Scottish Water

Strategic Environmental Assessment of the Water Resource Plan 2008

Summary of Environmental Report

May 2008

Entec UK Limited

Report for

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Summary

The Water Resource Plan and Strategic Environmental Assessment

Scottish Water provides water and wastewater services to approximately 5 million people and 126,000 businesses across Scotland.

Scottish Water has produced a Water Resource Plan, which sets out where it plans to invest and the improvements it intends to make to balance the supply of water with demand over the next twenty five years. The 2008 Water Resource Plan is the first comprehensive plan that has been produced for the whole of Scotland, and that is subject to consultation. Once adopted, the Water Resource Plan will be reviewed, revised and updated every 4 years (in line with Scottish Water's investment plan).

In developing the 2008 Water Resource Plan, Scottish Water has considered and defined the level of service (expressed as Drought Order frequency) that it intends to provide to its customers. To provide this level of service, Scottish Water will need to invest to improve the security of water supply and resilience to droughts. In identifying the level of service; current and future supplies of water, capacity of treatment works, demand, and other issues in each of the water resource zones (areas that share the same sources or are linked by supply pipelines) have been considered. Scottish Water has prioritised investment in WRP08 based on the use of the Security of Supply Index, with consideration also given to other known problematic zones and to achieve a balance of investment across Scotland.

In each water resource zone prioritised for investment, Scottish Water has considered the range of changes that could be made to improve the balance between supply and demand, from helping people to use water more efficiently and repairing leaking pipes, to abstracting more water from rivers or lochs. The Water resource planning process encourages water companies to consider the impacts on customer bills and the environment of each of the strategic options available, before identifying the specific investment strategy that they wish to adopt in the Water Resource Plan.

As part of the preparation of the Water Resource Plan, Entec (on behalf of Scottish Water) has undertaken a Strategic Environmental Assessment (SEA), which is summarised here and reported more fully in the SEA Environmental Report.

Strategic Environmental Assessment is a statutory requirement for certain plans or programmes that could have significant environmental effects. It aims to integrate environmental and relevant social and economic factors into the preparation of the plan, to improve the plan and enhance environmental protection. It also includes requirements that aim to increase public participation and improve the transparency of decision making.

Scottish Water's supply area

Any plan, including the Water Resource Plan, needs to take account of the region it affects and sustainability issues including cultural heritage, biodiversity and designated landscapes (e.g. areas of natural beauty) need to be considered. Plans will also need to take account of the need to enhance employment opportunities, reduce levels of income deprivation, and provide facilities to meet the needs of local communities. The potential impacts on environmental quality, particularly the contribution to further improvements in air and water quality, and the need for reductions in resource use, transport, and waste, are also important. Based on an analysis of recent relevant information, the key environmental issues for Scottish Water's supply area are summarised in **Table S.1** below.

Table S.1 Summary of environmental problems relevant to the Water Resource Plan

Problem	Implications for the WRP
UK Biodiversity Action Plan (BAP) Priority habitats and species that are still classified as "in decline"	There are a number of UK BAP species that are still reported as declining. This issue that should be recognised and the options in the WRP should minimise any negative impact and maximise any opportunities to support improvements in biodiversity. This should extend to supporting improvements in designated habitats and species.
Potential risks to fish and fisheries from cross catchment transfers of water which could introduce parasites or non-native species to catchments which support fisheries.	The WRP may need to take account of the location of freshwater fisheries and whether or not options to transfer water between catchments would be likely to have an adverse effect.
Decrease in seabird numbers, and flattening off of the upward trend in numbers of water birds	Declining biodiversity is an issue that should be recognised and the options in the WRP should minimise any negative impact and maximise any opportunities to support improvements in biodiversity.
Ongoing trend towards an aging population	The WRP may need to take account of the different household sizes and water use patterns associated with an older population.
Lower life expectancy than other countries in Western Europe	The WRP should help to support drinking water quality, and contribute to supporting any opportunities for recreation or education that supports healthier lifestyles.
Economic growth in Scotland, although positive, has been lower than for other parts of the UK	Strategies to encourage and support economic development may change the nature and location of industrial water demand.
High levels of unemployment in deprived areas, and relatively high levels of income deprivation	The WRP is not expected to have significant impacts on deprivation or income.
Risks to the status of water bodies from abstraction and flow regulations	Options that include changes in abstraction should ensure that they do not increase the risk to water bodies, and reduce it where possible.
Transport is an increasingly significant source of air emissions	Implementation of the options in the WRP should seek to minimise their transport requirements.
Energy consumption by domestic, transport and service sectors has risen significantly (although use by industry has fallen)	The energy consumption of the options should be considered and the environmental and social effects minimised where possible.
The average amount of waste being produced by households is increasing	Any increase in waste generation from construction or operation of the options included in the WRP will add to an increasing production of waste for disposal.

Problem	Implications for the WRP
The majority of housing stock falls short of the new Scottish Housing Quality Standard	The WRP is not expected to have a significant impact on the quality of housing stock.

Approach to assessing the potential impacts

The Strategic Environmental Assessment considers the potential impacts of the strategic options that could be included in the Water Resource Plan. In order to assess the impacts, ten objectives were developed. These objectives were developed by considering the requirements of the legislation, the environmental, social and economic issues identified during the review of baseline information (and summarised in **Table S.1**), and the relationship of the Water Resource Plan with other relevant plans and programmes, each with their own objectives. The ten objectives are as follows:

- 1. **Economy and employment**: To enhance the economic performance of Scotland and increase economic opportunity;
- 2. **Health**: To protect human health, and safeguard or enhance living environments;
- 3. **Community wellbeing**: To enhance the quality of life in local communities;
- 4. **Landscape**: To protect and enhance the character, diversity and qualities of Scotland's landscapes;
- 5. **Historic environment and cultural heritage**: To protect and, where appropriate, enhance Scotland's historic environment;
- 6. **Use of water**: To encourage efficient water use;
- 7. **Use of other resources, including waste**: To encourage the responsible management of natural resources and waste;
- 8. **Water**: To protect and enhance the water environment (including ground, surface and coastal waters);
- 9. **Energy, air and climate**: To reduce energy use and its impacts, and limit the potential consequences of climate change; and to help to protect and improve air quality; and
- 10. **Wildlife and biodiversity**: To avoid damage to, and improve, biodiversity, flora and fauna.

Under each of these objectives, a series of key questions helped to identify the types of issues that need to be considered.

The SEA objectives were used to consider the potential impacts of the Water Resource Plan by looking at the following issues:

- The implications of choosing a particular level of service compared to alternative levels of service;
- The effects of the range of strategic options available to Scottish Water to meet their proposed level of service; and
- The effects of the combinations of strategic options that are proposed for each of the water resource zones in the Water Resource Plan.

The potential impacts of alternative levels of service

For the 2008 Water Resource Plan, Scottish Water have chosen the same level of service for all water resource zones in Scotland, This replaces a previous system of having variable levels of service, dependent on the size of the population served by a water resource zone.

By increasing the level of service within certain water resource zones, Scottish Water will be able to provide a secure supply of water under more severe drought conditions. This will in turn have a positive effect on the protection of human health, as it will result in a greater security of supply and minimise the need for measures that restrict water use and reduce the likelihood of emergency measures such as standpipes and rota cuts being necessary.

Decreasing the level of service would in theory increase the potential frequency of implementing Drought Orders which may have a negative impact on community wellbeing by increasing the likelihood of amenity and recreational activities being limited through restrictions on non-essential uses of water e.g. filling swimming pools. There may also be negative effects on the water environment and any water dependent species if abstraction beyond licence conditions or from a temporary source was required and authorised.

Conversely, decreasing the level of service may have a positive effect on securing more efficient water use as drought management measures with the objective of reducing demand and reducing the volume of water wasted through leakage would be likely to be required more frequently.

In practice there will be no immediate reduction in level of service in those water resources zones that previously had a higher level of service, as nothing will actively be done to change the existing position.

The potential impacts of the strategic options

Each of the strategic options was assessed against the ten SEA objectives to identify its potential impacts. The assessments were based on the nature of the effect, its timing and geographic scale, the sensitivity of the people or environment that could be affected and how long the effect might last.

Each of the strategic options has a different effect on the objectives. However, in considering them all, some trends emerge.

In relation to the economic performance of Scotland and economic opportunity, most of the options would require people during construction, although for some, such as optimising water treatment works or reducing pressure in supply pipes, there is little or no construction required. Even where construction is required, the economic impact is likely to be relatively minor, short

term and temporary in most cases, as it will only last for the construction period and is likely to draw in workers from a national or international pool rather than from local communities. The exceptions to this are the largest construction projects, for example a new desalination plant or a new reservoir. The impacts on employment are also likely to be greater for options that generate ongoing employment, for example those to detect and repair leaks.

Construction activities will have potential impacts on local communities, landscape, the historic environment, and wildlife. In each case, options that require significant amounts of construction, either at a single site or over a long distance (for example a pipeline), could disturb people and the environment. The significance of this will depend on the exact location of the site, the sensitivity of local receptors, and the way in which construction is managed, and so is uncertain for the strategic options (it could be a negative impact, or may not be significant).

Although all the strategic options help to manage supply and demand to improve the security of supply, only the option for a new reservoir would be expected to have a potentially significant impact on health (through additional recreational opportunities). This would depend on where it was located and the extent to which it provided and added to existing opportunities for water and land-based recreation.

The options to reduce customer demand (for example through metering or water audits) and the options to reduce leakage in supply pipes all help to improve water efficiency and reduce the amount of water that needs to be taken from the environment. On the other hand, options to increase supply, for example by abstracting more from rivers or lakes do not have an effect on water efficiency, and some could have a negative impact on water bodies by increasing the amount that is abstracted from them.

Many of the options have impacts through their need to use resources. For example, options that increase pipelines may require plastics and produce spoil for disposal, while new abstractions and treatment works could use a wider range of materials. The largest construction projects would be expected to have the most significant effects, for example the desalination plant, new treatment works, and new reservoir storage. For some of the other options, for example metering, audits, and improving network links, the significance of any impact would depend on the scale and nature of the work undertaken. Where significant amounts of materials are required, this is likely to be associated with significant effects on energy use, through the energy used for extraction, processing and transport of the materials. In addition, options that require a lot of transport for surveys or because of dispersed activity (e.g. at households rather than single sites) could also have negative impacts on energy use, air quality and emissions of greenhouse gases.

The potential impacts of the options in each of the water resource zones

The SEA has also considered combinations of strategic options, based on the specific schemes being proposed for each of 12 water resource zones initially identified for investment. This assessment was based on the combination of strategic options, rather than the specific details of the options proposed, in line with the strategic approach discussed and agreed in the Scoping Report. It is anticipated that the proposed schemes for an additional 6 water resources zones that are included in the Water Resource Plan but do not currently have options developed for them will also be a combination of the strategic options that have been assessed in this report.

In many cases, the effects of the combinations were the sum of the effects of the individual strategic options. However, for some, the different strategic options had different effects when implemented in combination. For example, some combinations of options aim to reduce leakage and increase abstraction and as such would have an uncertain impact on energy use, as reducing the volume of water lost via leakage will reduce the energy required for abstraction and water treatment, but an increase in abstraction will result in potential increases in energy associated with pumping and treatment. Furthermore, leakage detection will increase energy consumption associated with transport.

Where a new or increased abstraction is proposed, a new Controlled Activities Regulations (CAR) licence will also be required. Whilst an unlicensed abstraction could have negative impacts on the water body, people and the wildlife it supports; the CAR licence would impose appropriate conditions regarding the timing, frequency and volume of the abstraction to prevent negative impacts. It can therefore be assumed that in combination, a new or increased abstraction and a new CAR licence would not have a significant impact.

Conclusions

The SEA helps to identify the range of potential impacts from the different strategic options that Scottish Water can and has considered in developing its Water Resource Plan. The SEA has identified that for many of the strategic options and combinations of options, there is no significant impact on SEA objectives, often because the scheme is likely to be relatively small in scale or any impacts will only last for the construction period. In some cases, there is likely to be a significant positive impact, for example on water resources through the options that reduce demand or leakage. In others, a negative impact is expected, mostly related to use of resources and energy during construction. Where negative impacts have been identified, Scottish Water will consider mitigation measures to minimise the impacts on local communities and the environment. For many of the options and SEA objectives, the relationship is uncertain. This uncertainty often results from lack of clarity about whether the effect will be significant or not, with some uncertain because of a combination of potentially positive and negative effects. In these cases, Scottish Water will consider relevant mitigation to reduce the likelihood.

Consultation on the Environmental Report

This report is being issued as part of the consultation on the Water Resource Plan. It supports the Water Resource Plan by setting out the potential environmental and social impacts associated with the strategic options for managing supply and demand.

This consultation is key to providing assurance or comment on whether the most relevant potential impacts have been identified, or whether there are other relevant potential impacts that could be included in the assessment. While Scottish Water would welcome any comments on the Environmental Report, the following two questions are particularly important:

> Does the assessment set out in the Environmental Report identify the most relevant potential impacts of the strategic options?
>
> Are there other potential impacts that should have been identified that would have affected the choice of options included in the Water Resource Plan?

The consultation period for the Water Resource Plan will run from 30th May 2008 to 30th August 2008.

Where people have comments on both the Water Resource Plan and the Environmental Report, comments on this report can be included in a single response to the consultation. If you wish to comment on both documents details on how to do so are presented in the Summary Report for the Water Resource Plan, a copy of which can be obtained from Scottish Water's website at www.scottishwater.co.uk.

If you wish to respond solely to the SEA consultation, please send your comments in writing to:

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Avenue North

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Or by email to WRP08@scottishwater.co.uk

The closing date for responses is 30th August 2008.

After the consultation

Once the consultation has finished, Scottish Water will provide information on the adoption of the plan, and how it has been affected by any comments received during the consultation. The Strategic Environmental Assessment process also requires Scottish Water to monitor the effects of the plan in practice, and to identify any effects that were not considered in the Environmental Report.

The agreed options for managing water supply and demand contained in the Water Resource Plan will need to be implemented through specific projects. As part of this process, each project may be subject to further assessment to understand and manage any potential environmental and social impacts. These assessments will take account of the issues discussed in this report but will also be informed by the greater detail available as the work progresses about construction techniques, building materials, and agreed locations and routes. These might include Appropriate Assessment, required by the Habitats Regulations 1994, or Environmental Impact Assessment. SEPA is also expected to consider the effects of any projects involving abstraction from surface or ground waters when considering whether to grant or extend an abstraction licence.

Once the Water Resource Plan is implemented, with its component projects in place, its effects on the environment and people will need to be taken into account. Scottish Water expects to monitor the effects of the Water Resource Plan alongside the other impacts of their operations, and as such, is likely to rely on existing sources of information that are collected either by themselves or by other relevant organisations such as SEPA.