
Part B

Chapter B4

Quality Enhancements

Our strategy

This chapter sets out our proposed programme for quality enhancement for water and sewerage services.

Providing a continuous supply of quality water

Our drinking water Programme addresses deteriorating raw water quality to ensure that we meet existing drinking water standards. We have evaluated blending and treatment to determine the most economic option. We will also install some additional lead treatment and undertake some lead pipe replacement to meet the new lead standard. All elements of our quality programme are technically supported by the Drinking Water Inspectorate (DWI)

We will be carrying out some pilot catchment measures to protect our water sources and reduce the need for further increases in treatment in the future. We will work with English Nature to develop these measures.

We will improve the security at our sites in accordance with the latest Government advice and provide an alternative piped supply of water to communities with more than 20,000 people, to protect against loss of supply.

We also have a small programme to assess the environmental impact of abstraction at some of our water supply boreholes.

Dealing effectively with waste water

We have based our investment programme on the full National Environmental Programme for our area as notified to us by the EA.

There will be further tightening of discharge standards in AMP5. The largest element of the programme is phosphorus removal under the Urban Waste Water Treatment Regulations, accounting for over half of the improvement programme, following the designation of the River Trent as a Sensitive Area.

We have worked with the EA to review measures and deliver the most cost effective investment programme necessary to achieve required river quality standards.

We have included a programme of first time sewerage projects to comply with our obligations under Section 101A of the Water Industry Act 1991.

We have not included the costs of the transfer of private sewers and laterals in our plan, but have outlined our current estimates of the costs in this Chapter as requested by Ofwat.

Sludge – minimising our carbon footprint

The key elements of our Sludge Strategy for AMP5 are to:

- have digesters that are correctly sized and in the right locations to meet all sludge quality requirements, balancing the risk to our sludge to agriculture operation with cost whilst optimising vehicle movements;
- optimise our drying processes at Finham and Netheridge to inform investment decisions for PR14;
- convert more sludge to energy using advanced digestion technologies;
- increase our raw sludge thickness and cease our liquid sludge to land operation.

Proposed expenditure in AMP5 (07/08 prices)

		Capex (£m)	Opex (£k) 2014/15
Water	Water quality – nitrates	30.7	211
	Water Quality - Lead	8.9	773
	Water quality – catchment management	0	301
	Water quality – other	8.5	52
	SEMD	77.5	147
	Low flow river investigation	4.6	0
	Total	154.1	1,809
Sewerage	Sewerage Quality – Phosphorus removal	127.0	5984
	Sewerage Quality – Water Framework Directive	26.7	508
	Sewerage Quality – Other Directives	64.8	644
	Sewerage Quality – Sludge	39.2	213
	First Time Sewerage	18.1	187
	Total	275.8	7536

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Chapter Overview

Introduction

This overview considers our overall approach to determining the quality enhancement programme.

Our objectives:

Our objectives for quality enhancement service are incorporated in our Key Strategic Intentions set out in Part A of this Plan:

- KSI1 – Providing a continuous supply of quality water
- KSI2 – Dealing effectively with waste water
- KSI4 – Minimising our carbon footprint

We aim to deliver against these KSIs while also meeting our KSI5 – Having the lowest possible charges. This will be achieved by:

Challenging any quality improvements which we do not think are justified or would require excessive additional energy use.

Identifying sustainable solutions where possible. Examples include catchment protection solutions to reduce the need for treatment and the choice between blending and treatment to achieve water quality standards.

Determining priorities

The quality programme has all been evaluated using cost-benefit analysis and details are given in Chapter C8. Whilst all interventions included are the most cost effective solutions, we have not, however, excluded schemes which are not cost-beneficial and so we have included:

- The whole programme supported by DWI as being necessary to maintain water quality compliance in the face of deteriorating raw water quality.
- The full National Environmental Programme for our area as notified to us by the EA.
- All schemes required under the Security and Emergency Measures Direction (all of which was assessed as cost-beneficial).
- Completion of previous quality programmes.

Our assessment shows that the drinking water quality programme delivers net benefits overall but that around 40% of the drinking water quality programme is not cost-beneficial. This assessment of benefits was based on limited information and did not value factors such as the benefit of maintaining public confidence in drinking water. Maintaining high quality drinking water is ranked as a very high priority by our customers. In addition, the benefit assessment did not take into account the cost of developing alternative sources of water to replace any sources where quality cannot be maintained without additional treatment.

The sewerage environmental Programme has been reduced in scope and obligations following a constructive and effective challenging and revalidation of the benefits of outputs between ourselves, the Environment Agency and Natural England. Whilst the overall plan

has been assessed as being cost-beneficial (based on customer willingness to pay for improving river quality), a significant proportion of the Programme is not cost-beneficial when considered in isolation. Notwithstanding this, our FBP programme represents the most cost effective plan to deliver the AMP5 environmental improvement Programme. We will deliver optimised solutions that balance environmental improvements with minimising the impact on customer bills whilst maintaining our serviceability position.
