

Water Supply Grid Elimination of standalone sources

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The water supply grid is the largest scheme ever undertaken by Wessex Water. The programme comprises a series of projects designed to resolve resilience issues within the water supply network. In simple terms, it involves improving connections within the existing water supply system to enable water to be moved from areas of surplus to areas of need and hence improve resilience to drought and unforeseen events. This paper focuses on the elimination of standalone sources.



Construction of a recent water supply pipeline - Courtesy of Wessex Water

Scheme objectives

Wessex Water is committed to ensuring that it meets public water supply demand for the next 25 years. The eight-year Water Supply Grid programme involves more than 40 new capital schemes and these new projects will allow Wessex Water to meet the future demand for water, without the need to develop new resources.

The programme will allow Wessex Water to:

- Improve the security of supply for customers, even in the event of a catastrophic failure.
- Meet reductions in abstraction licenses required by the Environment Agency to improve flows in some rivers and protect their ecology.
- Deal with seasonal or occasional deteriorating raw water quality, particularly increasing concentrations of nitrates at some groundwater sources.

Elimination of standalone sources

The water supply grid programme includes projects to eliminate the standalone nature of several strategic sources in Dorset, Wiltshire and Somerset, as shown by the yellow dots on the plan. If these sources were to suddenly fail, due to pollution of the aquifer, catastrophic mechanical plant failure or groundwater quality deterioration, then Wessex Water would have no option but to provide alternative emergency short term supplies to customers using water tankers or bottled water.

The proposed interconnectivity of sources to the major trunk mains system will significantly reduce the impact of any loss of supply. It will also enable the utilisation of sources to be optimised.

Scope of work

The work will involve the laying of new or refurbishment of existing pipelines to link areas supplied by standalone sources with other

Please note: An in-depth case study on the Water Supply Grid - Corfe Mullen to Salisbury Transfer Main is featured in UK Water Projects 2013 and on www.waterprojectsonline.com



links are kept exercised so that they are always available if required. The design of the links has carefully taken into consideration both the need to reverse flows down the new links and the potential issues of mixing waters from different water quality zones.

Environmental commitment

Wessex Water is committed to building this new infrastructure in an environmentally considerate way. The region is rich with a variety of protected landscapes, sites, habitats and species present.

The environmental studies undertaken have included surveys to understand the environmental resource of the new pipeline routes, including ecology, landscape, heritage and amenity. The studies have also included assessments of the impact and measures to mitigate any adverse effects, if they cannot be designed out by revision or relocation.

Project delivery

Wessex Water’s Engineering and Construction Services (WECS) is managing the overall delivery programme, with both WECS and Atkins Ltd providing engineering design, planning and environmental services.

The appraisals of the schemes started in 2010 and the programme will complete and commission all the projects between 2011 and 2017. The designs are being undertaken in close partnership with the grid contractors (Trant Construction Ltd, WECS Civils and WECS Mainlaying) who are providing early contractor input to get the buildability right and optimise the construction programming and supply chain management.

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parts of the Wessex Water network. The current estimate is for around 85km of pipeline, 15 (No.) new or upgraded pumping stations and 5 (No.) additional water storage tanks.

In addition to this some of the longer links will require booster chlorination and all will require a major upgrade to the remote water quality monitoring, telemetry and control to ensure these



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