

River Basin Management Plans

# What we plan to achieve by 2015 and beyond

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## Setting Environmental Objectives in the River Basin Plan

The Water Framework Directive aims to achieve good status in surface waters and groundwaters and ensure that there is no deterioration in the water quality of these waters. A key requirement in the River Basin Planning process to deliver these aims is the establishment of environmental objectives under article 4 of the Directive that are to be achieved by 2015 or where a phased approach is considered necessary this may be extended to 2021 or 2027.

A substantial proportion of our water bodies within each of the three River Basin Districts covering Northern Ireland are already at good status or better and therefore a primary aim is to prevent deterioration of their current status.

Preventing deterioration of our water bodies does not just mean preventing deterioration in overall status but also deterioration in the elements that contribute to the assessment of status. The overall status class depends on the condition of the different elements that are assessed in each water body (e.g. its plant community, fish populations, water quality etc) that contribute to the determination of ecological quality, where the element that produces the lowest classification dictates the overall ecological status. We will therefore seek to prevent deterioration of each individual element while seeking to raise the quality of the element that is lowering the overall ecological status below good. For example, where a river water body has a range of ecological quality elements used in determining its overall status and the overall status of the water body is poor as a result of the absence of fish caused by an artificial barrier to fish migration. But all the other elements are in good condition. We will seek to maintain the condition of these other elements at good status or better by preventing their deterioration while we deal with the barriers to improve the situation for the fish element.

Preventing deterioration of status as indicated is one of our primary objectives, however, there are circumstances where allowing deterioration may be appropriate. Such, "exemptions", allow for developments where modifications or alterations are made to a water body to accommodate overriding public interest and/or the benefits to human health, to the maintenance of human safety or to sustainable development, outweigh the environmental benefit to society of preventing deterioration of status. At present we have not allowed any such exemptions but have sought to set conditions on all such developments so as to prevent deterioration of water bodies from good status.

However, deterioration of the water environment does not always impact upon ecological quality. The quality of our bathing waters, shellfish waters and drinking water sources can deteriorate if they become contaminated with bacteria or other pathogens that can affect human health. Preventing deterioration in the standards and objectives that apply to protected areas, that would compromise the benefits we derive from such areas, is also a key objective of the plans.

For those water bodies that are at less than good status we have sought to determine if they can be restored to good status by 2015 or whether a phased approach over an extended time period is necessary. Such a phased approach requires justification as to why the ideal deadline of 2015 cannot be achieved and appropriate reasons may include:

- The scale of improvements may take several cycles, for reasons of technical feasibility.
- Carrying out the improvements by 2015 may be disproportionately expensive.
- Natural conditions do not allow for timely improvements.

The Directive recognises that where a water body has been modified as a consequence of human activity to the extent that it is substantially changed in character that it may not be able to achieve good ecological status, it may be designated as heavily modified, providing certain other provisions are fulfilled. In such cases a less stringent objective of good ecological potential by 2015 or later, as appropriate for a phased approach, may be set.

Environmental objectives have been set on a water body by water body basis for all surface water bodies and groundwater bodies and represents a judgement of the status that a water body can be expected to achieve for each six-year planning cycle, from 2009 to 2027. Such judgements require that an assessment is made of the adverse impacts that are causing the deterioration in water quality, the gap that exists between the current status and the target objective, how far that gap can be closed by existing and/or additional measures and the timescale that would be required, with such measures, to deliver good status or an alternative objective.

In making such judgements we established certain planning assumptions and relied on expert knowledge across a range of scientific disciplines, through a series of workshops, to test the validity of the established objectives and what is considered achievable. We have also taken account of responses from the consultation to inform decisions in seeking to finalise the objectives in the plan. In making such decisions we have been conscious of the need to be ambitious but realistic about what is achievable and that an appropriate balance needs to be struck between protecting and improving the water environment and ensuring that sustainable activities can continue and flourish.

## Planning Assumptions

On the basis that the Directive has the aim of achieving good status by 2015, where the classification status reported in 2009 was moderate, there would be a clear expectancy to achieve good status by 2015, unless there are technical or practical difficulties why this would not be possible. Such a step improvement in status of at least one class in a six-year river basin planning cycle was applied, as an initial planning assumption, across all water bodies that were of less than good status. A further assessment was then made as to the feasibility of raising the status of a water body by an additional step of one class by 2015, until good status was achieved, or whether this could only be achieved by improvement over a further planning cycle, taking into account the measures available. This iterative process was applied across all the water bodies to generate an initial set of objectives for 2015 to 2027.

The above process was also informed by the following requirements associated with the Water Framework Directive:

- **There shall be no deterioration in the status of a water body.**
- **The default objective for all waters should be good ecological status by 2015 or else achieve good ecological potential by 2015 where the water body is heavily modified, unless an extended deadline is considered appropriate.**
- **The standards and objectives associated with protected areas shall be complied with.**
- **The pollution of groundwater shall be prevented or limited and any significant upward trend reversed, plus ensure a balance between abstraction and recharge of groundwater.**
- **Pollution by priority substances shall be progressively reduced and hazardous substances phased out.**

The initial objectives that were generated on the basis of the planning assumptions applied were subject to scrutiny and peer review by scientific and technical staff involved in the monitoring and assessment of water quality in Northern Ireland, through a series of workshops. The workshops covered each Catchment Stakeholder Group Area and reviewed the pressures affecting water quality on a water body by water body basis using technical and scientific expertise, local knowledge of the impacts in the areas and an understanding of what current and future measures were likely to achieve in the water bodies.

The anticipated improvements in class were based on judgements about what can be achieved given the regulatory and voluntary measures that are currently available to secure improvements in the water environment. In particular what could be achieved by the existing legislation and Directives, and what further

improvement could be achieved by additional planned and/or supplementary measures.

Some of the main pressures that were considered to be adversely affecting the ecological quality of the river basins and the planning assumptions employed in assessing what improvement measures were likely to achieve are set out in the following sections.

### **Agricultural Diffuse Pollution**

The risk posed by agricultural activities depends on a wide range of factors, including the characteristics of soils, the topography of the land, the prevailing climatic conditions, the number of such activities in the catchment of the water body and the characteristics of the water body. This makes it difficult to precisely predict the effects of particular measures, particularly as many of the measures to deal with the risk have only been instigated in recent years and others will be new measures. For many water bodies adversely affected by agricultural diffuse pollution, especially those affected by nutrient enrichment, the time taken to restore the natural balance of aquatic plants and the ecosystem, once nutrient inputs are reduced, is slow. This is due to the time taken to reduce the levels of nutrients already accumulated in the environment and the time for plants and animals to re-establish themselves at sustainable levels.

Because of this uncertainty, we have sought to estimate the expected reduction in impacts that are likely to be achieved as a result of the programme of measures based on feedback from monitoring programmes on the effectiveness of earlier measures. This has been applied as a number of planning assumptions set out below, however the situation will continue to be reviewed and the programme of measures refined, on the basis of feedback from our monitoring programmes on the effectiveness of measures.

In our judgement, requiring the agricultural sector to address all impacts resulting from diffuse pollution from agricultural sources by 2015 would be counter-productive and may impose unnecessary costs and burdens on the sector. It may also disturb the changing balance within the ecosystem at a rate that may have other detrimental affects on the environment.

### **Planning assumptions**

The following assumptions were employed in assessing what improvements could be achieved in the critical chemical classification elements of phosphorus, dissolved oxygen and ammonia, where they were currently classed as less than good. This assessment took into account how far these elements were from the desired standard and what improvement was considered achievable within a 6 year planning cycle.

Where a water body was failing phosphorus and/or ammonia and the main pressure on a water body was considered to be agricultural diffuse pollution then the extent of the improvements that could be achieved was dependent upon the measures to be applied within the agricultural sector<sup>1</sup>. This is summarised below:

- The delivery of improvement in the status of a water body, including the time taken to achieve the improved status, depends upon the magnitude of the gap between the desired standard and the current quality, as expressed as a percentage away from the desired standard.
- The assumptions made in relation to an improvement in nutrients are based on information provided by the Agri-Food and Bioscience Institute, Northern Ireland (AFBI) on the projected reduced loadings to surface waters of 20 % as a result of the Phosphorus Regulations and the Nitrates Action Programme.
- The assumptions made in relation to dissolved oxygen and ammonia where a gap of 10% or less is considered to be a recoverable position within one planning cycle, employing current measures, but greater than 10% may require a second planning cycle.
- The assumptions made in relation to rivers also apply to lakes except that there is a longer recovery time that would delay improvement by at least one planning cycle.
- That the controls on diffuse pollution from agriculture, resulting in organic enrichment impacting the invertebrate communities in our surface waters, will significantly reduce the organic load to support an improvement of one class per 6 year planning cycle.

For improvements associated with diffuse pollution from agriculture and rural development including septic tanks that are impacting invertebrate communities

- Where there was a deteriorating trend in the biological indicators of a water body and this was also demonstrated in the invertebrates being less than good. The improvement in class would be delayed by one planning cycle, otherwise it was assumed that the planned measures would be sufficient to achieve the expected class.

<sup>1</sup> Details of all the planned measures associated with the agricultural sector are contained in the Programme of Measures Chapter 7.2

## **Urban Diffuse and Point Source Pollution**

The impacts resulting from urban diffuse and point source pollution often need to be addressed through measures that require major upgrades to waste water treatment works or the relocation of treated discharges to more suitable receiving waters that provide greater dilution and dispersion. Over the last few decades, measures have been implemented to improve the majority of discharges of urban waste water from works serving the main towns and cities in Northern Ireland, mainly through Urban Waste Water Treatment Directive, and significant improvements in water quality have been realised. The remaining impacts are mainly smaller works where it can be more difficult to assess the benefits of upgrading compared with pumping to larger treatment centres, which in some cases may be more cost effective.

Making improvements to achieve good water quality in waters affected by point discharges requires considerable investment of time and resources to plan and design works and infrastructure, obtain the necessary planning permissions and undertake the capital engineering works. Designing effective solutions is necessarily a lengthy and complex process and many of the assets may be required to have an operational life time beyond that of the plan. If adequate time and expertise is not invested, the solutions identified may have a limited life span and not be cost effective.

Urban diffuse pollution results from rainfall becoming contaminated with pollutants on roads, car parks and other urban surfaces. The rainfall run-off from these urban surfaces typically enters a drainage system from which it is discharged into the water environment. Northern Ireland Water is responsible for much of the drainage system in urban areas. Measures to prevent pollution following prolonged heavy rainfall or to reduce the level of pollutants before discharge to the water environment are difficult and time consuming to design and implement in densely populated urban areas.

The civil works involved in installing sustainable urban drainage systems can cause considerable disruption if not planned and phased sensitively and designing and implementing effective solutions is necessarily a lengthy and complex process. If adequate time and expertise is not invested, the solutions identified are likely to fail to deliver, may have a short life span, cost much more than necessary or impose disproportionate burdens as a result of the disruption caused.

Investment by Northern Ireland Water in environmental improvements is planned through an Asset Management Planning (NIAMP) procedure and the level of investment is determined through a Price Control process by the Northern Ireland Authority for Utility Regulation. For the next investment period 2010 up to 2013 a draft determination of £316 million has been proposed for the waste water capital investment programme for Northern Ireland Water.

## Planning assumptions

For improvements in relation to urban diffuse and point source pollution associated with sewerage infrastructure the following assumptions have been applied:

- Improvements as planned for waste water treatment infrastructure up to 2013 under the water utilities current expenditure programme covered by the Price Control 2010 Business Plan (PC10), to meet the requirements of European Directives and local environmental regulation, will be sufficient to deliver good status in the associated water body and ensure no deterioration in the current class of all other water bodies.
- That future improvement in waste water treatment infrastructure to be financed under PC13 covering the period up to 2018, will be sufficient to deliver the water quality objectives established for 2015.

## Protected areas

Many water bodies in the three Northern Ireland river basin districts fall within protected areas. Protected areas have been designated under other European legislation because of their economic, environmental or social importance and the designation is designed to either protect their surface water or groundwater, or to conserve habitats or species that directly depend on those waters. The protected area may be a part of a water body, for example, bathing waters, or may be a group of water bodies, for example, freshwater fish waters. The protection, and where necessary, improvement of these areas are important objectives of river basin planning.

The legislative instruments under which the protected areas were established have their own associated objectives/standards. These objectives/standards and the deadlines for implementation set out in the legislation for the protected areas must be adhered to. In circumstances where both protected area and WFD apply then the more stringent objective/standard is employed. Where no deadline is stated in the specific protected area legislation, the deadlines set out in the WFD will be employed where it is appropriate.

Protected areas are often assessed for additional pollutants or quality elements that are not included in the WFD. For example, faecal coliform levels are assessed within bathing waters. In some cases these will be addressed through specific pollution reduction programmes to address the adverse impacts. In other situations measures have been developed ensure that compliance against these objectives/standards that apply within protected areas are achieved.



For improvements in surface water bodies designated as a protected area under the Habitats Directive for specific protected species the following applied:

- Water bodies that were classed as moderate in relation to the Freshwater Pearl Mussel would continue to be classed as moderate until there was evidence of recruitment.
- That the highest ecological quality status necessary to achieve sustained recruitment would be required in water bodies identified as pearl mussel sites.
- That good ecological status was sufficient to support a sustainable salmonid fishery providing there were no other restrictions to the migration of salmonid fish.

## The Methodology in Setting the Objectives

The starting point for establishing the environmental objectives was the classification results for 2009 using the guidance on environmental standards developed through the UK Technical Advisory Group (UKTAG).

In establishing the objectives for the River Basin Management Plans (RBMPs) the objectives that were set out in the 2008 draft plan were taken into account in establishing the final objectives, as it was considered that many of the pressures and influences on the water ecology would still apply in relation to the development of the plans. The decision process that was adopted for developing the proposed objectives in the draft plan was therefore still considered relevant in making judgements on what could be achievable through the RBMPs.

### Workshop Objective Evaluation

The initial objectives generated for the draft plans, by the application of the planning assumptions, were reviewed by scientific and technical staff involved in monitoring and assessment of water quality in Northern Ireland, through a series of workshops.

The workshops covered each Catchment Stakeholder Group Area and reviewed the geographical water quality data and environmental information available in each area. Each water body was examined within the context of its catchment to determine the impacts giving rise to the classification, for each element

monitored, and to identify the pressures that were impacting upon the water body. This information, together with the geo-referenced information on potential sources of pollution, pressure and impact information, additional local monitoring data and local knowledge of the area, was used to evaluate and verify the influences that were affecting the recorded classification and status. It also facilitated identification of the key pressures affecting the ecological status and the sectors that were contributing to those pressures.

The information obtained from the workshop was recorded in a database and used to inform discussion on the actions and measures that needed to be taken, together with existing measures, to improve the water environment and deliver good ecological status where considered feasible. It was an important aspect of the workshops to consider what improvement could be achieved through existing measures or whether additional or supplementary measures would assist in delivering good ecological status by 2015. The judgements were based on the assumptions highlighted and the expert knowledge and experience available. It enabled an evaluation to be made of what was considered achievable in terms of the proposed objectives and whether good status by 2015 was feasible. Where it was considered that existing and supplementary measures would not deliver good status by 2015 an alternative objective was set. The workshop also assisted in establishing the reasons why good status by 2015 was not considered achievable and what an appropriate alternative objective would be.

### **Objectives for the RBMPs**

In developing the objectives for the 2009 plan, the classification status used in the 2009 assessment was compared with the classification reported for 2008, to evaluate the significance of changes in classification that had taken place. The decisions on the objectives derived for the plans were therefore influenced by the decisions and judgements developed in creating the draft plan. A flow diagram setting out the procedure for developing the proposed objectives for the plans (Fig 1) was employed and this process took into consideration the anticipated improvement that would be achieved by implementing the proposed measures. Where the overall ecological status in the 2008 classification was consistent with the updated 2009 classification for the plan, the assessments made in establishing the objectives for the draft plans were assumed to be still valid for establishing the objectives for the 2009 plans. However, before establishing the objectives for these water bodies, a check was made against any new information to ensure that any previous planning assumptions were still valid, particularly the percentage deviation of elements from the target standard, that could affect the target date for achieving good status or a lesser objective.

Where the current classification or status differed from the previous recorded status a revised assessment taking into account the planning assumptions already identified and the information obtained from the objective workshops was

carried out. This therefore involved a reassessment of the objectives and any further or additional measures that would need to be employed to achieve good status by 2015 or later if considered appropriate. The process diagram set out Fig 1 was followed. For water bodies that had not been classified previously then the starting point was the planning assumptions already stated and any supporting data that was available.

## **Alternative Objectives**

Where it was judged that the current status cannot be improved to good status by 2015 or that the available measures will not be able to deliver good status or at least not until some time after 2015, an alternative objective was established. In setting an alternative objective there is also a clear requirement that the water body is not allowed to deteriorate.

An alternative objective may employ an extended deadline or a less stringent objective. An extended deadline was applied where it was judged that good status could be achieved but it would take longer to deliver than the target deadline of 2015, for the reasons outlined below:

- Natural conditions require a longer time to recover and thus prevents the timely achievement of good status; or
- It is technically unfeasible or disproportionately expensive to achieve good status by 2015; but it is feasible to achieve good status before 2027.

For example a number of water bodies are adversely affected by excess nutrient inputs from agricultural sources or a combination of agricultural and other sources. In the case of some of these water bodies, particularly loughs, the rate at which the natural balance of water plants and animals can be re-established, once nutrient inputs are reduced, is slow. Because of their naturally slow recovery rate, the water bodies are not expected to achieve good ecological status by 2015. In some cases, NIEA is estimating that the water body ecological quality may not be at good status until 2027.

In situations where it was considered that good status cannot be achieved in a water body as it has been affected by human activity in such a way that:

- it is not currently technically feasible to achieve good status by 2027 or it would be disproportionately expensive to do so by present methods.
- the situation cannot be addressed due to lack of action by another Member State.

an alternative objective was set. This established an objective delivering less than good ecological status and required that the reasons for setting such an

alternative objective are set out in the plan. Where an alternative objective has been set it will be subject to review every 6 years.

The reasons for establishing an alternative objective follow the guidance produced by UKTAG on **recommendations on a consistent list of reasons for setting alternative objectives**, as set out in the tables 2, 3 and 4 and summarised in the flow chart (Fig2.).

For those water bodies identified as protected areas under the Habitats Directive for the Freshwater Pearl Mussel (*Margaritifera margaritifera*) and that are in unfavourable condition, due to lack of recruitment, a less stringent objective of moderate by 2027 has been set. This is due to the uncertainty around recruitment being definitely established by that date, even if all water quality issues were addressed and all the elements were at good or high status by 2015. This uncertainty is a consequence of the long protracted life cycle of the Freshwater Pearl Mussel that makes it difficult to verify when recruitment has been successful and that there is a sufficient proportion and age range of juveniles to support sustainable recruitment.

There are other situations where an alternative objective may be set. This includes the establishment of a less stringent objective referred to as '**good ecological potential**' where a water body is designated as heavily modified or artificial. The identification of water bodies as heavily modified is detailed in a separate paper; [web reference](#). In setting objectives for such modified water bodies the ecological status objective is combined with modified potential objective to produce a combined objective. For example; where the ecological status objective for a modified water body is moderate by 2015 and the modified status assessment is good ecological potential, ie that all mitigating measures in relation to the modification are in place, then the overall objective for 2015 would be Moderate Ecological Potential. Further objectives will be set for such a water body until Good Ecological Potential is achieved.

## *Checking the objectives*

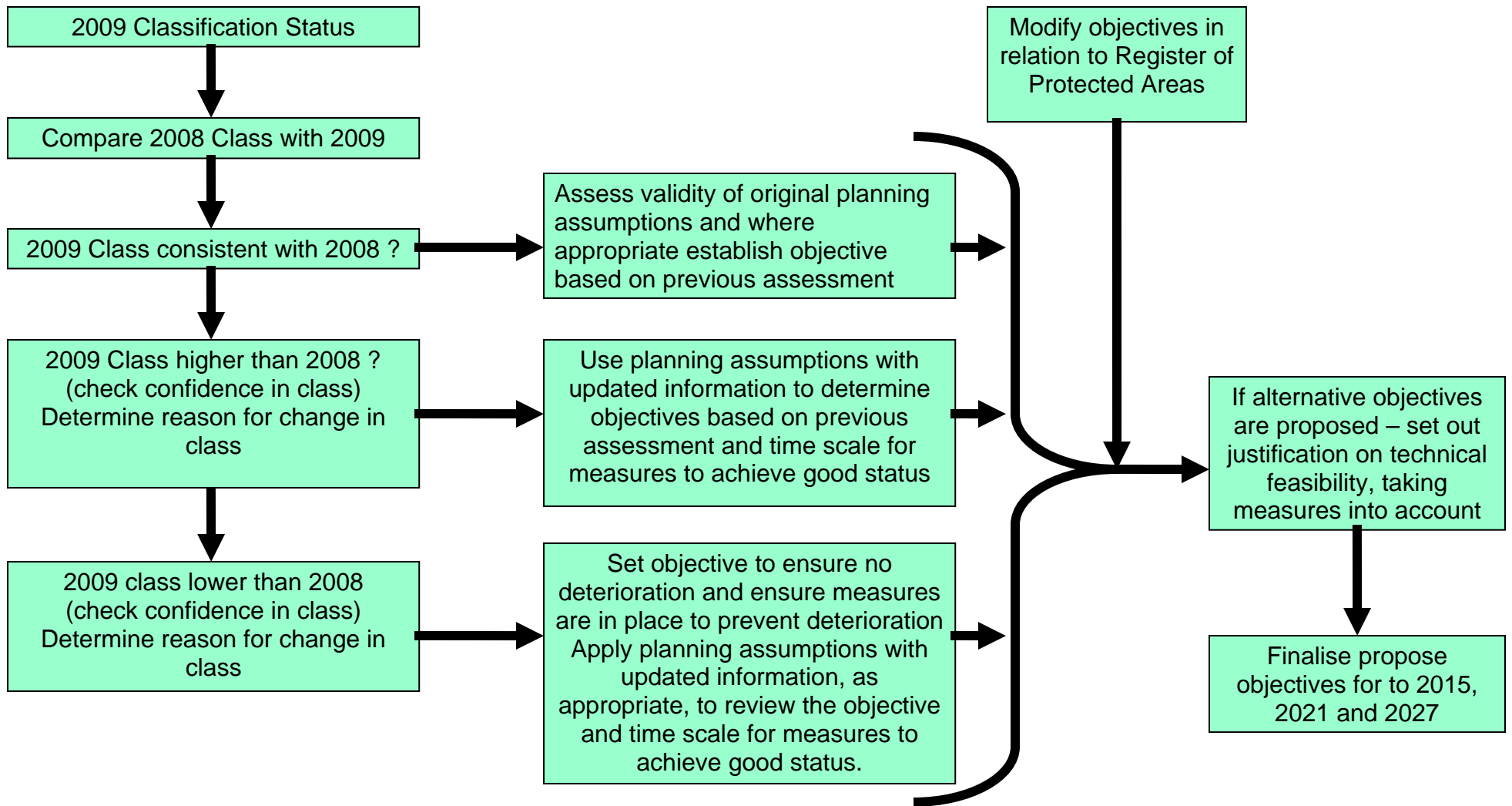
Through the series of workshops run by NIEA on the objectives established for the draft plans, a substantial degree of checking on the likelihood of achieving the objectives had been established. This information from the workshops was combined with improved information on the measures to evaluate and review the objectives for the RBMPs. This review took into account the monitoring information available as well as known impacts and planned improvements occurring in each water body.

In reviewing the viability of achieving the objective the following questions were applied to each objective.

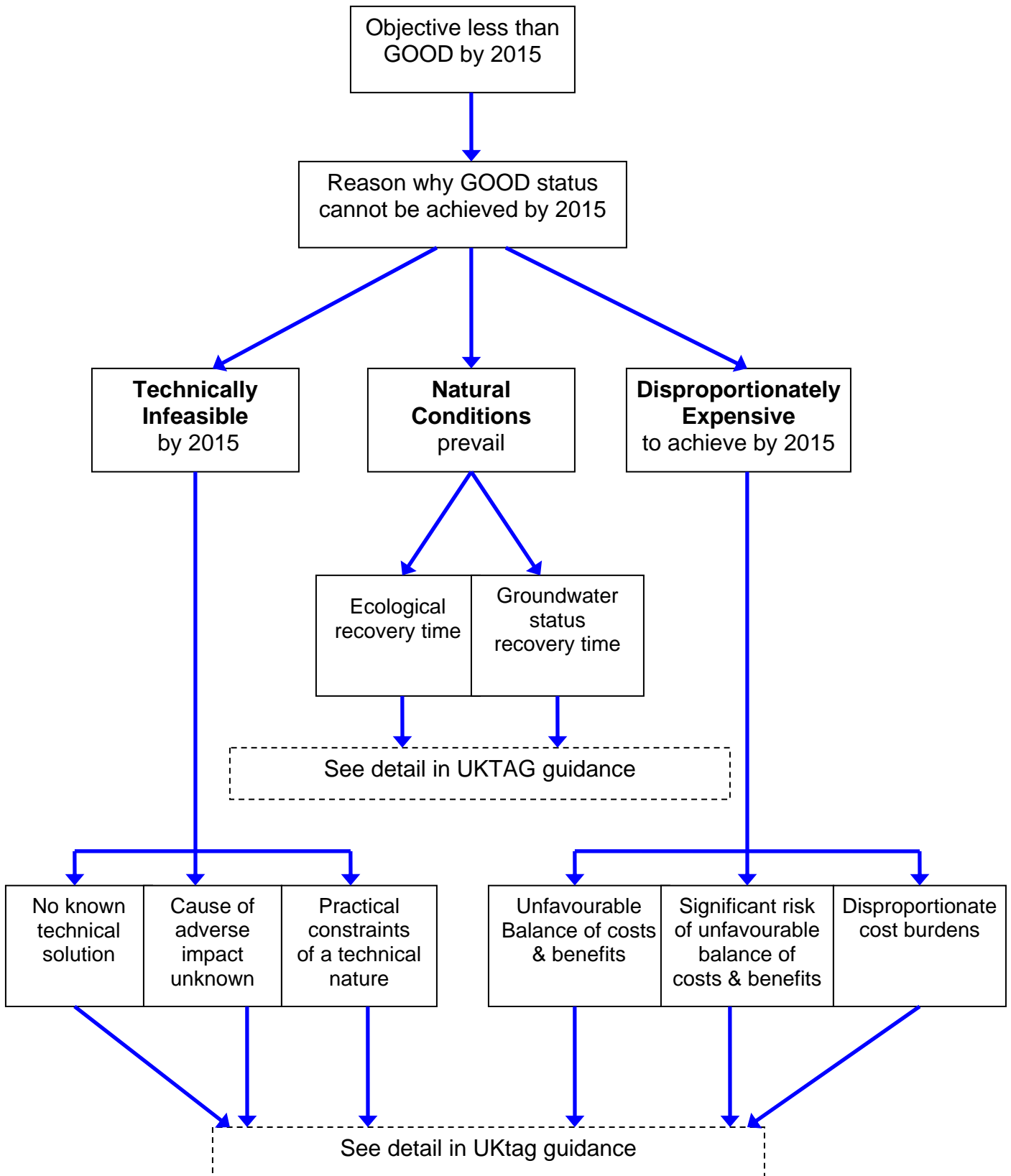
- Is there any reason why we cannot achieve good status within the first 6 year cycle?
- Is there a driver that requires that high status be achieved rather than good?

Where there was no reason to alter the proposed objective it was accepted as the objective. Where the objective was less than good by 2015 the pressures affecting water quality in the water body were further examined and the feasibility of raising the quality by employing additional or supplementary measures considered. Where it was considered that additional or supplementary measures would not assist in closing the gap any sooner an alternative objective was set and the reason for such an objective established. Our objectives are therefore dependent on what the measures to be implemented over the next six years are likely to achieve and what further improvement is considered feasible in subsequent planning cycles.

Fig 1 Objective Setting Process



**Fig 2 Process for Setting Alternative Objectives**



**Table 1 UKTAG recommendations on reasons for setting alternative objectives - Technically infeasible**

Reason	Sub-reason	Guidance notes
<p><b>Technically infeasible</b></p>	<p>No known technical solution</p>	<p>Applies where there is no practical technique for making the necessary improvement. <b>Does not include financial considerations.</b> Techniques which may be under development but which are not yet known to be effective in practice will fall into this category.</p> <p>Provides a justification for aiming to achieve a less stringent objective as provided under Article 4(5) – provided the other criteria of that Article are satisfied.</p>
	<p>Cause of adverse impact unknown</p>	<p>Applies where a water body is classed as worse than good but the reason (the pressure or the specific source of the pressure) for this failure has not yet been determined. Consequently, a solution cannot feasibly be identified.</p> <p>Whilst the cause of the problem is investigated this provides a justification for extending the deadline for the achievement of the objectives as provided under Article 4(4) – provided all other criteria of that Article are satisfied.</p>
	<p>Practical constraints of a technical nature</p>	<p>Practical constraints of a technical nature prevent implementation of the measure by an earlier deadline.</p> <p>Includes administrative constraints in terms of commissioning, gaining permission for, and undertaking the necessary works. Does not include constraints due to a lack of legislative mechanisms or of funding.</p> <p>Provides a justification for extending the deadline for the achievement of the objectives as provided under Article 4(4)(a) – provided all other criteria of that Article are satisfied.</p>
	<p>Problem cannot be addressed because of lack of action by other countries</p>	<p>Application expected to be very limited in the UK. May possibly be applicable:</p> <ul style="list-style-type: none"> <li>(a) in the international river basin districts shared between Northern Ireland and the Republic of Ireland if the problem cannot be resolved through the established partnership working arrangements for those basins.</li> <li>(b) where problems are caused by aerial deposition of transboundary pollutants and (a) local mitigation cannot solve the problem; and (b) discussions with the other countries has not led to effective action.</li> </ul> <p>Where this reason is applied, the Commission, together with any other Member State concerned, must be informed about the issue under Article 12</p> <p>Set an extended deadline and review following response from Commission.</p>



**Table 2 UKTAG recommendations on reasons for setting alternative objectives - Natural Conditions**

Reason	Sub-reason	Guidance notes
<p><b>Natural Conditions</b></p>	<p>Ecological recovery time</p>	<p>Applies where there is expected to be a delay before the biological quality of the water body recovers.</p> <p>The delay may be due to the time taken for the plants and animals to re-colonise and become established after the hydromorphological and chemical and physicochemical conditions have been restored to 'good'; or the time taken for the habitat conditions to 'stabilise' after improvement works.</p> <p>For example, may apply to lakes affected by eutrophication.</p> <p>Provides a justification for extending the deadline for the achievement of the objectives as provided under Article 4(4) – provided all other criteria of that Article are satisfied. In this case the deadline is not limited to 2027 where the natural conditions are such that the objectives cannot be achieved within that period.</p>
	<p>Groundwater status recovery time</p>	<p>Applies where the climatic or geological characteristics dictate the rate at which groundwater levels or quality recovers or saline (or other) intrusions reverse once over-abstraction has been addressed.</p> <p>Provides a justification for extending the deadline for the achievement of the objectives as provided under Article 4(4) – provided all other criteria of that Article are satisfied. In this case the deadline is not limited to 2027 where the natural conditions are such that the objectives cannot be achieved within that period.</p>

**Table 3 UKTAG recommendations on reasons for setting alternative objectives - Disproportionately Expensive**

Reason	Sub-reason	Guidance notes
<b>Disproportionately expensive</b>	Unfavourable balance of costs and benefits	<p>Attaining the default objective is not worthwhile because the costs of the measure are out of proportion to the benefits, taking into account qualitative as well as quantitative information.</p> <p>Provides a justification for seeking to achieve a less stringent objective as provided by Article 4(5) or, an extended deadline as provided by Article 4(4).</p> <p>The latter may apply where, for example, the phasing of measures can produce a more favourable balance of costs and benefits. In both cases, the action may only be taken provided the other criteria contained in those articles are satisfied.</p>
	Significant risk of unfavourable balance of costs and benefits	<p>Applies where there is a sufficiently low confidence that a water body is adversely impacted. In these circumstances, there is a significant risk that putting in place additional measures to attain the objective is not worthwhile (because the default objective may already be achieved), producing no benefits and wasted investments. Potential measures can still be implemented where there is general agreement to proceed even where we have low confidence that a particular water body is adversely affected.</p> <p>Provides justification for an extended deadline whilst further monitoring and assessment is undertaken to improve the confidence that the default objective is not being achieved</p>
	Disproportionate burdens	<p>Implementation of the measure by an earlier deadline would impose disproportionate burdens. Applies where the measure would be:</p> <ul style="list-style-type: none"> <li>(a) unaffordable to implement within a particular timetable without creating disproportionate burdens for particular sectors or parts of society); or</li> <li>(b) the only solution would be significantly at odds with the polluter pays principle.</li> </ul> <p>Provides a justification for extending the deadline for the achievement of the objectives as provided under Article 4(4) – provided all other criteria of that Article are satisfied.</p>

## What will we achieve by 2015 and beyond?

The improvement that we plan to achieve in each of the three river basin districts is set out in three summary tables below (tables 4-6). Other tables for each river basin district summarise what we plan to achieve in the different types of water body. These water body type tables ( North west: tables 7-14), Neagh Bann: tables 15-21, North Eastern: tables 22-29) separate out what we plan to achieve in the artificial and heavily modified water bodies, as well as those that are more natural in character. Further details about the objectives for individual water bodies, the reason for less than good status and the measures that we plan to employ to improve the status and the geographical location of the water bodies are set out in the River Basin Management Plan web site.

<b>Table 4</b>		<b>Planned improvements in the ecological status of water bodies within the North Western RBD</b>			
		<b>Percentage of water bodies in good or better condition by type</b>			
<b>Types water bodies</b>	<b>2009</b>	<b>2015</b>	<b>2021</b>	<b>2027</b>	
<b>Rivers</b>	30.1%	69.9%	95.2%	96.2%	
<b>Lakes</b>	44.4%	55.6%	100.0%	100.0%	
<b>Estuaries</b>	0.0%	50.0%	100.0%	100.0%	
<b>Coastal Waters</b>	0.0%	0.0%	100.0%	100.0%	
<b>Groundwater</b>	100.0%	100.0%	100.0%	100.0%	
<b>All Water Bodies</b>	42.1%	74.1%	96.2%	97.0%	

<b>Table 5</b>		<b>Planned improvements in the ecological status of water bodies within the Neagh Bann RBD</b>			
		<b>Percentage of water bodies in good or better condition by type</b>			
<b>Types water bodies</b>	<b>2009</b>	<b>2015</b>	<b>2021</b>	<b>2027</b>	
<b>Rivers</b>	14.9%	48.2%	96.9%	98.4%	
<b>Lakes</b>	10.0%	10.0%	40.0%	100.0%	
<b>Estuaries</b>	0.0%	50.0%	100.0%	100.0%	
<b>Coastal Waters</b>	33.3%	33.3%	100.0%	100.0%	
<b>Groundwater</b>	92.9%	92.9%	100.0%	100.0%	
<b>All Water Bodies</b>	18.7%	48.9%	95.1%	98.6%	

<b>Table 6</b>		<b>Planned improvements in the ecological status of water bodies within the North Eastern RBD</b>			
		<b>Percentage of water bodies in good or better condition by type</b>			
<b>Types water bodies</b>	<b>2009</b>	<b>2015</b>	<b>2021</b>	<b>2027</b>	
<b>Rivers</b>	13.5%	47.7%	80.2%	100.0%	
<b>Lakes</b>	33.3%	33.3%	33.3%	100.0%	
<b>Estuaries</b>	0.0%	0.0%	0.0%	100.0%	
<b>Coastal Waters</b>	43.8%	68.8%	100.0%	100.0%	
<b>Groundwater</b>	87.5%	87.5%	87.5%	100.0%	
<b>All Water Bodies</b>	21.3%	51.1%	80.1%	100.0%	

Projected improvements in the North Western River Basin District for each type of water body

Table 7	Projected improvements to the status of rivers within the North Western RBD (not artificial or heavily modified)							
River Ecological Status	Number of river water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
High	1	0.5%	1	0.5%	1	0.5%	1	0.5%
Good	62	31.2%	141	70.9%	190	95.5%	190	95.5%
Moderate	107	53.8%	57	28.6%	8	4.0%	8	4.0%
Poor	29	14.6%	0	0.0%	0	0.0%	0	0.0%
Bad	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	199		199		199		199	

Table 8	Projected improvements to the status of rivers within the North Western RBD for artificial or heavily modified water bodies							
River Ecological Status	Number of river water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
Good	0	0.0%	4	40.0%	8	80.0%	10	100.0%
Moderate	6	60.0%	6	60.0%	2	20.0%	0	0.0%
Poor	4	40.0%	0	0.0%	0	0.0%	0	0.0%
Bad	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	10		10		10		10	

Table 9		Projected improvements to the status of lakes within the North Western RBD (not artificial or heavily modified)							
Lake Ecological Status		Number of lake water bodies and percentage							
		2009		2015		2021		2027	
		No	%	No	%	No	%	No	%
<b>High</b>		0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Good</b>		4	80.0%	4	80.0%	5	100.0%	5	100.0%
<b>Moderate</b>		1	20.0%	1	20.0%	0	0.0%	0	0.0%
<b>Poor</b>		0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Bad</b>		0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>		5		5		5		5	

Table 10		Projected improvements to the status of lakes within the North Western RBD for artificial or heavily modified water bodies							
Lake Ecological Status		Number of lake water bodies and percentage							
		2009		2015		2021		2027	
		No	%	No	%	No	%	No	%
<b>Good</b>		0	0.0%	1	25.0%	4	100.0%	4	100.0%
<b>Moderate</b>		4	100.0%	3	75.0%	0	0.0%	0	0.0%
<b>Poor</b>		0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Bad</b>		0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>		0	0.0%	1	25.0%	4	100.0%	4	100.0%

Table 11	Projected improvements to the status of transitionals within the North Western RBD (not artificial or heavily modified)							
Transitional (estuary) Ecological Status	Number of transitional water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
High	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Good	0	0.0%	1	100.0%	1	100.0%	1	100.0%
Moderate	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Poor	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bad	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	1		1		1		1	

Table 12	Projected improvements to the status of transitionals within the North Western RBD for artificial or heavily modified water bodies							
Transitional (estuary) Ecological Status	Number of transitional water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
Good	0	0.0%	0	0.0%	1	100.0%	1	100.0%
Moderate	1	100.0%	1	100.0%	0	0.0%	0	0.0%
Poor	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bad	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	0	0.0%	0	0.0%	1	100.0%	1	100.0%

<b>Table 13</b>	<b>Projected improvements to the status of coastal waters within the North Western RBD (not artificial or heavily modified)</b>							
<b>Coastal Ecological Status</b>	<b>Number of coastal water bodies and percentage</b>							
	<b>2009</b>		<b>2015</b>		<b>2021</b>		<b>2027</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
<b>High</b>	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Good</b>	0	0.0%	0	0.0%	1	100.0%	1	100.0%
<b>Moderate</b>	1	100.0%	1	100.0%	0	0.0%	0	0.0%
<b>Poor</b>	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Bad</b>	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>	1		1		1		1	

<b>Table 14</b>	<b>Projected improvements to the status of groundwater within the North Western RBD</b>							
<b>Groundwater Ecological Status</b>	<b>Number of groundwater water bodies and percentage</b>							
	<b>2009</b>		<b>2015</b>		<b>2021</b>		<b>2027</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
<b>Good</b>	45	100.0%	45	100.0%	45	100.0%	45	100.0%
<b>Poor</b>	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>	45		45		45		45	

Projected improvements in the Neagh Bann River Basin District for each type of water body

Table 15		Projected improvements to the status of rivers within the Neagh Bann RBD (not artificial or heavily modified)							
River Ecological Status		Number of river water bodies and percentage							
		2009		2015		2021		2027	
		No	%	No	%	No	%	No	%
<b>High</b>		1	0.4%	1	0.4%	1	0.4%	1	0.4%
<b>Good</b>		37	16.2%	115	50.4%	222	97.4%	224	98.2%
<b>Moderate</b>		110	48.2%	111	48.7%	5	2.2%	3	1.3%
<b>Poor</b>		71	31.1%	1	0.4%	0	0.0%	0	0.0%
<b>Bad</b>		9	3.9%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>		228		228		228		228	

Table 16		Projected improvements to the status of rivers within the Neagh Bann RBD for artificial or heavily modified water bodies							
River Ecological Status		Number of river water bodies and percentage							
		2009		2015		2021		2027	
		No	%	No	%	No	%	No	%
<b>Good</b>		0	0.0%	7	25.9%	24	88.9%	26	96.3%
<b>Moderate</b>		8	29.6%	18	66.7%	3	11.1%	1	3.7%
<b>Poor</b>		16	59.3%	2	7.4%	0	0.0%	0	0.0%
<b>Bad</b>		3	11.1%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>		27		27		27		27	



Table 17		Projected improvements to the status of lakes within the Neagh Bann RBD (not artificial or heavily modified)							
Lake Ecological Status		Number of lake water bodies and percentage							
		2009		2015		2021		2027	
		No	%	No	%	No	%	No	%
<b>High</b>		0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Good</b>		0	0.0%	0	0.0%	0	0.0%	4	100.0%
<b>Moderate</b>		0	0.0%	1	25.0%	4	100.0%	0	0.0%
<b>Poor</b>		1	25.0%	3	75.0%	0	0.0%	0	0.0%
<b>Bad</b>		3	75.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>		4		4		4		4	

Table 18		Projected improvements to the status of lakes within the Neagh Bann RBD for artificial or heavily modified water bodies							
Lake Ecological Status		Number of lake water bodies and percentage							
		2009		2015		2021		2027	
		No	%	No	%	No	%	No	%
<b>Good</b>		1	16.7%	1	16.7%	4	66.7%	6	100.0%
<b>Moderate</b>		3	50.0%	3	50.0%	2	33.3%	0	0.0%
<b>Poor</b>		1	16.7%	2	33.3%	0	0.0%	0	0.0%
<b>Bad</b>		1	16.7%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>		6		6		6		6	

Table 19	Projected improvements to the status of transitionals within the Neagh Bann RBD for artificial or heavily modified water bodies							
Transitional (estuary) Ecological Status	Number of transitional water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
Good	0	0.0%	1	50.0%	2	100.0%	2	100.0%
Moderate	2	100.0%	1	50.0%	0	0.0%	0	0.0%
Poor	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bad	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	2		2		2		2	

Table 20	Projected improvements to the status of coastal waters within the Neagh Bann RBD (not artificial or heavily modified)							
Coastal Ecological Status	Number of coastal water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
High	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Good	1	33.3%	1	33.3%	3	100.0%	3	100.0%
Moderate	2	66.7%	2	66.7%	0	0.0%	0	0.0%
Poor	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bad	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	3		3		3		3	

Table 21	Projected improvements to the status of groundwater within the Neagh Bann RBD							
Groundwater Ecological Status	Number of groundwater water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
<b>Good</b>	13	92.9%	13	92.9%	14	100.0%	14	100.0%
<b>Poor</b>	1	7.1%	1	7.1%	0	0.0%	0	0.0%
<b>Total</b>	14		14		14		14	

Projected improvements in the North Eastern River Basin District for each type of water body

Table 22	Projected improvements to the status of rivers within the North Eastern RBD (not artificial or heavily modified)							
River Ecological Status	Number of river water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
High	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Good	15	16.1%	51	54.8%	83	89.2%	93	100.0%
Moderate	51	54.8%	41	44.1%	10	10.8%	0	0.0%
Poor	23	24.7%	1	1.1%	0	0.0%	0	0.0%
Bad	4	4.3%	0	0.0%	0	0.0%	0	0.0%
Total	93		93		93		93	

Table 23	Projected improvements to the status of rivers within the North Eastern RBD for artificial or heavily modified water bodies							
River Ecological Status	Number of river water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
Good	0	0.0%	2	11.1%	6	33.3%	18	100.0%
Moderate	10	55.6%	16	88.9%	12	66.7%	0	0.0%
Poor	4	22.2%	0	0.0%	0	0.0%	0	0.0%
Bad	4	22.2%	0	0.0%	0	0.0%	0	0.0%
Total	18		18		18		18	

Table 24		Projected improvements to the status of lakes within the North Eastern RBD (not artificial or heavily modified)							
Lake Ecological Status		Number of lake water bodies and percentage							
		2009		2015		2021		2027	
		No	%	No	%	No	%	No	%
<b>High</b>		0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Good</b>		0	0.0%	0	0.0%	0	0.0%	1	100.0%
<b>Moderate</b>		0	0.0%	0	0.0%	1	100.0%	0	0.0%
<b>Poor</b>		0	0.0%	1	100.0%	0	0.0%	0	0.0%
<b>Bad</b>		1	100.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>		1		1		1		1	

Table 25		Projected improvements to the status of lakes within the North Eastern RBD for artificial or heavily modified water bodies							
Lake Ecological Status		Number of lake water bodies and percentage							
		2009		2015		2021		2027	
		No	%	No	%	No	%	No	%
<b>Good</b>		1	50.0%	1	50.0%	1	50.0%	2	100.0%
<b>Moderate</b>		0	0.0%	0	0.0%	1	50.0%	0	0.0%
<b>Poor</b>		1	50.0%	1	50.0%	0	0.0%	0	0.0%
<b>Bad</b>		0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>		2		2		2		2	

Table 26	Projected improvements to the status of coastal waters within the North Eastern RBD (not artificial or heavily modified)							
Coastal Ecological Status	Number of coastal water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
High	2	14.3%	2	14.3%	2	14.3%	2	14.3%
Good	4	28.6%	8	57.1%	12	85.7%	12	85.7%
Moderate	8	57.1%	4	28.6%	0	0.0%	0	0.0%
Poor	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bad	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	14		14		14		14	

Table 27	Projected improvements to the status of coastal waters within the North Eastern RBD for artificial or heavily modified water bodies							
Coastal Ecological Status	Number of transitional water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
Good	1	50.0%	1	50.0%	2	100.0%	2	100.0%
Moderate	1	50.0%	1	50.0%	0	0.0%	0	0.0%
Poor	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Bad	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	2		2		2		2	

Table 28	Projected improvements to the status of transitionals within the North Eastern RBD for artificial or heavily modified water bodies							
Transitional (estuary) Ecological Status	Number of transitional water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
<b>Good</b>	0	0.0%	0	0.0%	0	0.0%	3	100.0%
<b>Moderate</b>	2	66.7%	3	100.0%	3	100.0%	0	0.0%
<b>Poor</b>	0	0.0%	0	0.0%	0	0.0%	0	0.0%
<b>Bad</b>	1	33.3%	0	0.0%	0	0.0%	0	0.0%
<b>Total</b>	3		3		3		3	

Table 29	Projected improvements to the status of groundwater within the North Eastern RBD							
Groundwater Ecological Status	Number of groundwater water bodies and percentage							
	2009		2015		2021		2027	
	No	%	No	%	No	%	No	%
<b>Good</b>	7	87.5%	7	87.5%	7	87.5%	8	100.0%
<b>Poor</b>	1	12.5%	1	12.5%	1	12.5%	0	0.0%
<b>Total</b>	8		8		8		8	

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