

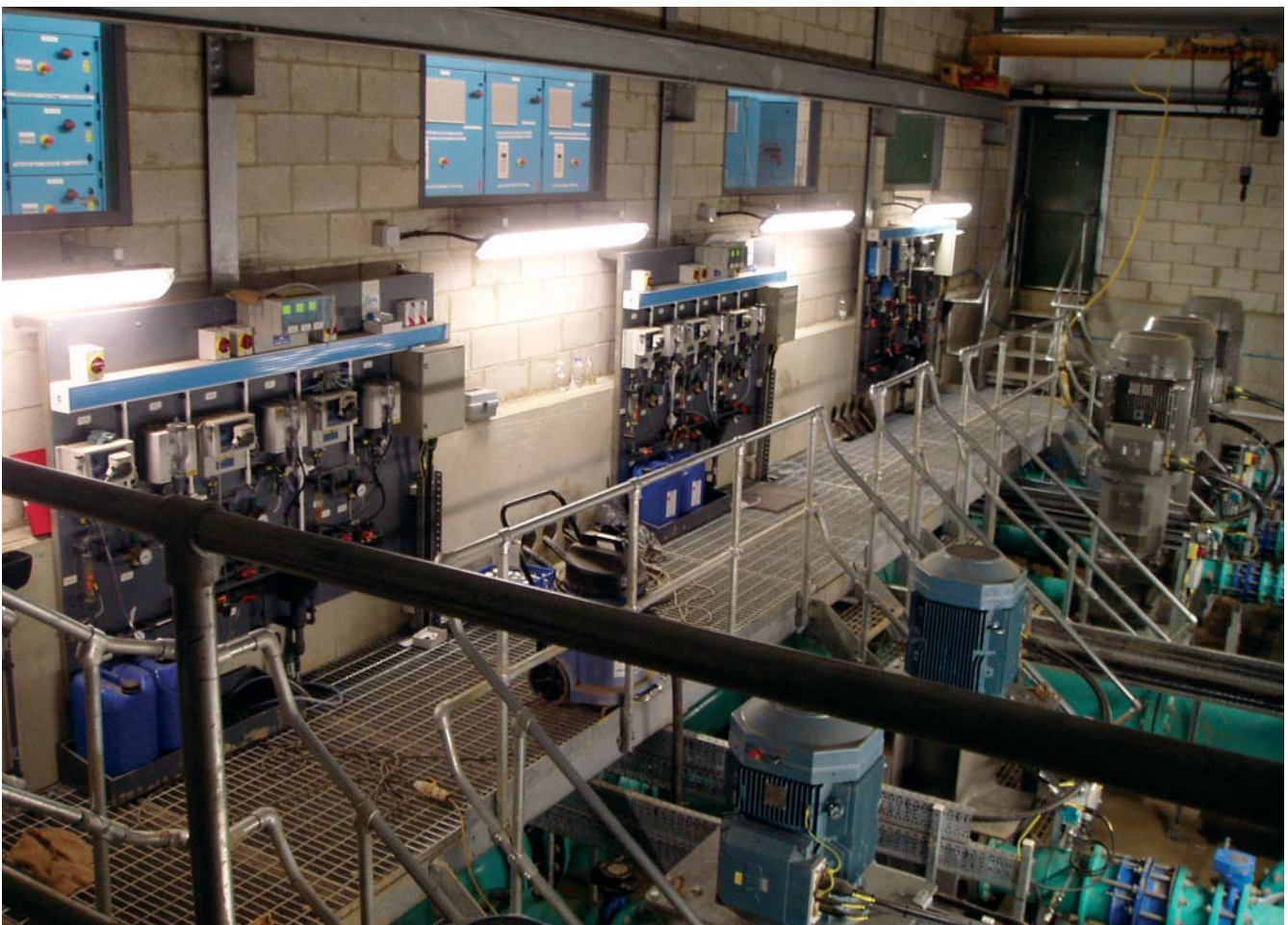
Yorkshire Water's £70m Capital Investment to meet Drinking Water compliance

By

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The first two years of Yorkshire Waters (YW) quality programme has seen an unprecedented achievement of complying with fourteen Drinking Water Inspectorate (DWI) undertakings, requiring major capital investment of £70m. This has been achieved by adopting a new and radical approach to capital delivery by embracing the company's overall vision and rationalisation strategy. In October 2004 Yorkshire Water launched a new vision to be 'clearly the best water company in the UK'. This vision is based on six key chapters:-

'Service, Compliance, Value, People, Partners and Society'.



The new Haisthorpe WTW showing booster pumps to Bridlington & Driffield

courtesy: Yorkshire Water

Vision

In the Water Business Unit (WBU) the vision has been developed into a 'Clear Water' strategy to focus on what needs to be done to achieve this vision. The Clear Water strategy sets out a five years vision for the WBU with the aims of achieving a 'zero service failure' organisation, where services which affect customers is minimised or eliminated. Minimising service failures will result in sustainable efficiencies which will contribute to out performance of the AMP4 financial targets, whilst providing a more robust and sustainable asset base.

A key contributor to 'zero service failure with a cost dividend' is the Water Treatment Works (WTW) asset rationalisation strategy, which will improve customer service whilst contributing to overall capital and operational efficiencies.

WTW Asset Rationalisation Strategy

The objectives of the strategy are to:

- * **improve water quality to customers;**
- * **reduce the cause of incidents;**
- * **enhance customer service by maintaining security of supply and enhancing Grid flexibility;**
- * **provide a contribution to financial out performance.**

The strategy is an evolution of YWs approach in previous AMP periods which had seen WTW's rationalised from over 110 assets to 86. The approach within this strategy considers all assets together to ensure that the interventions selected are technically sound, sustainable and can be delivered without adversely affecting the agreed compliance dates and water quality benefits to customers.

The company has reviewed all WTW's across the asset base, assessing the following criteria:

- * **past & future serviceability of the works (the level of service to customers is not acceptable);**
- * **future capital expenditure requirements (significant requirements for base maintenance expenditure in AMP4);**
- * **ability to expand the YW Grid system;**
- * **operating expenditure (the cost of operating the works was not economic).**

'In house' planning tool

WRAPsim is Yorkshire Water's 'in-house' Water Resource Allocation Planning Tool. It is capable of simulating supply and demand scenarios over a 25 year planning horizon.

The approach addresses resource and supply risks through WRAPsim modelling, confirming that over a 25 year planning horizon all customer groups are maintained at the same level of security of supply - and in some cases the level of service is enhanced.

Major construction work

Construction work commenced in August 2005 with the AMP4 contract partners, Costain, MMB (Mott McDonald Bentley), North Midland Construction, ETM (Earth Tech Morrison) and Laing Halcrow, assisted by the consultants Arup, Turner & Townsend and Castleton.

A requirement to comply with Trihalomethanes (THM's at Langsett and Harlow Hill WTWs has seen major investment to install additional stages of treatment for manganese removal.

To deal with rising levels of THM's and pesticides at Loftsome Bridge WTW, £14m has been invested in a new Dissolved Air Flotation (DAF) plant, a Granular Activated Carbon (GAC) plant and a sludge handling process.

Two large rationalisation projects at Nutwell, near Doncaster and Haisthorpe, near Bridlington, have seen ten WTWs reduced to two,

in addition to complying with pesticide and nitrate undertakings. At Nutwell, the capacity of the existing nitrate blending system has been increased and a new GAC plant for pesticide removal installed. Haisthorpe has seen the construction of a new GAC and nitrate blending works. Both projects involve around 70km of new water mains, retaining the raw water sources.

Smaller WTWs

Work on smaller WTWs at Studforth, Eggborough and Osmotherley has seen the abandonment of the raw water sources and the treatment facilities at these sites. Drinking Water compliance (colour) is achieved by supplying from larger WTWs in the areas - namely, Harlow Hill (Harrogate); the Selby Wellfield and Thornton Steward.

Abandonment of Thorp Arch WTW and the borehole supplies, to reach manganese compliance, has involved 'maining out' the site by supplying from Eccup WTW in Leeds. Likewise, to abandon Elslack WTW and the raw water supply, achieving THM compliance, has involved 'maining out' from Embsay WTW near Skipton. Levels of THM's are controlled by utilising the existing chloramination system at Embsay.

Conclusion

Yorkshire Water are halfway through the delivery of the AMP4 clean water quality and rationalisation programme. Further, large value, projects at sites such as Marton, Albert (Halifax) and Acomb Landing WTW's form the remainder of the programme.

Not only will the water quality risks associated with all the Drinking Water Inspectorate (DWI) undertakings be mitigated, meaning considerable reductions in customer complaints and improvement of water quality, but, rationalisation sees the alternative sources of water improving the overall service experienced by customers in Yorkshire. ■

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Eggborough WTW. One of the many WTW being made redundant as a result of rationalisation

courtesy: Yorkshire Water