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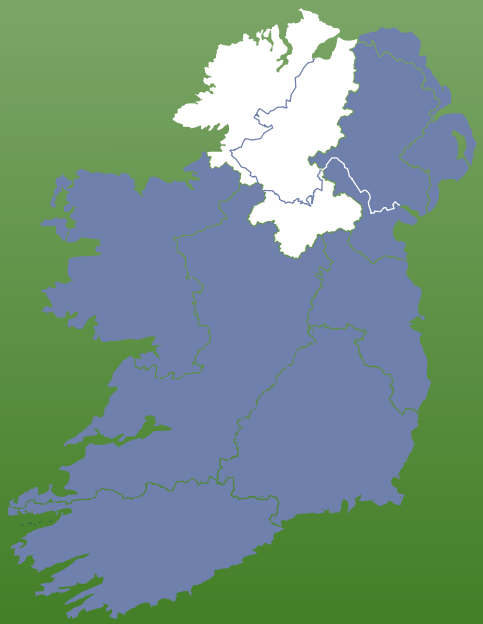
Water Framework Directive River Basin Management Plans and Programmes of Measures - North Western IRBD

Habitats Directive Article 6 Assessment

Appendix II



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

north western international river basin district

INTERREG IIIA

Project part financed by the European Union

North South Shared Aquatic Resource (NS SHARE)

Appendix II Habitats Directive Article 6 Assessment - Screening Table for additional measures under the Draft RBMP for the NWIRBD

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

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Additional measures for Point and Diffuse Sources: Wastewater (NI: Collection and Treatment of Sewage/Urban Development)				
Reduce				
Ire	**WW1** Measures intended to reduce loading to the treatment plant -Limit or cease the direct importation of polluting matter (for example liquid wastes, landfill leachate, sludges). -Investigate the extent of use and impact of under-sink food waste disintegrators and take appropriate actions. -Investigate fats/oils/grease influent concentrations and take actions to reduce FOG entering the collection system.	• May reduce nutrient levels in receiving waters aiding the achievement of Environmental Quality Standards. • May reduce the presence and abundance of pollution tolerant macroinvertebrates, macrophytes, macroalgae and sewage fungus, decreasing competition. • May improve conditions for fish due to improved quality of habitat for certain species of fish e.g. salmonids. • May reduce numbers of certain bird species as a result of less primary productivity and therefore a reduced food source. • May lead to the improvement of a key requirement needed to achieve favourable conservation status for protected water dependent habitats and species as a result of improved water quality. Summary: reduced nutrient loads may improve water quality and reduce the impacts of eutrophication. Elevated levels of nutrients result in un-naturally high levels of food for certain bird species. Reduced nutrient loads may lead to a situation where the composition of the flora and fauna may return to a more natural and sustainable level. *AA required if alternative facility for treatment of waste is constructed e.g. incinerator.	+ + + - +	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**WW2** Impose development controls where there is, or is likely to be in the future, insufficient capacity at treatment plants	• May reduce disturbance to biodiversity, flora and fauna from development in inappropriate areas and where there is insufficient capacity. • May contribute to the maintenance of good or high status of waters by prohibiting development to unsustainable levels which would lead to downgrading of water quality status. • May reduce the potential damage that would be caused by increased abstraction pressures and increased pollution from WWTPs in areas where there is no capacity. • May contribute to better planning procedures and guidance which incorporates the controls necessary to protect the water environment, their catchments, and protected areas. Summary: This measure may have an overall positive effect if whole catchment loadings are considered as part of the planning process.	+ + + +	+
Ire	**WW3** Initiate investigations into characteristics of treated wastewater for parameters not presently required to be monitored under the urban wastewater treatment directive.	These investigations should be prioritised on the basis of known sensitivities of water dependent habitats and species.	+	+
Ire	**WW4** Initiate research to verify risk assessment results and determine the impact of the discharge, including impacts to groundwater.	Prioritise work for protected areas, particularly more sensitive areas and take account of more stringent standards, e.g. *Margaritifera* targets	+	+
Ire	**WW5** Use decision making tools in point source discharge management	All decision making tools should take account of the requirements of protected areas and prioritise such areas for necessary changes in management	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
	WW6 Reduction in pollution at source through education campaigns	• May lead to reduced pollution of waters by humans through behavioural changes which may prevent point and diffuse source pollution. • May create ownership over the quality of waters particularly drinking waters. Summary: prevention of pollution or limiting the amount of pollutants entering the surface and groundwater networks may have a positive effect on the environment, and may contribute to reduced expenditure on pollution and treatment.	+ +	+
NI	**WW7** Reduce loading by introduction of Phosphate free products	• May reduce the levels of phosphorus entering surface waters from domestic and industrial properties. This may have positive effects as measures will increase diversity/ promote restoration of communities more typical of the site's reference conditions. • May reduce the amount of nutrient removal required at WWTPs due to decreased loadings entering treatment plants. • Decreased levels of phosphorus may alter species composition in areas previously prone to high phosphorus levels from P products, and return composition and abundance of flora and fauna to more natural levels. • May reduce numbers of certain bird species as a result of less primary productivity and therefore a reduced food source. Summary: reduced nutrient loads will improve water quality and reduce the impacts of eutrophication. Elevated levels of nutrients result in un-naturally high levels of food for certain birds species. Reduced nutrient loads will lead to a situation where the composition of the flora and fauna will return to a more natural and sustainable level.	+ + + -	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI	**WW8** Review consent conditions to ensure adequate controls and emission limits are set to achieve new water quality standards in receiving waters. Further development of mathematical models to examine cumulative impacts of discharges at the catchment scale. Detailed analysis to support the review of the consents for sewer systems and to address the volume spilt from overflows in urban areas.	This type of measure is not expected to result in significant environmental impacts and as such has not been assessed. However, impacts could occur if systems are found to be in non-compliant, and thus require upgrade. Therefore, it is anticipated that this measure would be the first step in implementation of measures such as WW10. Consent conditions must take account of Protected Areas.	Not assessed	Not assessed
NI	**WW9** Review the environmental investment required after 2015, prioritise environmental problems and develop indicative lists	Development of lists is part of the information gathering stage of the planning process. This measure could be linked to other measures considered and will be informed by monitoring associated with the WFD and SEA process. Assessment of this measure would be premature prior to a decision being made on the specific projects to be implemented. It should be noted that some of the projects that could be chosen, e.g. installation of higher standards of treatment, are assessed under separate measures where these have been specifically called out (e.g. WW11). It is highly recommended that when specific proposals are chosen, that these be subject to environmental assessment to identify potential impacts.	Not assessed	Not assessed
Replace/Upgrade				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**WW10** Install secondary treatment at plants where this level of treatment is not required under the urban wastewater treatment directive	• May have positive effects in reducing the loading of raw sewerage or poor quality effluent entering water courses. • Potentially will reduce the levels of nutrients, organic matter, dangerous substances, metals, hydrocarbons, pesticides contained within sewage and prevent it from entering receiving waters. • May lead to increased numbers of WWTPs with a higher standard of treatment than currently exists e.g. secondary treatment or by allowing for higher levels of nutrient removal through more sophisticated technologies. • Potential impacts on biodiversity, flora and fauna from siting of new WWTPs or expansion of existing plants. • May reduce numbers of certain bird species as a result of reduced food availability in areas previously with poor/no wastewater treatment. Summary: Reduced nutrient loads may improve water quality and reduce the impacts of eutrophication. Proof is required to show that a new plant will have the desired improvements in water quality for which it is being built i.e. changing one scenario where there are diffuse pressures to a scenario where you have a point source pressure with consequent BOD issues needs to be avoided and there is need to model the changes in the overall nutrient load to the receiving waterbody. Elevated levels of nutrients result in un-naturally high levels of food for certain bird species. Reduced nutrient loads may lead to a situation where the composition of the flora and fauna return to a more natural and sustainable level. A higher standard of treatment is particularly important for protected areas with more stringent objectives, e.g. freshwater pearl mussels or hard water lakes. *Appropriate Assessment is required if this would involve the building of a new plant or an extension to an existing plant.	+ + + - -	+
Ire	**WW11** Apply a higher standard of treatment (stricter emission controls) where necessary			
Ire	**WW12** Upgrade the plant to remove specific substances known to impact on water quality status			
Ire	**WW13** Install ultra-violet or similar type treatment			

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Relocate				
Ire	**WW14** Relocate the point of discharge	• Where previously outfalls were causing pressures in sensitive catchments, the cessation of such discharges should be considered. Removal of outfall pipes should not be considered if likely to cause significant damage. Disconnection at source would suffice in this situation • May remove impacts on sensitive receiving waters e.g. shellfish areas, freshwater pearl mussel catchments. • Relocation of the point of discharge could result in biodiversity impacts if inappropriately located however this would be contradictory to the spirit of the measure. Summary: This measure potentially could improve the quality in sensitive/protected areas and the measure should prioritise such catchments. *Appropriate assessment required and should show that the relocation will not negatively impact on protected areas.	+ + -	+
Ire	**WW15:** Introduce design and construction codes for wastewater infrastructure in areas of groundwater vulnerability. These could include prioritisation of construction supervision and avoidance of Inner Source Protection Zones.	The provision of design and construction codes would contribute to the overall positive impact of the POM as they provide the tools to inform key actions arising from the Plan. However, because the details of what these would include are not available at this time, it is not possible to assess the impacts associated with these. However, they should take account of Protected Areas.	Not assessed	Not assessed
Ire	**WW16:** Implement Community Digestors for Alternative Energy.	This measure would potentially lead to improvements in water quality and this may have benefits for terrestrial and aquatic biodiversity if digestors are located in suitable areas. *AA required.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**WW17:** Implement and audit performance management systems at all WWTPs.	This type of measure is not expected to result in significant environmental impacts and as such has not been assessed. However, impacts could occur if systems are found to be performing below required thresholds. Therefore, it is anticipated that this measure would be the first step in the implementation of measures such as WW10 to WW14, which have been assessed.	Not assessed	Not assessed
Additional Measures for Point and Diffuse Sources: Industrial Discharges (NI: Industry and Other Business)				
Reduce				
NI	**IND1**:Implement management controls as they become available, e.g. new or improved guidance, new or revised legislation or regulations, codes of practice These may include: proposed - Environmental Impact Assessment (Fish Farming in Marine Waters) Regulations (NI) -Introduction of codes of practice for potentially polluting activities and consideration of a system of Generally Binding Rules (GBR)	There are a number of management controls identified as potential measures, the details of which are not yet available. It is not possible to assess the impacts associated with these at this time; however, it is strongly recommended that when the details of these are known, they are subject to an environmental assessment to identify potential impacts. All controls must include specific measures/controls/consideration of protected areas, particularly those with more stringent requirements. The overall positive aspect of these measures should be noted as they provide tools, methodologies and data required to inform key actions arising from the RBMP.	Not assessed	Not assessed
NI	**IND2:** Develop oil storage regulations to reduce pollution impacts	These are proposed regulations, the details of which are not yet available, and therefore cannot be assessed yet.	Not assessed	Not assessed
NI	**IND3:** Enforce discharge consent / licence standards to reduce inputs at source	This measure is important to ensure the environmental quality standards that are set for receiving waters are achieved. Adequate enforcement of licensing is needed, and particular attention should be placed on discharges to protected areas where more stringent standards may be required by a licence.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI	**IND4:** Compile an inventory of management best practice and reduce in peat usage	This measure is directed at information/data gathering, and as such as not suitable for assessment.	Not assessed	Not assessed
NI	**IND5** Further research into diffuse pollution modelling	This measure is very important for protected areas. There is particular need for models that predict/model the ecological impacts in the receptor. e.g. the Draft Freshwater Pearl Mussel Regulation set targets for diatoms, macroalgae, macrophytes and macroinvertebrates, but models are needed that can determine what reductions in nutrient loads are required to achieve these targets. Models need to be very detailed in order to take account of site-specific issues such as soil-type, water colour/light attenuation, flows etc.	+	+
Replace/Upgrade				
Ire	**IND6** Introduce Best Available Techniques (BAT) for industrial discharges	• May introduce better systems to improve the quality and quantity of industrial discharges. • May reduce levels of nutrients, dangerous substances and other pollutants entering receiving waters. • May result in the reduction of pollution incidents and therefore the impacts on biodiversity, flora and fauna. Summary: BAT for industrial discharges may potentially have an overall positive effect on protected sites, and must consider specific requirements of protected areas.	+ + +	+
NI	**IND7** Improve point source discharge controls after examination of the cumulative impact of discharge consents at the catchment scale	This measure is particularly important in order to assess the cumulative impacts from numerous point sources. Catchment nutrient budgets should be prepared and limits set and must take account of the specific requirements/objectives of protected areas. This may have a positive result for protected sites.	+	+
Relocate				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**IND8** Relocate the discharge point	• Where previously outfalls were causing pressures in sensitive catchments, the cessation of such discharges should be considered. Removal of outfall pipes should not be considered if likely to cause significant damage. Disconnection at source would suffice in this situation. • May remove impacts on sensitive receiving waters e.g. shellfish areas, freshwater pearl mussel catchments. • Relocation of the point of discharge could result in biodiversity impacts if inappropriately located however this would be contradictory to the spirit of the measure. Summary: This measure potentially could improve the quality in sensitive/protected areas and the measure should prioritise such catchments. *AA required and should show that the relocation will not negatively impact on protected areas.	+ + -	+
Additional Measures for Point and Diffuse Sources: Other Sources (landfills, quarries, mines & contaminated lands) (NI: Industry and Other Business/Waste)				
Reduce				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI	**OP1:** Implement management controls as they become available, e.g. new or improved guidance, new or revised legislation or regulations, codes of practice These could include: EU Mining Waste Directive Planning Policy Statement (PPS) 19 on Planning Minerals (NI) Amendments to the Groundwater Regulations (NI) Contaminated Land Regulations and Associated Guidance (NI)	There are a number of management controls identified as potential measures, the details of which are not yet available. It is not possible to assess the impacts associated with these at this time; however, it is strongly recommended that when the details of these are known, they are subject to an environmental assessment to identify potential impacts. All new guidance should consider the specific objectives and requirements of protected areas, particularly those with more stringent objectives. The overall positive aspect of these measures should be noted as they provide the tools, methodologies and data required to inform key actions arising from the Plan.	Not assessed	Not assessed
NI	**OP2:** Reduce pollution arising from waste management, e.g. use of Site Waste Management Plans, proper disposal of construction, demolition and electrical wastes, segregated collection	The prevention of incorrect disposal of waste is a positive measure for protected areas. Proper plans and disposal mechanisms should limit the incidence of disposal in remote areas and within protected areas.	+	+
NI	**OP3:** Introduce a Quality Protocol for the production of aggregates from inert waste to prevent water pollution from contaminated material	The prevention of pollution from the production of aggregates from inert waste may have benefits to all receiving waters.	+	+
NI	**OP4:** Reduce illegal disposal of waste	A campaign which would reduce the illegal disposal of waste would have particular benefit for protected areas which, in the majority of cases, tend to be remote rural areas e.g. bogs, which are used for illegal disposal of unwanted materials.	+	+
Replace/Upgrade				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**OP5** Undertake remediation projects for prioritised landfills, quarries, mines and contaminated lands e.g. pollution containment measures and monitoring requirements	• May remove contamination from pollutants such as dangerous substances e.g. metals and fuels. • May stop existing discharges which are contributing to the pollution. • May lead to improvements in the quality of both surface and groundwaters, and improve the composition and abundance of flora and fauna. • Likely to improve the conservation status of water dependent habitats and species. Summary: overall the effects are positive for this measure. This measure must have protected area requirements/ impact on protected areas as one of the criteria for prioritisation. Quarries in particular are very important in terms of sediment loads and chemical changes to receiving waters.	+ + + +	+
Ire	**OP6** Properly dispose of harbour dredgings	The disposal of harbour dredging should be subjected to habitats assessment screening for impacts if the disposal area is located in or adjacent to a protected area.	+	+
Ire	**OP7** Monitor shipping activities, including discharges	Monitoring of shipping activities is not expected to result in significant environmental impacts and as such has not been assessed. However, impacts could occur if monitoring results in actions being taken as a result of information gathered. Therefore, any actions arising from this measure should be subject to environmental assessment. It should be noted that the effectiveness of this measure might be limited by the willingness of operators to participate in the monitoring scheme.	Not assessed	Not assessed
Additional Measures Point and Diffuse Sources: Usage and Discharge of Dangerous Substances (NI: Included under key sectors under Pollution)				
Reduce				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**DS1** Improve administration of dangerous substances through use of awareness campaigns, improvement in product labelling, support of auditing and reporting and improved information sharing	No environmental impacts would be expected to occur as a result of implementation of this measure, aside from the positive impacts for water quality.	Not assessed	Not assessed
Ire	**DS2** Review of wastewater and industrial licences	DS2 is directed at information gathering and, while an important step in the planning process, is not suitable for assessment. However, DS2 is the first step in the implementation of DS3, for which an assessment was carried out. DS2 must take account of protected areas objectives and requirements and prioritise review according to their needs.	Not assessed	Not assessed
Ire	**DS3** Reduction of pollution by control of point sources through use of pollution reduction programmes	Pollution reduction programmes are likely to lead to improvements in water quality and biodiversity by reducing chemical pollution to water bodies. This is particularly important in sensitive habitats, in particular for freshwater pearl mussel catchments. Must take account of protected areas objectives and requirements and prioritise review according to their needs.	+	+
Ire	**DS4** Reduce discharges, losses and emissions from diffuse sources, including in groundwater source protection zones	May lead to improvements in water quality and benefits for biodiversity due to reduced dangerous substances emissions from diffuse sources especially pesticides and herbicides. Overall positive effect on water quality and biodiversity.	+	+
Replace/Upgrade				
Ire	**DS5** Upgrade of treatment to remove substances from effluent	May lead to improvements in water quality and benefits for biodiversity due to reduced dangerous substances emissions from effluent. Overall positive effect on water quality and biodiversity. *AA required if this would involve the building of a new plant or an extension to an existing plant.	+	+
Relocate				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**DS6** Relocate discharge point	• Where previously discharges were causing pressures in sensitive catchments, the cessation of such discharges should be considered. • May remove impacts on sensitive receiving waters e.g. shellfish areas, freshwater pearl mussel catchments. • Relocation of the point of discharge could result in biodiversity impacts if inappropriately located however this would be contradictory to the spirit of the measure. Summary: Likely to lead to an improvement in the quality of biodiversity, flora and fauna if relocated away from sensitive/protected habitats and species.	+ + -	+
Additional Measures for Point and Diffuse Sources: Agriculture				
Reduce				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AG1** Create buffer strips around water bodies to prevent pollution loss	• Improved biodiversity potential in undisturbed corridors. • Reduces cattle access to rivers, streams and lakes, thereby removing this pressure i.e. poaching and dunging in waters. This in turn has benefits for surface and groundwater quality. • Reduces impacts on waters and associated flora and fauna from nutrient and sediment runoff and eutrophication. • Potential to remove pathogens from runoff. • Potential for negative impacts if undisturbed corridors are not managed appropriately. Some grazing may be required and also appropriate management of bankside vegetation particularly for invasives e.g. Rhododendron. Summary: This measure would be desirable and would provide for protection of water courses from nutrient and sediment losses from agriculture. The measure should target nutrient hot spots i.e. standard buffer widths should not be used. These should be designed to cover variable source areas. Drains should be blocked in buffer zones. In Protected Areas care is required to ensure that the change in land management in buffer zones does not directly adversely impact on habitats and species. Screening for impacts under the habitats directive should be carried out.	+ + + + -	+
NI	**AG2** Adoption of Best Management Practices to reduce phosphorus inputs, e.g. use of feedstuffs designed to minimise phosphorus in excreta	Any measure that potentially may reduce the quantity of phosphorus entering water courses is positive and may lead to a reduction in eutrophication. This would be a positive measure for protected areas, and sensitive protected areas should be targeted for implementation of this measure.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AG3** Installation of fencing to prevent livestock access to watercourses	• This measure would restrict access of cattle to rivers, streams and lakes, thereby removing this pressure i.e. poaching and dunging in waters. This in turn has benefits for surface water quality. • May reduce impacts on waters and associated flora and fauna caused by cattle access. Fencing may allow buffering of localised losses from immediately adjacent river but will not prevent main losses from farms via drains. • Potential to remove pathogens from runoff. Summary: This measure would be desirable and would provide for protection of water courses which are currently under threat from livestock access. In protected areas, this may result in some impacts on riparian habitats and species. Screening for impacts should be carried out.	+ + +	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AG4** Reduction of agricultural intensity e.g. lower stocking density on land, reduction in land reclamation	• May lead to improvements in water quality, particularly if aimed at target hotspots for nutrient/sediment loss within the catchment. Particularly important in sensitive areas. This could result in benefits to biodiversity. • May reduce impacts on biodiversity, flora and fauna if the intensity of farming is reduced in areas unsuitable for high levels of agricultural activities e.g. where soils are inappropriate, in SACs/SPAs/Ramsar sites and also where groundwaters are vulnerable. • Could result in reduced levels of silt run off, reduced fertiliser application, and reduced slurry spreading. • Reduced levels of land reclamation may lead to reduced levels of drainage and silt run off when land is being reclaimed for agricultural activities/forestry, and therefore reduced hydrological pressures Summary: This measure would be most effective where currently intensive activities are occurring in unsuitable catchments. *AA required if land use change proposed in a protected area.	+ + + +	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AG5** Require Nutrient Management Planning	• If farm level nutrient management is linked to whole catchment nutrient budgets, and considers both imports and exports from the farm, positive effects are likely for water quality and protected areas. • Nutrient Management Planning should provide for a more efficient procedure for utilising nutrients in agriculture and may result is better matching of application of nutrients to crop needs and thereby reduce the quantities of excess nutrients entering watercourses through run off. • May contribute to best practice in relation to nutrient application (organic and inorganic) and lead to an improvement in other farm management decisions which have the potential to impact on the environment. Summary: Should lead to Improvements in water quality and benefits for biodiversity.	+ + +	+
Ire	**AG6** Set aside of agricultural lands	• Leaving a proportion of farm land uncultivated or put to non-agricultural use for a period of time can lead to changes in habitat types and associated changes in biodiversity, flora and fauna, which could be both positive or negative depending on how the land is managed. • Spraying (pesticides) of set aside lands can lead to negative impacts on biodiversity. Summary: Potential for negative impacts on protected areas depending on management of land. **Change to POM recommended**: this measure is qualified so that set aside of agricultural lands while beneficial, should not involve the spraying of such lands within or adjacent to protected areas. *AA required.	+/- -	-
Replace/Upgrade				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI	**AG7** Identification of regions where diffuse pollution problems are most severe	• This is very important for protected areas. For nutrient sensitive protected areas identification of critical source areas is needed and development of sensible measures for reducing nutrient loss from them.	+	+
Ire/NI	**AG8** Increase participation in rural environmental protection schemes/other agri-environment schemes e.g. NPWS farm plans, particularly in priority catchments (Ire) and focus advice and regulatory action in areas where there is a lower uptake in agri-environment schemes (NI)	• May improve biodiversity through increased focus on conservation, landscape protection and wider environmental problems. By their voluntary nature however, the participation in these schemes can vary greatly, and therefore are not consistently implemented across the island of Ireland. • Could lead to more wildlife corridors, increased habitat diversity and protection if implemented more widely amongst the farming community than at present. • May lead to reduced soil and water contamination from nutrients, pesticides and other dangerous substances and therefore reduce potential impacts on biodiversity, flora and fauna. • Should protect designated habitats and endangered species of flora and fauna. • If farm level nutrient management is linked to whole catchment nutrient budgets, and considers both imports and exports from the farm, positive effects are likely for water quality and protected areas. Summary: increased participation in agri-environmental protection schemes is likely to have positive benefits for the environment if guidance and advice are produced and disseminated in a consistent manner. By their voluntary nature however, it is difficult to achieve consistent application of these schemes, and therefore they have limitations. However, in general, they are positive.	+/- + + + +	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AG9** Upgrade farm management systems	• Farm Waste Management system upgrades would facilitate the management of farm waste through appropriate and adequate storage facilities for silage and agricultural wastes, proper animal housing and appropriate equipment for the application of farm waste. If encouraged by providing grant aid to farmers for investments, this would ensure more widespread upgrades. Grants if made available must be linked to the availability of appropriate spread lands and not represent an increased risk to water quality. • May lead to improved use of farmyard slurries leading to improved water quality and in turn improvements in human health with regard to bathing, drinking waters, aquifers etc. and reduced potential impacts to biodiversity. Summary: A positive measure which could lead to reduced pollution to waters and improved biodiversity. Grants if made available however must be linked to the availability of appropriate spread lands and not represent an increased risk to water quality.	+ +	+
NI	**AG10** Examine commercial/technical proposals that have the potential to bring about significant reduction in the phosphorus surplus e.g. incinerator or digestor	Examination of commercial/ technical proposals is part of the planning process. Assessment of this measure would be premature prior to a decision on which proposals will be implemented. However, some of the technical proposals that could be chosen are assessed separately where specified (e.g. AG12, AG13). It is highly recommended that when specific proposals are chosen, that these be subject to environmental assessment to identify potential impacts.	Not assessed	Not assessed
NI	**AG11** Phosphorus balances on individual holdings to be introduced on a phased basis	This measure again should have the desired effect of decreased phosphorus losses from agriculture which would help to reduce eutrophication. This is linked with AG5, and would have major benefits for water quality and therefore protected areas.	+	+
Relocate				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AG12** Removal by tanker in areas of nutrient surplus	• May reduce agricultural waste in areas where the waste is being removed from, but an assessment is needed in the areas where the waste is going to be spread so as not to create problems elsewhere. • Should only be considered as a temporary solution and must never be employed in isolation, i.e. must be accompanied by nutrient-reduction plan. • May led to improvements in water quality through reduced levels of nutrients reaching water courses through run off, and this May have benefits for surface and groundwater quality in the catchments the waste is being removed from. However, this can only be considered as a short term measure. Summary: This measure may lead to improvements in the catchments it is being applied to, but could create problems in catchments where the waste is being spread. Recommend the following mitigation: Should only be considered as a temporary solution and must never be employed in isolation, i.e. must be accompanied by nutrient-reduction plan. **Change to the Draft POMs recommended:** This measure should be qualified and should only be considered as a short term measure as this does not resolve the issue with the pressure. An *AA is also recommended for the relocation area.	+/- + +/-	+/-

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AG13** Treatment by digestors in areas of nutrient surplus	• This measure may reduce agricultural waste in intensively farmed catchments but should not be used as a method to promote intensification. • May led to improvements in water quality through reduced levels of nutrients reaching water courses through run off, and this is likely to have benefits for surface and groundwater quality and the wider catchment biodiversity. • Potential for negative impacts depending on location of the digestor. Summary: This measure would potentially lead to improvements in water quality and this may have benefits for terrestrial and aquatic biodiversity if digestors are located in suitable areas. *AA required for any new facility.	+ + -	+
Additional Measures for Point and Diffuse Sources: Wastewater from Unsewered Properties (NI: Collection and Treatment of Sewage)				
Reduce				
Ire	**UP1** Amend Building Regulations -Code of Practice for single houses -Code of Practice for large systems -Certification of unsewered and percolation areas	This measure is focussed on pre-planning and therefore addresses the pressure at the earliest pre-planning stage where significant reduction of risk can be achieved simply by ensuring that systems are suitably located and are designed to achieve the intended water management. Amendment of building regulations to include codes of practice and requirements for certification of on-site systems will have positive impacts on the water environment by reducing the cumulative pressures from new unsuitable systems coming on line in the short to medium term once the regulations are passed. Codes should explore if an *AA is required or not.	+	+
Ire	**UP2** Assess applications for new unsewered systems by applying risk mapping/decision support systems and codes of practice	This measure focuses on pre-planning and allows consideration of protected areas to be taken in to account at the earliest opportunity. This measure is highly desirable and should be adopted. The process should assess whether an *AA would be required.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**UP3** Establish certified expert panels for site investigation and certification of installed systems.	These types of measures are not expected to result in significant environmental impacts and as such have not been assessed. However, impacts could occur if systems fail to achieve certification or are found to be in non-compliance, and thus require upgrade. Therefore, it is anticipated that these measures would be the first steps in implementation of measures such as UP8 which has been assessed.	Not assessed	Not assessed
NI	**UP4** Change current policy and guidance to improve existing controls and modify development control and enforcement practices to reflect restrictions if required	Again this measure is highly desirable and should take in to account protected areas in order to minimise impacts. *AA required.	+	+
NI	**UP5** Reduce loading by introduction of phosphate free detergents	• This measure may reduce the levels of phosphorus entering surface waters from domestic properties. This has positive effects by removing the conditions needed for pollution tolerate flora and fauna to thrive and therefore may in turn increase biodiversity at a local scale. • Decreased levels of phosphorus is likely to alter species composition in areas previously prone to high phosphorus levels from P products, and return composition and abundance of flora and fauna to more natural levels. Summary: The result is likely to be a decrease in phosphorus levels and eutrophication, and the return of surface and groundwaters to a more natural state as existed pre P products.	+ +/-	+
Replace/Upgrade				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**UP6** Carry out an inspection programme in prioritised locations for existing systems and record results in an action tracking system.	• UP7 is directed at information gathering and, while an important step in the planning process, is not suitable for full assessment. However, it is viewed as positive and comments are detailed here in support of this measure. • May provide valuable information on non-functioning, or poorly functioning on-site systems, and upgrades might result in better quality effluent from such systems. • Advice and guidance on upgrades which potentially could provide the suitable level of treatment is critical to avoid replacement with inappropriate systems. Summary: Positive effects likely from upgrading existing inappropriate on-site systems to better systems with more advanced treatment.	+ +	+
NI	**UP7** Following mapping of vulnerable areas, where water quality is threatened alternate treatment options, such as providing mains sewers or tank maintenance programmes, may be investigated	This measure is aimed at addressing pressures on water quality associated with unsewered properties during the post-planning phase, i.e. for houses which are already built. It potentially would result in a relatively short term positive benefit for water quality and aquatic biodiversity, with these benefits continuing over the medium and long term as more areas are targeted and remedial actions are carried out. This measure will be particularly important in relation to those waterbodies containing Freshwater Pearl Mussels. Summary: This is a positive measure. The significant effects on water quality associated with unsewered properties in terms of nutrient enrichment, particularly phosphorus, and eutrophication give rise to problems for protected habitats, particularly for Freshwater Pearl Mussels and other aquatic species that require high quality waters. *AA required for new infrastructure.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**UP8** Enforce requirements for percolation and de-sludging	• May provide valuable information on non-functioning, or poorly functioning on-site systems, and desludging might result in the better functioning of such systems. • This measure is particularly important in sensitive catchments, e.g. Freshwater Pearl Mussel catchments, and should be carried out. • Potential impacts may arise from the sludge if land spread in inappropriate areas. Measures discussed under agriculture above in terms of tankering and digestors should be adhered to, to avoid such impacts. Summary: Desludging of on-site systems potentially could lead to their improved operation, decreased incidents of ponding and thereby reducing impacts from them to nearby surface waters and also to groundwater bodies. Enforcement of percolation requirements is the key benefit of this measure, and could potentially have a very positive effect for protected sites.	+ + +/-	+
NI	**UP9** Consideration of grants to improve private sewerage systems (NI)	UP9 is not expected to result in significant environmental impacts, aside from positive impacts to water quality due to improvements in private sewage discharges. As such, it does not require assessment.	Not assessed	Not assessed
Relocate				
NI	**UP10** Identify areas where there are potential constraints on development and address these	Development of constraints mapping is part of the information gathering stage of the planning process. Assessment of this measure would be premature prior to a decision being made on the specific projects to be implemented. It should be noted that some of the projects that could be chosen, e.g. connection to municipal systems, are assessed under separate measures where specifically noted (e.g. UP11). It is highly recommended that when specific proposals are chosen, that these be subject to environmental assessment to identify potential impacts.	Not assessed	Not assessed

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**UP11** Consider connection to municipal systems.	• May remove localised impacts from on-site systems in priority catchments, and provide for a higher standard of treatment of domestic sewage in these areas. • Could potentially not lead to improvements if municipal systems are inappropriately designed so as not to lead to the desired results of improved water quality, or if sited in inappropriate locations. Summary: The benefits for biodiversity, flora and fauna are positive as localised impacts from on-site systems may be removed, and this may be a critical factor in the failure of certain water bodies in rural locations in terms of their WFD status, and also in turn on certain protected sites not achieving their favourable condition objectives e.g. in designated bathing waters. *AA required for new connections.	+ +/-	+
Additional Measures for Point and Diffuse Sources: Forestry				
Reduce				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI/Ire **NI** **Ire** **NI**	**F1** Implement management controls as they become available, e.g. new or improved guidance, new or revised legislation or regulations, codes of practice These could include: - Improved guidance based on scientific research for highly sensitive areas (e.g. Pearl Mussels) - Ensuring regulations and guidance are cross referenced and revised to incorporate proposed measures - Development of maps indicating where forests should be developed taking account of sensitive and protected areas	There are a number of management controls identified as potential measures, the details of which are not yet available. It is not possible to assess the impacts associated with these at this time; however, it is strongly recommended that when the details of these are known, they are subject to an environmental assessment to identify potential impacts. These are however all viewed as positive measures.	Not assessed	Not assessed
Ire	**F2** Acidification - Avoid or limit (to below critical thresholds) afforestation on 1st and 2nd order stream catchments in acid sensitive catchments	This measure may be positive for small catchments as it provides for the protection of small streams in acid sensitive catchments, however, if these areas coincide with Natura 2000 sites, especially Freshwater Pearl Mussel catchments, afforestation should be avoided. **Change to the Draft POMs recommended:** Avoid afforestation on 1st and 2nd order stream catchments in acid sensitive areas in protected areas.	-	-
Ire	**F3** Acidification – Restructure existing forests to include open space and structural diversity through age classes and species mix, including broadleaves	May increase areas of open space and structural diversity through age classes and species mix, including broadleaves. Although this measure may take some time to be realised, it is a positive one for terrestrial biodiversity within protected areas. The actions necessary to achieve this may cause some impacts, and should be assessed.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**F4** Acidification - Revise the Acidification Protocol to ensure actual minimum alkalinities are detected (that is ensure sampling under high flow conditions) and revise boundary conditions for afforestation in acid sensitive areas.	May reduce impacts in sensitive upland headwaters, which are particularly important for freshwater pearl mussels and salmon spawning.	+	+
Ire	**F5** Eutrophication and Sedimentation - Avoid or limit forest cover on peat sites	This is a desirable measure for peat catchments, as this would avoid or limit the key pressure which is drainage. **Change to the Draft POMs recommended:** The measure should be amended to read: Eutrophication and Sedimentation - Avoid or limit forest cover on peat sites and on errodable soils. *AA required if a new plantation on a peat site/errodable soils in a protected area or the catchment of a protected area.	+	+
Ire	**F6** Eutrophication and Sedimentation -Change the tree species mix (for example broadleaves) on replanting	This measure may introduce more diversity in to forestry, including the reintroduction of native species, which is of overall benefit to protected areas.	+	+
Ire	**F7** Eutrophication and Sedimentation - Limiting felling coup size	Limiting felling coup size may lead to a reduction in the impacts associated with this activity which include sedimentation.	+	+
Ire	**F8** Eutrophication and Sedimentation - Establish new forest structures on older plantation sites (including riparian zones, drainage layouts, species mix, open areas)	As with F6, this is a positive measure as it introduces new species mixes, and establishment of the plantation in accordance with best practice. It can therefore take in to account the requirements for protected areas at the pre planning stage.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**F9** Hydromorphology – Audit existing drainage networks in forest catchments	F9 is directed at information / data gathering, and while an important part of the planning process, is not suitable for assessment here. It is anticipated that F9 would be an initial step in implementation of other measures, such as F18, which have been assessed. It is however viewed as a positive measure.	Not assessed	Not assessed
Ire	**F10** Pesticide Use – Maintain registers of pesticide use	F10 is directed at information / data gathering, and while an important part of the planning process, is not suitable for assessment here. It is anticipated that F10 would be a first step in implementation of other measures, such as F11 and F12, which have been assessed. It is however viewed as a positive measure.	Not assessed	Not assessed
Ire	**F11**:Pesticide Use – Reduce pesticide usage	This a desirable measure, particularly in sensitive catchments such as the Freshwater Pearl Mussel catchments.	+	+
Ire	**F12**:Pesticide Use - Pre-dip trees in nurseries prior to planting out	This a desirable measure, particularly in sensitive catchments such as the Freshwater Pearl Mussel catchments.	+	+
Replace/Upgrade				
Ire	**F13:** Acidification - Mitigate acid Impacts symptomatically using basic material (e.g. limestone or sand liming)	The use of basic material should be avoided in protected areas, particularly in Freshwater Pearl Mussel catchments;. **Note: Change to the Draft POMs recommended:** avoid this measure in protected areas, and avoid the use of basic material, particularly in sensitive freshwater pearl mussel catchments.	-	-
Ire	**F14:** Acidification – Manage catchment drainage to increase residence times and soil wetting, including no drainage installation in some areas	This measure is particularly desirable where afforestation on peat has taken place. Increased residence times and no drainage in some areas would be desirable and should be investigated. However, the process may give rise to some additional release of nutrients. Therefore an *AA may be required.	+	+
Ire	**F15**: Acidification – Implement measures to increase stream production – for example with native woodland in riparian zones.	A return of stream production to natural levels is desirable and would be a positive measure for biodiversity.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**F16**: Eutrophication and Sedimentation - Establish riparian zone management prior to clearfelling	This is a critical measure in order to reduce the impacts of sedimentation during clearfelling. Particular attention should be placed on sensitive protected areas e.g. Freshwater Pearl Mussel.	+	+
Ire	**F17:**Eutrophication and Sedimentation - Enhance sediment control	This is a critical measure in order to reduce the impacts of sedimentation. Particular attention should be placed on protected area watercourses.	+	+
Ire	**F18:**Hydromorphology – Enhance drainage network management – minimise drainage in peat soils	This measure is particularly desirable where afforestation on peat has taken place. Increased residence times and no drainage in some areas would be desirable and should be investigated.	+	+
Ire	**F19:**Pesticide Use – Develop biological control methods	This measure would help reduce the reliance on chemical pesticides and would therefore be a benefit for water quality and therefore protected areas. These methods have however been known to cause some unintended side effects. Therefore, an *AA is required.	+	+
NI	**F20:** Assessment – Assess operations posing a significant threat to water quality on a whole catchment basis	This measure is directed at information / data gathering, and while an important part of the planning process, is not suitable for assessment here. It is however viewed as a positive measure.	Not assessed	Not assessed
Ire	**F21** Institute a public awareness campaign on the impacts of forestry activities	This measure is directed at public awareness, and is not suitable for assessment.	Not assessed	Not assessed
Additional Measures for Physical Modifications (NI: Freshwater Morphology/Marine Morphology)				
Reduce				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI/Ire **Ire** **NI** **NI** **NI** **NI**	**PM1:**Implement management controls as they become available, e.g. new or improved guidance, new or revised legislation or regulations, codes of practice These could include: -A code of practice for morphology -Introduction of a culverting policy -Review of existing legislative controls on physical modifications to surface waters -Development of a protocol for - dredging -Implementation of a new marine licensing regime and marine planning system under the (draft) UK Marine Bill -Adoption of operational protocols for impoundments	There are a number of management controls identified as potential measures, the details of which are not yet available. It is not possible to assess the impacts associated with these at this time; however, it is strongly recommended that when the details of these are known, they are subject to an environmental assessment to identify potential impacts. All are viewed as positive measures however in terms of increasing knowledge and management of our environment.	Not assessed	Not assessed
Ire	**PM2** Support initiatives, such as wetlands and Integrated Coastal Zone Management schemes	May led to improvements in water quality and benefits for biodiversity and if these measures are properly planned, they should be of benefit. Planning must take account of all protected area requirements. *AA required.	+	+
NI	**PM3** Complete further surveys on all water bodies following review of morphology classification results	PM3 is directed at information / data gathering, and while an important part of the planning process, is not suitable for assessment. May led however to improvements in water quality and benefits for biodiversity and if these measures are properly planned, they should be of benefit. Planning must take account of all protected area requirements.	Not assessed	Not assessed

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI	**PM4** Carry out SEA of tidal energy reserves	If a plan or programme to develop tidal energy reserves is proposed, a SEA may be required under the provisions of the SEA Directive. However, if it is not strictly required under the legislation, carrying out an SEA, or EIA if specific projects are proposed, is still highly recommended. Therefore, a mitigation measure recommending this has been brought forward to Chapter 10 of the SEA environmental report. This is therefore viewed as a positive measure.	Not assessed	Not assessed
Replace/Upgrade				
Ire	**PM5** Channelisation investigation	PM5 is directed at further data gathering as part of the planning process and is not suitable for assessment, although viewed as a positive measure.	Not assessed	Not assessed
Ire/NI	**PM6** Channelisation impact remediation schemes, such as re-meandering of straightened channels, reconstruction of pools, substrate enhancement, removal of hard bank reinforcement/revetment or replacement with soft engineering solution	• Water bodies for remediation are identified and require investigation at the project level to determine whether impacts might accrue. • Channelisation restoration/enhancement schemes may improve previously impacted rivers from these types of works, and this in particular could benefit rivers which were previously straightened, or where habitats for fish spawning etc. were destroyed. This in turn may contribute to the naturalisation of the river channel and allow the flora and fauna to re-colonise areas which were unsuitable as a result of channelisation impacts. *AA required for remediation schemes.	+/- +	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire/NI	**PM7** Over-grazing remediation such as stabilisation of river banks	• Areas which are over-grazed are identified by expert opinion and enhancement schemes are now to be considered. If carried through, this may lead to improved biodiversity potential in previously over grazed channel banks. • May reduced impacts on water and associated flora and fauna from soil erosion caused by over grazing. *AA required for remediation schemes.	+ +	+
Ire	**PM8** Impassable barriers investigation	• PM8 is directed at further data gathering as part of the planning process and is not suitable for assessment, although viewed as a positive measure.	+	+
Ire/NI	**PM9** Strategically appraise significant barriers to fish movement and introduce impassable barriers remediation schemes, such as fisheries enhancement schemes, reopening of existing culverts, removal of impoundment and de-silting of impounded reach, desilting of effected river reaches, removal of barriers to fish migration, updating of existing fish passes and construction of new fish passes.	• May lead to potential positive effects on fish passage where previously barriers were preventing the passage of fish. This may be particularly important for the Annex II species Atlantic salmon and sea lamprey. • Reopening of culverts may lead to the restoration of instream habitats for flora and fauna which is desirable. • Permanent/temporary effects may accrue from some operations and therefore an appropriate assessment should be carried out at the project level. Summary: This measure is overall of positive benefit for fish movement in particular, and for the wider biodiversity in surface waters. *AA required for impassable barriers remediation schemes.	+ + -	+
Additional Measures for Abstractions (NI: Abstraction and Flow Regulation)				
Reduce				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AB1** Modernisation of statutes and regulatory practices, e.g. assigning responsibility for compiling and maintaining a comprehensive, national register of abstractions	The potential for this measure to result in significant environmental impacts depends on the actions involved. In this case, the example provided, e.g. maintaining a register of abstractions, is primarily concerned with information gathering and is not suitable for assessment though it is anticipated that it would be a first step in implementation of other measures, such as AB4, 5 and 6, which have been. It is highly recommended that when the specific details as to the types of changes to statutes and regulations are proposed, that these be subject to environmental assessment to identify potential impacts. As a measure however this is viewed as positive in terms of data gathering.	Not assessed	Not assessed
Ire	**AB2** Support water conservation measures e.g. rainwater harvesting schemes, awareness campaigns, introduce best practice guidance	This measure is primarily directed education and awareness, and while this is a valuable measure and should be encouraged, it is not suitable for assessment. It is however viewed as a positive measure.	Not assessed	Not assessed
Ire/NI	**AB3** Address data limitations and additional monitoring needs, e.g. monitor abstraction and compensation flows, assess ecology impacts associated with hydrologic changes, improve abstractions register, improve discharge register, validate and develop HSCs, improve hydrometric data, collect bathymetric data for lakes	Very important measure, especially for Groundwater Dependent Terrestrial Ecosystems (GWDTEs). It is needed to further elucidate the ecological impacts of abstraction, e.g. the impact of lowering base flows on loss of riverine habitat, particularly for freshwater pearl mussels. This measure however is directed at information/data gathering, and while an important part of the planning process, it is not suitable for assessment here.	Not assessed	Not assessed

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AB4** Examine compensation flow requirements on regulated rivers and maintain minimum flow or flow variability, where applicable, to maintain good hydrological status and support ecology	The determination of the flow requirements for flora and fauna and applying appropriate thresholds is a desirable measure. Overall could lead to benefits for protected areas but cannot be assessed as the measure is concerned with investigations that have yet to be put in place.	Not assessed	Not assessed
NI	**AB5** Assess compliance of monitored abstractions and compensation flows with licence conditions	Not assessed as the measure is directed towards assessment of licence conditions, the structure of which is unknown. This should take account of the results from the measure above (AB4).	Not assessed	Not assessed
Ire	**AB6** Develop water budgets	This measure is directed at developing water budgets the contents of which are unknown. Therefore this measure is not assessed.	Not assessed	Not assessed
Replace/Upgrade				
Ire	**AB7** Reduce abstraction demand e.g. reduce leakages and unaccounted water, modify plumbing codes to support conservation, daily metering of abstracted volumes, implement small schemes with smaller demand.	May lead to a reduction in the usage of water both in the domestic and industrial setting and would reduce demand on water supplies. Reduced demand for supplies may reduce incidences of over abstraction and therefore reduce impacts on surface and groundwater quantity and quality. This measure may therefore have positive benefits for biodiversity.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AB8** Increase available water e.g. promote infiltration of runoff, reuse of grey water or treated wastewater, identify and build infrastructure for alternate sources	• This measure is desirable in order to increase the amount of water available e.g. promoting infiltration. This measure would reduce the demand on water supplies, and therefore could potentially reduce incidences of over abstraction and reduce impacts on surface and groundwater quantity and quality. • The use of rainwater harvesting would also be a desirable water to reduce demand for non drinking water related activities such as watering of gardens. • The building of infrastructure for alternate sources has the potential to impact on terrestrial and aquatic protected areas and would require an appropriate assessment. Summary, this is a positive measure as it should reduce water abstraction and therefore decrease the pressure on water supplies. *AA required if new infrastructure is required.	+ + -	+
Ire	**AB9** Water metering and charging programmes for residential users	This measure while beneficial cannot be assessed from the protected areas perspective. It does have the potential however to encourage water conservation and rainwater harvesting which should be encouraged.	Not assessed	Not assessed.

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AB10** Reduce abstraction volumes	• This is a desirable measure particularly in catchments which are currently under heavy pressure from abstractions. This would have benefits for flora and fauna and overall surface water and GWDTE biodiversity. • Would improve the flow in rivers as reduced abstractions would increase in stream/rivers flows. This would lead to increased dilution for pollutants that may be entering the system, but should not be used as a reason to increase inputs until a whole catchment nutrient budget has been established. Summary, this measure would have a particularly positive effect in over abstracted catchments, and should be implemented once over abstraction has been identified. *AA required.	+ +	+
Ire	**AB11** Altered abstraction timing	Would reduce abstractions at sensitive times on water supplies as this measure would focus abstraction to periods when the system has adequate carrying capacity. This would therefore reduce impacts on biodiversity at times when capacity is low e.g. during drought periods.	+	+
Ire	**AB12** Conjunctive use	• This measure would involve the in combination use of a number of supplies in order to not over abstract from one source, when another source may be a feasible option. It therefore focuses the supply of water from the relevant sources to periods when carrying capacity is available. Summary: Overall the measure is a positive one as it tries to eliminate the over reliance on one source to the detriment of that sources water quality and biodiversity. However, if this involves the development of a new source, an *AA would be required.	+	+

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**AB13** Provision of additional storage	• May lead to the improved use of water supplies as water can be stored when rain is plentiful, and then utilised in times of drought when drinking water sources are naturally low, and in some cases predominately groundwater. • May reduce the potential for over abstraction in times of low flow, thereby reducing impacts on biodiversity, flora and fauna. • Potential for impacts if storage areas are inappropriately sited. Summary: If appropriately sited, storage would help reduce the impacts of over abstraction in times of low flow thereby protecting biodiversity. *AA required for any new storage facility.	+ + -	+
Relocate				
Ire	**AB14** Direct development to areas where capacity existing	• May lead to reduced development in areas which are limited in terms of drinking water supplies, and increase development in areas where supplies are adequate. • Potential for increased impacts on flora & fauna in non-priority areas if development is uncontrolled, therefore there is a need for controlled development through development plans and in accordance with best practice. Summary: This measure would reduce the potential for development in areas where drinking water sources are not adequate, and ensure this factor is taken in to account when producing development plans. The drinking water resource must be a critical factor in the location of development, and also must not contribute to overdevelopment of areas where this resource is in plentiful supply. *AA required for new abstractions.	+ +/-	+
Additional measures for Urban (Ire: Wastewater/Industrial Discharges)				
Reduce				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI	**UB1** Development of draft strategy managing stormwater	Development of strategies is part of the planning process. Assessment of these measures would be premature prior to a decision on what the strategies would involve. These measures would however be viewed as positive.	Not assessed	Not assessed
NI	**UB2** Manage misconnections through development of a strategy			
NI	**UB3** Education and awareness on applicability of SUDS	These measures are aimed at education and awareness, and while these are valuable measures and should be encouraged, they are not suitable for assessment. They are however viewed as positive measures.	Not assessed	Not assessed
	UB4 Introduce school education programme			
NI	**UB5** Develop an extended regulatory tool kit	The details as to the management controls to be included in the regulatory toolkit are not yet available. It is not possible to assess the impacts associated with these at this time; however, it is strongly recommended that when the details of these are known, they are subject to an environmental assessment to identify potential impacts.	Not assessed	Not assessed
Ire	**UB6** Prepare urban asset management plans, which should include surveys, mapping, and research; codes of best practice or legislation; groundwater quality monitoring; improved infrastructure; and planning	There are a number of items identified as potential components of the urban assessment management plans, most of which are aimed at data and information gathering. The only piece of the measure, which could be suitable for *AA, is the provision for 'improved infrastructure'. However, the details as to what this would involve in the individual plans are not yet available. It is strongly recommended that when the details of these are known, they are subject to an *AA, if required, or a focussed environmental assessment, to identify potential impacts.	Not assessed	Not assessed
Replace/Upgrade				

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**UB7** Develop a diffuse pollution screening and modelling tool to assess diffuse loads and allow for prioritisation of new actions	Development of a screening tool is part of the information gathering stage of the planning process. Assessment of this measure would be premature prior to a decision being made on the specific actions to be implemented. It is highly recommended that when specific proposals are chosen, that these be subject to environmental assessment to identify potential impacts. This is however viewed as a positive measure.	Not assessed	Not assessed
NI	**UB8** Promote and adopt good practice with respect to storage, use and disposal of hazardous chemicals	This measure is aimed at education and awareness, and while it is a valuable measure and should be encouraged, it is not suitable for assessment. This is however viewed as a positive measure	Not assessed	Not assessed

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**Protecting High Quality Areas:** Develop national guidance and introduce a web-based register Support nature conservation projects	The development of national guidance relating to the protection of high status sites, along with the development of a web-based register, would not be expected to result in significant environmental impacts and therefore does not require assessment. In addition, the support of nature conservation projects would not be expected to result in significant environmental impacts and therefore does not require assessment.	Not assessed	Not assessed
Ire	**Aquaculture (NI: Industry and Other Businesses)** Propose national standards Develop Shellfish management plans Designate additional sites	Without the detail as to what the national standards for aquaculture would contain it is not possible to assess these at this time. However, it is recommended that at such time as these details are known an environmental assessment is carried out to ensure that these standards give consideration to impacts. The designation of additional aquaculture sites would not be expected to result in significant environmental impacts in themselves. However, the management plans that would be needed in order to manage activities within these sites would be required to be subjected to SEA/AA. Specifically, the development of Shellfish Management Plans, currently underway in Ireland, will be subject to a separate SEA/AA.	Not assessed	Not assessed
Ire	**Peat Extraction (NI: Industry and Other Businesses)** Enforce licensing controls Implement rehabilitation plans	The enforcement of licensing controls involves implementation of existing regulations and as such is not suitable for assessment. The implementation of rehabilitation plans on peat extraction sites should be encouraged and be subject to environmental assessment at the time the individual details of these are known to ensure that they are carried out in a holistic fashion and give consideration to impacts.	Not assessed	Not assessed

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
Ire	**Cruising and Boating** Enforce pump out controls Enforce speed restrictions	The enforcement of existing pump out controls and speed restrictions involves the implementation rules and regulations that are currently in place. As such they are not suitable for assessment.	Not assessed	Not assessed
Ire	**Shared Waters** Increase trans-boundary coordination	A continuation of, and increase in, the ongoing coordination between Northern Ireland and Ireland in the area of water management is a critical step in the implementation of the RBMP and should be encouraged. However, the administrative nature of these activities would not be expected to result in significant environmental impacts, aside from the positive impacts to water quality resulting from effective implementation of the RBMP, and as such do not require assessment.	Not assessed	Not assessed
NI	**Alien Species** Amendments to the Wildlife Order (NI) 1985 Maritime Ballast Water Convention NIEA Natural Heritage Grant Aid Programme Develop risk assessments and contingency and management plans for species that are established or are likely to become established Develop sectoral codes of practice Education and awareness programmes	Several of these measures are aimed at education, developing best practice and information gathering, and while valuable, are not suitable for assessment. The remaining measures are primarily planning related, e.g. amendments to the Wildlife Order, and without the specific details it is not possible to assess the impacts of these at this time. However, it is highly recommended that these be subject to an environmental assessment once the details are available.	Not assessed	Not assessed

Source Plan	Additional Measure	Discussion	Positive or negative effect	Conclusion: positive or negative effect
NI	**Fisheries Conservation:** Commercial Fishing Regulations, e.g. further restrictions on licensed commercial salmon fishermen, prohibition of the sale of rod caught salmon Angling Regulations, e.g. catch and release, use of barbless hooks, early closures and shortened season European Fisheries Fund Grants Advice, education and training Protection and restoration of salmon habitats, e.g. develop further conservation and management targets and CMPs for specific rivers, complete DNA based study to determine genetic structure of salmon populations Innovative Action Plans, e.g. Natural England project to encourage more flies back to the rivers	For the most part these measures are concerned with data gathering and education and awareness. For those measures, which involve other types of actions, e.g. innovative action plans and angling regulations, none are expected to result in significant environmental impacts, aside from positive impacts to water quality.	Not assessed	Not assessed