order to calculate the supply-demand balance of the current water supply situation without any additional investment in water supply, demand management or leakage reduction. It also takes into account climate change effects and the uncertainty in the population and consumption growth predictions. The resulting Supply Demand Balance (SDB) for demand years 2014/15, 2024/25, 2034/35 and 2042/43, for each of the SDB scenarios; normal year, dry year, dry year critical period and winter critical period, are presented in the WR&SR Plan.

### **Selection of Preferred Plan**

A range of Plan Scenarios were considered as part of selecting the WR&SR Plan including least cost and combinations which provided least risk for deliverability and lead in time and low environmental impact and carbon cost combinations.

A range of water resource supply and resilience scenarios which took into account a combination of these inputs were considered for the Preferred Plan.

Six core scenarios for meeting the supply demand deficit were compared. Only one option other than demand management was considered feasible for the South WRZ, the Castor Bay WTW to Ballydougan transfer. This option was therefore common to all plan alternatives meeting the deficit over the plan period.

Demand management options were grouped into three water efficiency packages. Water Efficiency Package 1 was selected by the model for all scenarios; the sub- options included in this package were:

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- Targeted non-household water audits (key accounts)
- Schools water audit and retrofit
- Hotel & Hospitals water audit and retrofit
- Farm Audits

All demand management options were considered low risk, however Water Efficiency Package 1 options were considered overall to be more beneficial due to potential water and associated energy and carbon savings. They also provide potential for raising water conservation awareness. Water Efficiency Package 2 and 3 were not selected by the model due to high costs and lower reductions in the supply demand balance compared to Water Efficiency Package 1.

Alternative water resource options for meeting the deficit were considered for the West WRZ. These alternatives were considered through a multi-criteria analysis including supply resilience, deliverability and climate change adaptability as well as meeting SEA objectives. This multi-criteria analysis is reported in Chapter 13 of the WR&SR Plan and summarised in **Error! Reference source not found.** below.

Environmental, social and economic aspects were taken into account in the EBSD modelling through E&S and carbon cost input to the Average Incremental Social Costs (AISC).

### Assessment of Alternative Plans

The 6 assessment scenarios are summarised in **Error! Reference source not found.** below.

**Table 1-1 Alternative supply resource scenarios**

Plan Scenario	WRZ	Delivery	Option Name
A1	All*	2017/18	Water Efficiency Package 1
	West	2018/19	Carmony to Strabane TM
	South	2019/20	Castor Bay WTW to Ballydougan TM
A2	All*	2017/18	Water Efficiency Package 1
	South	2019/20	Castor Bay WTW to Ballydougan TM
	West	2018/2019	Derg Bankside Storage
A3	All*	2017/18	Water Efficiency Package 1
	South	2019/20	Castor Bay WTW to Ballydougan TM
	West	2019/20	Killyhevlin to Lough Bradan TM
A4	All*	2017/18	Water Efficiency Package 1
	South	2019/20	Castor Bay WTW to Ballydougan TM
	West	2019/20	Lough Neagh, New WTW and Trunk Main Transfer
A5	All*	2017/18	Water Efficiency Package 1
	South	2019/20	Castor Bay WTW to Ballydougan TM
	West	2022/2023	New Groundwater Sources in Fermanagh
A6	All*	2017/18	Water Efficiency Package 1
	South	2019/20	Castor Bay WTW to Ballydougan TM
	West	2022/2023	Caugh Hill to Strabane TM

\*E&S modelled costs based on WRZ 5 &7

Following the multi criteria assessment, scenarios A1-A3 were taken forward for further appraisal. These options are discussed in more detail in Section 13.6.5 of the WR & SR Plan.

Scenarios A4-A6 were eliminated as potential plan scenarios. Scenario A4 had the longest lead time due to the new source and water treatments works required at Lough Neagh. Scenario A5 included the new groundwater sources in Fermanagh which were associated with greater total environmental risk and carbon footprint reflected in the E&S costings. Scenario A6, despite also being a pipeline option similar to Scenarios A1 and A3 has a higher environmental risk due to higher carbon costs/footprint.

All 7 of NI Water WRZs are identified as having sufficient water available for the Dry Year Annual Average. However, the critical period analysis has identified that for short periods, 2 of the 7 zones which are the South and West WRZs, have potential deficits that require investment to ensure supplies are maintained for the planned level of service.

The plan makes the following recommendations:

### Water Resource Recommendations

- Castor Bay to Dungannon Transfer
- Carmoney to Strabane Transfer

### Demand Management Recommendations (across all of Northern Ireland)

- Targeted non-household water audits (key accounts)
- Schools water audit and retrofit
- Hotel & Hospitals water audit and retrofit
- Farm Audits

#### 1.1.5 Drought Plan

Droughts are a naturally occurring phenomenon and occur when lower than average rainfall causes a shortage of water. This shortage affects both the natural environment and sectors such as agriculture and water supply. The duration, timing and intensity of a drought can vary considerably, and these factors will combine to affect different sectors in different ways.

The Water and Sewerage Services (Northern Ireland) Act 2016 is the central piece of legislation that details what measures Northern Ireland Water can take to facilitate drought management. Article 116 enables NIW to apply temporary hosepipe bans and Articles 137-144 and Schedule 5 provide a means for NIW to apply to the Department for Infrastructure (DfI) for a Drought Order.

A Drought Order can:

- a) Allow any person (such as NIW) to abstract water from a specified source (subject to conditions);
- b) Give NIW permission to prohibit or limit certain activities of water use (e.g. prohibiting running of privately-owned car washes). DfI must give a Direction if this provision is sought (Article 138(1)(b));
- c) Allow NIW to discharge water to a specified place (subject to conditions);
- d) Authorise DAERA (NIEA) to prohibit or limit abstraction from a specified source by parties other than NIW if it is satisfied that such abstraction is seriously limiting NIW's supply;
- e) Suspend or modify any restrictions or obligations on NIW or any other person (subject to conditions) regarding:
  - i) abstraction;
  - ii) discharging;
  - iii) supplying;
  - iv) filtration or other treatment of water;
- f) Authorise DAERA (NIEA) to suspend or vary any specified consent regarding effluent discharge in water (by NIW or anyone else). Any suspension or variation will need to be assessed by (DAERA) NIEA.



In developing this plan NIW have considered the range of powers available. The company has decided not to consider actions that would affect the quality of water supplied to customers to the extent that the company's obligations would be compromised. The ways a Drought Order would be used is set out under the section on drought options.

**Drought Order process for NIW**

The following steps are a very high level summary of the steps in the process of applying for a drought order:

1. Routine monitoring suggests potential for deficiencies in water supplies due to exceptional shortage of rain;
2. Commence liaison with stakeholders and regulators and agree to monitor the situation whilst mobilising a drought management group;
3. If the situation continues to develop, update draft application documents and submit to DAERA (NIEA) for their comment prior to making a formal application to DfI and advertising the application;
4. DfI consider the application and any associated objections make within a 7-day objection period. A hearing may be required Determination of the Drought Order follows;
5. If the order is granted NIW can undertake enabling works and operation in line with the Order. An order can last for up to six months, extendable by application for another three months.

Droughts can have a local to national extent, and can be characterised as mild to severe. The range and unpredictability are a challenge for developing a definitive plan of actions, which will apply to all situations. The Drought Plan describes the drought management process designed to accommodate this in terms of actions escalating from routine monitoring activities to the inception of a drought incident team, who will shape the actions needed to respond to the event as it develops. The Drought Plan allows a flexible approach based on the precise circumstances of the time. It depends on timely routine data collection and monitoring, clearly defined responsibilities and active communications, within NI Water and with stakeholders and customers (see Table 1.2).

**Table 1.2 Drought Stages**

<b>Drought actions</b>	<b>Dry Year</b>	<b>Developing Drought</b>	<b>Drought</b>	<b>Severe Drought</b>
<b>Monitoring data</b> Rainfall River and reservoir levels SDB Environmental conditions	List baseline monitoring activity	List increased monitoring and data gathering as drought situation becomes more apparent	List increased monitoring and data gathering as drought situation worsens in preparation for drought orders	List increased monitoring and data gathering as drought situation worsens in preparation for drought orders
<b>Triggers</b> Rainfall River and reservoir levels Distribution Input (DI) SDB Environmental conditions	Describe triggers that could be used to identify normal risks – to be used to identify the end of a drought	Describe triggers used to identify drought situation	Describe triggers used to identify drought situation	Describe triggers used to identify drought situation
<b>Management actions</b> Communications Demand Supply	Normal operation of sources – company approach	Describe phasing of drought actions including communications	Describe phasing of drought actions including	Describe phasing of drought actions including

	to minimising costs, carbon, etc.	plan activities. Management of sources to achieve DO's under dry year conditions	communications plan activities	communications plan activities
<b>Mitigation actions</b> Environmental Customers			Describe possible mitigation activities needed as drought actions are introduced	Describe possible mitigation activities needed as drought actions are introduced
<b>Example NIW Actions</b>	Routine monitoring	Increase WL monitoring Increased customer engagement Initiate planning for drought orders Initiate engineering options	Increased communications Enhanced leakage reductions Apply for Drought Orders Hose pipe bans	Determine and implement Drought Orders

The Drought Plan has been developed through a process, which assesses the issues within each Water Resource Zone (WRZ) and identifies the options to mitigate against drought risks. This has been assessed against each functional group of sources, defined where a single set of drought control triggers or curves can represent a collection of sources. This may be at finer detail than WRZ level.

Solutions have been developed locally for each functional group of sources and then crossed checked for consistency and to ensure measures, such as enhanced transfers, are achievable in drought conditions.

The summary of the stages in developing the drought plan is as follows:

- Characterise the sources and drought response
- Review history of drought issues within the zone;
- Identify options for drought management actions;
- Develop control curves using the drought management actions (these help to understand effectiveness of actions);
- Identify monitoring requirements for production, water resource and environmental indicators.

Four broad types of measures are identified in the Drought Plan:

- 1) Demand management actions e.g. hosepipe bans and customers being requested to use less water;
- 2) Redistribution of water within the existing network e.g. rezoning of water;
- 3) Increased abstractions but within existing licence conditions; and
- 4) Abstractions outside of the licence (requiring drought orders) such as increase abstractions or reduce release of compensation flows from reservoirs into rivers.

There are two types of demand side drought actions that have been identified as standardised measures across all groups – see **Error! Reference source not found.**

**Table 1.3 Standardised Demand Side Drought Actions**

Drought Stage	Drought Action*
---------------	-----------------

3 - Drought Warning (Amber)	3% demand cutback from the introduction of hosepipe bans
4 – Drought (Red)	2% demand cutback from the introduction of other customer restrictions for non-essential use

For each functional group of sources, potential types of measures and actions are recommended for each drought level. Given the rarity and short duration of drought measures the focus has been to assess potential significance of these impacts and the requirement for mitigation measures in terms of the SEA objectives on biodiversity, population, economy and health (incorporating this RIA, as well as the Equalities Impact Assessment and Rural proofing requirements).

**1.1.6 Supply Resilience Enhancements**

The Plan identified a number of resilience issues particularly limited interconnectivity in key areas, water quality issues at source and over reliance on a chemical with limited availability for water treatment. The resilience options were assessed similarly to the water resource options. The potential impacts could be managed through appropriate route selection, investigation and mitigation to minimise long term impacts from pipeline construction.

The Resilience Options to be considered by NI Water during the Plan period are listed as follows:

- Lough Fea WTW & Moyola WTW Resilience Link
- Upgrade Killyhevlin WTW
- Seagahan to Clay Lake Transfer
- West WRZ Resilience Link
- Ballinrees Resilience Link

**1.2 Main effects of the Plan on Stakeholder groups**

Northern Ireland Water has worked closely with both domestic and business customer stakeholders to ensure the secure and reliable supply of clean water for all. The main impacts to these stakeholder groups are illustrated in Table 1-2.

**Table 1-2 Main Effects on Stakeholders**

Stakeholder Group	Positive	Negative
Domestic	<ul style="list-style-type: none"> <li>• Secure and reliable supply of clean water over the plan period of 25 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction Impacts (Localised and short term impacts e.g. noise and traffic disruption)</li> </ul>
Business	<ul style="list-style-type: none"> <li>• Secure and reliable supply of clean water over the plan period of 25 years.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for certain non-exempt groups to be impacted differently by the non-essential water restriction measures which could be applied as short term measures within Drought Plan.</li> <li>• Construction Impacts (Localised and short term impact e.g. noise and traffic disruption)</li> </ul>

## 2. The WR & SR Plan and its impact on business

### 2.1 Risk Assessment

The main focus of the RIA is on the drought plan element of the WR &SR Plan in terms of the potential impact on business from measures which might be required in certain drought conditions to restrict non-essential water use. The Water Resource element of the plan is likely to have a positive overall impact on everyone by providing greater long term security of supply and improved resilience in the network over the plan period.

### 2.2 Costs

#### 2.2.1 Preferred WR&SR Plan

The Preferred Plan has been assessed according to its direct financial impact through the individual scheme costs for construction and operation identified through NPV and the combined costs of the Plan schemes. Monetisation of environment and social costs was also undertaken as outlined below.

For supply side and demand management options non-monetised impacts have been considered for individual options and for the overall impact of the plan with the combination of options this includes, through the Strategic Environmental Assessment and Habitats Regulatory Assessment, Rural Needs Impact and Equalities assessment required for the plan.

#### Supply Side Options

In addition to construction and operational costs, the wider societal costs from impacts on local people and the impacts on biodiversity and ecology, landscape amenity, on affected road users through construction impacts (traffic congestion costs) and on all people through energy and climate change (carbon footprint) have been monetised and included in the assessment.

#### Demand Management options

In addition to the construction and operational costs, societal costs for demand management are limited to those impacting all people through energy and climate change.

#### 2.2.2 Drought Plan

A Drought Plan forms part of the WR&SR Plan and this includes a range of measures for addressing different levels of drought. In severe drought conditions in some areas there may be a need to restrict customers' water use. The Drought Plan proposes to follow the approach set out in UKWIR's *Managing Through Drought: Code of Practice and Guidance for Water Companies On Water Use Restrictions – 2013*. This sets out an approach for consultation and exemptions including universal and discretionary exemptions for disabled customers and those on the vulnerable customers' lists and other groups and business that could be affected by restrictions on water supply. The Drought Plan is not subject to economic assessment but is focused ensuring that drought conditions do not lead to water shortages that would affect access to water for essential use for all customer groups.

The Drought Plan includes potential for applying temporary water use bans (TUBs) where severe drought conditions require this to maintain essential supply. These can involve restrictions on non-essential use and can include hosepipe and carwash bans. The SEA and equalities screening assessment identified that there is potential for these types restrictions to have impacts on some specific business groups, for example, where employment is dependent on hosepipe, carwash use or irrigation.

The Drought Plan includes the best practice approach outlined in UKWIR guidance including the development of a Communications Plan for the plan implementation. This will involve consultation to identify the impact on businesses and where possible, discretionary exemptions (in addition to the universal exemptions for disabled and vulnerable customers) that could be applied to avoid impacts on specific groups such as those operating

carwash or other businesses such as farms or industrial businesses. This approach will also ensure impacts on business and the wider economy are minimised. The Communications Plan will set up a formal consultation process which would be applied in advance of water restrictions being imposed as part of a formal notification period.

### 2.3 Benefits

#### 2.3.1 WR&SR Plan

Overall, it can be assumed that the plan will benefit the economy of Northern Ireland given the increased level of security and resilience of water supply for customers in the future.

#### 2.3.2 Drought Plan

The Drought plan provides a basis for managing low frequency events and a process for managing the effects of temporary measures to minimise effects on non-essential uses of water.

### 2.4 Key Assumptions, Sensitivities, Risks

The key assumptions are that demand will increase slightly in the next 25 years, that there will be adverse impact from future sustainability reductions imposed by NIEA in various catchments that NIW abstract water from. Sensitivity analysis has been undertaken on the recommended solution to ensure it is robust enough to deal with the impact of most of these issues. The key risk will be funding for all the required schemes and the impact of any future sustainability reductions which could affect the baseline and therefore also future deficit.

### 2.5 Cross Border Issues

Irish Water is currently developing its equivalent study which will be the first of its kind for them. This report will not be ready for publication until 2018. The proposals for this plan will not impact on IW's plan. This plan has been developed in a similar way to water resource management plans in the rest of the UK.

### 2.6 Implementation, Compliance and Enforcement

An action plan for implementation with approaches for mitigation is set out in the SEA Environmental Report this includes approaches for detailed scheme development and implementation to ensure these meet good practice and comply with regulatory and planning requirements in relation to minimise adverse impacts on the local economy.

### 2.7 Monitoring, Evaluation and Review

The development of the Communications Plan for the Drought Plan is identified as a key action in the SEA Environmental Report monitoring plan to identify and address potential impacts to business and different groups from non-essential use restrictions. This will include a consultation process.

The RIA is considered to be a live document which can be regularly reviewed and updated. This can feed directly into the plan review and SEA assessment cycle.

### 2.8 WR& SR Plan Summary of RIA Screening

The WR&SR is considered to provide an overall benefit to customers through the improved supply security and resilience in the context of changing demand and climate change pressures. The Drought Plan includes provision for addressing different drought event including low probability drought events which could require non-essential use restrictions and these are identified as having a potential effect on some businesses.

However, the Drought Plan implementation includes development of a communications plan which provides a basis for consultation with business groups and identification of measures to minimise effects where possible.

## Appendix F.1 Human Rights Proforma

### Human Rights Act Impact Assessment Proforma

This proforma will help you to articulate any human rights issues in the policy/proposal that you are working on. It is necessary for you to have read the OFMDFM guidance on human rights entitled “Get in on the Act; a practical guide to the Human Rights Act for public authorities in Northern Ireland” before completing this proforma.

If the policy/proposal is relevant to some rights but does not interfere with or limit them, your assessment must be signed off by a Senior Responsible Officer (Grade 7, equivalent or above). If you find that it does interfere with or limit one or more of the Convention rights, and your Senior Responsible Officer agrees, you must seek legal advice, even if it is considered that the interference or limitation is justified.

This proforma is available at [www.ofmdfmi.gov.uk/human-rights](http://www.ofmdfmi.gov.uk/human-rights) If you fill in the form electronically, there is no restriction as to the amount you can type in each box.

Your answers in the rest of this proforma will help you draft a clearer note to your legal advisor.

#### 1. Policy title and aims

Please state the title and objective of the policy/proposal you are working on.

Water Resource and Supply Resilience Plan (2015 – 2021).

The WR & SR Plan is a combined Water Resource Management Plan and Drought Plan. The aims of this combined plan is to;

- a) Estimate of the quantities of water required to meet its obligations;
- b) Set out measures which the water undertaker intends to take or continue for the purpose of planning to manage and develop water resources so as to be able to meet its obligations;
- c) Define likely sequence and timing for implementing the measures;
- d) Set out the measures the water undertaker might need to take to restrain demand for water;
- e) Set out the measures the water undertaker might need to take to obtain extra water from other sources;
- f) Define how the water undertaker will monitor the effects of the drought and of the measures taken under the Drought Plan; and
- g) Such other matters as directed by DfI.

The Water and Sewerage Services (Northern Ireland) Act 2016 requires NI Water to produce a Water Resource Management Plan on a maximum period of a six yearly basis and a Drought Plan on a 3 yearly basis. (Schedule 1) of the order has been revised in 2016 to bring in a requirement to combine Water Resource Management Plans and Drought Plans. This is achieved through an overarching Water Resource and Supply Resilience Plan (hereafter referred to as 'the Plan' or WR & SRP) in line with the Price Control period (PC15 – 2015 to 2021).The). The plan outlines a range of options and scenarios to balance supply and demand, increase the resilience of its water assets and reduce the vulnerability of its supply in all areas. yearly basis and a Drought Plan on a 3 yearly basis. (Schedule 1) of the order has been revised in 2016 to bring in a requirement to combine Water Resource Management Plans and Drought Plans. This is achieved through an overarching Water Resource and Supply Resilience Plan (hereafter referred to as 'the Plan' or WR & SRP) in line with the Price Control period (PC15 – 2015 to 2021).The). The plan outlines a range of options and scenarios to balance supply and demand, increase the resilience of its water assets and reduce the vulnerability of its supply in all areas.

### 2. Rights which the policy/proposal engage

Go through each of the rights detailed in the table below. For each one consider whether the policy/proposal engages the right, i.e. how the policy/proposal you are working on could involve the right. Explain how the right is engaged.

*Please note that the rights have been abbreviated so you should see the relevant Article in the Guide referred to above for the full title and explanation of the right.*

Right	Yes/No	Explanation
Article 2 Right to life	No	The Plan aims to ensure a secure and reliable supply of water for all customers, and will actually aim to improve the quality of water benefitting human health.
Article 3 Prohibition of torture, inhuman and degrading treatment	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not result in any torture, inhuman or degrading treatment.
Article 4 Prohibition of slavery and forced labour	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not result in forced labour.
Article 5 Right to liberty	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not impede rights to liberty.
Article 6 Right to a fair trial	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will have no impact on human rights to fair trial.



Right	Yes/No	Explanation
Article 7 No punishment without law	No	The Plan aims to ensure a secure and reliable supply of water for all customers will not result in punishment without law.
Article 8 Right to respect for private and family life	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not impede privacy or family life.
Article 9 Freedom of thought conscience and religion	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not interfere with freedom of thought or religion.
Article 10 Freedom of expression	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not interfere with freedom of expression.
Article 11 Freedom of assembly and association	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not hinder freedom of assembly or association.
Article 12 Right to marry and found a family	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not impact the human right to marry and found a family.
Article 14 Prohibition of discrimination	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not discriminate.
Protocol 1, Article 1 Right to property	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not prevent the right to property.
Protocol 1, Article 2 Right to education	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not impede the right to education.
Protocol 1, Article 3 Right to free elections	No	The Plan aims to ensure a secure and reliable supply of water for all customers and will not impact the right to free election.

If you have answered yes to any of these questions you must complete the rest of the proforma. If you have answered no to all of the questions, you may proceed to Question 9.

**3. Rights which the policy/proposal interferes with or limits**

Will the policy/proposal interfere with or limit any of the rights you identified as being engaged? If so, explain how the right is interfered with or limited.

You should note that interference could be a negative impact on a right or a failure to take positive action where this is required under the Article in question. For further guidance on which Articles require positive action, please consult the Guide.

Article	Interfered with or limited? Yes/No	What is the interference/limitation

**4. Those affected by the interference/limitation**

Identify who could be affected by the interference or limitation, e.g. sections of society or people with certain beliefs or opinions, and explain how they could be affected.

It will help in identifying interferences or limitations to think about all the people who could be affected and be seen as a victim within the Human Rights Act.

Who could be affected?	How could they be affected?

**5. Legal basis for interference/limitation**

Is there a law which allows you to interfere with or limit the rights identified in Question 4?

Any interference with or limitation on a Convention right must have a legal basis. You therefore need to establish whether there is a law which allows the proposed interference or limitation.

*You may need legal advice to clarify this.*

Relevant legislation:

Alternatively, the policy/proposal may involve the creation of a new law which allows for the interference or limitation. If this is the case, please detail and explain in the box below:

**6. Purpose of the policy/proposal**

Even if the interference or limitation in the policy/proposal is according to the law, there are further conditions which must be met. The purpose of the policy/proposal must pursue a legitimate aim or fall under one of the specific exceptions in the Article in question.

Consider each of the Articles which the policy/proposal will interfere with or limit, and for each one specify the exception or legitimate aim which allows the interference or limitation and explain why.

*If you are unsure of the exceptions or legitimate aims which are applicable for the rights interfered with or limited by the policy/proposal you are working on, you should refer to the text of the Convention and the Guide.*

<b>Article</b>	<b>Exception / Limitation</b>	<b>Explanation</b>

**7. Necessary in a democratic society**

Articles 8, 9, 10 and 11 specify that interferences or limitations must be necessary in a democratic society. If the policy/proposal interferes with or limits one of these rights, detail in the table below how the right is necessary in a democratic society i.e. does it fulfil a pressing social need?

*You may need to speak to the Senior Responsible Officer for clarification of this.*

<b>Article affected</b>	<b>Explain why it is necessary in a democratic society</b>

**8. Proportionality**

Any interference with or limitation on a Convention right must be proportionate, i.e. the policy/proposal must interfere with or limit a right no more than is absolutely necessary to achieve its aims. For each Article which the policy/proposal interferes with or limits, explain how the interference or limitation is proportionate.

*For further information on proportionality please consult the Guide.*

<b>Article affected</b>	<b>Explain why the interference / limitation is proportionate</b>

**9. Article 14 equality issues**

Even if it does not interfere with or limit a right or freedom, could the policy/proposal result in people being treated differently in relation to any of the Convention rights? Article 14 does not allow discrimination in the exercise of any of the other Convention rights.

*For further information on Article 14, please refer to the relevant pages in the Guide*

<b>Convention Article affected</b>	<b>How are people treated differently?</b>	<b>Is this justifiable?</b>
14	No	

## Draft Water Resource & Supply Resilience Plan

You should now have a clearer view about the policy/proposal and the possibility of it engaging or interfering with Convention rights and freedoms.

Please ensure the proforma is also signed by your Senior Responsible Officer and if there is any possible interference or limitation refer to your legal advisor for further action and advice.

Please tick the statement that applies, and sign below.

- a) The policy/proposal does not engage any Convention rights.
- b) The policy/proposal does engage one or more of the Convention rights, but does not interfere with or limit it/them.
- c) The policy/proposal interferes with or limits one or more Convention rights and legal advice is being sought.

Countersign, hold copy with policy papers and refer to your legal advisor.

Signed by \_\_\_\_\_ (Official)

Date \_\_\_\_\_ Grade \_\_\_\_\_

Signed by \_\_\_\_\_ (Senior Responsible Officer)

Date \_\_\_\_\_ Grade \_\_\_\_\_

**Human Rights Act Referral to Legal Services Proforma**

FAO: \_\_\_\_\_ From: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please see the attached Human Rights Act Impact Assessment Proforma for the following proposal/policy.

*Title and Objective of Policy/Proposal:*

I have identified the following rights as being interfered with/limited by this policy/proposal.

\_\_\_\_\_

I would be grateful for your advice on this matter. All relevant papers are attached.  
Your contact in this Department is:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Tel: \_\_\_\_\_ Email: \_\_\_\_\_

## Appendix G. Rural Needs Impact Assessment

### Name of Organisation:

NI Water

### Title of Strategy, Policy, Plan or Public Service:

Water Resource and Supply Resilience Plan

### Define the Issue:

The Water and Sewerage Services (Northern Ireland) Act 2016 requires Northern Ireland Water to produce a Water Resource Management Plan on a maximum period of a six yearly basis and a Drought Plan on a 3 yearly basis. (Schedule 1) of the 2006 Order has been revised in 2016 to bring in a requirement to combine Water Resource Management Plans and Drought Plans. This is achieved through an overarching Water Resource and Supply Resilience Plan (hereafter referred to as 'the Plan' or WR & SR Plan) in line with the Price Control period (PC15 – 2015 to 2021). The plan outlines a range of options and scenarios to balance supply and demand, increase the resilience of its water assets and reduce the vulnerability of its supply in all areas.

The WR & SR Plan is a combined Water Resource Management Plan and Drought Plan. The aims of this combined plan is to;

- a) Estimate of the quantities of water required to meet its obligations;
- b) Set out measures which the water undertaker intends to take or continue for the purpose of planning to manage and develop water resources so as to be able to meet its obligations;
- c) Define likely sequence and timing for implementing the measures;
- d) Set out the measures the water undertaker might need to take to restrain demand for water;
- e) Set out the measures the water undertaker might need to take to obtain extra water from other sources;
- f) Define how the water undertaker will monitor the effects of the drought and of the measures taken under the Drought Plan; and

Such other matters as directed by DfI.

DAERA guidance indicates that a policy should treat rural areas in a fair and reasonable way and not inequitably in comparison with urban areas. The 2005 NISRA Report on the Interdepartmental Urban-Rural Definition Group defined a rural area is a settlement with a population of fewer than 4,500.

Under the proposals outlined in the consultation our options would not be inequitable on any specifically rural communities using the DAERA definition.

Many of our supply and resilience options are in rural locations, particularly in the West of the province and include enhancement to existing water treatment works, additional pumping stations and treated water trunk mains. Many trunk main pipeline routes pass through town centres and urban areas. The pipeline routes, although indicative at this stage are approximately 50:50 in terms of construction within open countryside compared to urban or within /road corridor development. The construction phase for the trunk mains installation will involve some disruption to land use and to local traffic in both rural and urban areas, however this will be temporary and once completed the pipelines will be buried structures and land use will be restored. No long term detriment to rural areas and communities is expected.

Demand management options also form part of the WR&SR Plan and these include offering water efficiency audits for farms as well as school and businesses. These demand management options are all voluntary and are offered to a range of sectors urban and rural. They can provide wider benefits for participants in addition to water efficiency and will be available nationally not only in the deficit water resource zones. They are therefore not considered to have differential or detrimental effect on rural areas.

The WR&SR Plan benefits to supply reliability in terms of maintaining levels of service, improving supply resilience in the context of climate change and demand increase are expected to apply to rural areas and communities as well as the urban population.

Drought planning actions depend on the severity of drought conditions but measures will apply to all business sectors and residents in urban and rural areas across the affected zones where necessary and will not be differential for rural areas.

As part of the consultation process on the draft WR&SR Plan and SEA Environmental Report, any comments on impacts on rural areas and communities will be considered and taken into account in the finalisation of the plan.

### **Understand the situation:**

It is not anticipated that there will be any major difference in the impacts at a local level than at regional level, with the exception of construction disturbance including local traffic disruption and land use impacts, however these impacts will be temporary short term related to pipeline construction.

It was not considered necessary for pre-consultation meetings. The statutory consultation period for the draft WR&SR Plan and SEA will provide an opportunity for interested parties to express views on draft plan proposals and mitigation measures. Information and feedback from these will be considered when developing the final Plan.

The formal consultation phase was preceded by a series of discussions with a number of key public sector stakeholders involved in the water industry. This was to facilitate the consideration of each of the proposals across the industry and to highlight the potential impact both locally and strategically.

We have used information from a wide range of sources in developing our proposals including the Water Resource and Supply Resilience Technical Plan Guidance. Baseline information included: population, health, settlement and socio-economic data and mapping, land use, landscape and amenity value and environmental designations and habitats. This is described in the SEA Environmental Report. The assessment draws on experience from similar measures and schemes implemented in Northern Ireland or elsewhere in the UK.

It is considered that sufficient evidence has been considered. There are no areas of uncertainty in relation to level of impact on rural communities. The detailed routing and timing of pipeline works will be subject to further planning and design studies and consultation following good practice and regulatory requirements.

### **Develop and appraise the options:**

During the development of the plan proposals we considered the impact on rural areas that would result from the plan options. This formed part of the evaluation process which was applied to a long list of options as part of our screening process to determine a feasible options list for the draft plan. The impact on rural and urban areas was assessed as part of the environmental assessment of the feasible options and is detailed in our Dossier Reports and was part of the SEA for the plan as a whole – mitigation measures were identified for individual options and for the plan.

No significant long term impacts have been predicted for rural areas/communities.

### **Prepare for delivery:**

The outcome of the policy is an increased and more balanced water supply across Northern Ireland therefore local rural objectives should be met through the provision of enhanced water infrastructure and supply. The effect on rural land, access to rural amenities, disruption to rural areas, tourist attractions important to rural economies etc. were assessed for each feasible option considered as part of the WR&SR Plan.

It is not considered that specific generic actions are required to mitigate against impacts in rural areas. However, we do recognise that in some instances a small number of areas may experience some difficulties during the construction works associated with the implementation of schemes and specific mitigation measures will be identified as part of the good practice approach to planning and construction of the proposed schemes to minimise local construction impacts on individuals or communities.

### **Implementation and Monitoring:**



No significant impacts have been identified specific to rural areas, therefore specific plan level mitigation measures were not identified and monitoring cannot be carried out. However, it is expected that good practice approaches are applied in planning and implementing the schemes to minimise impacts during construction and ensure that route alignment or site locations avoid long term impacts through appropriate reinstatement.

**Evaluation and Review:**

As evidenced above the impact of our policy will not inequitably affect rural areas as defined by DAERA, i.e. settlements less than 4,500 people.

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<sup>i</sup> It should be noted that this is a live document which can be updated at a later date as required.