Scarborough Revised Bathing Water Directive

investment to achieve 'excellent' bathing water standards

by Steve Pace C.WEM, MCIWEM, I.ENG, FIOW and Phil Press CEng C.WEM MICE FCIWEM

The aim of the revised Bathing Water Directive (rBWD) programme is to protect public health and improve the environment by limiting faecal contamination. Water quality will be based on a four year data set for each category of results, with sampling against the new standards starting with the 2012 bathing season. The first bathing water results will be announced in late 2015 with performance measured against four new standards: 'Poor', 'Sufficient', 'Good' and 'Excellent'. The EU Directive requires that all beaches must meet the 'Sufficient' standard by 2015, however Yorkshire Water is investing to achieve the higher 'Excellent' standard, this being the future requirement in order for the beach to be considered for the prestigious Blue Flag award. Yorkshire Water is making excellent progress with their rBWD programme to help Yorkshire's beaches be amongst the best in Europe and is undertaking major capital works at Bridlington and Scarborough. This paper will concentrate on the progress being made on the Scarborough Scheme.

Transfer pipeline with Scarborough WwTW in the background - Courtesy of Arup

Modelling

The scheme has been developed using a marine impact model (MIM) to assess the consequence of storm discharges into the coastal waters. The rBWD uses two parameters to measure water quality; *Intestinal Enterococci* and *Escherichia Coli*. The MIM predicts the levels of the indicator organisms in the bathing water and hence its performance against the new standards.

The water quality is known to be affected by the effects of the tide and the wind, so these are included in the analysis. The storm run off has been generated by a detailed InfoWorks model produced by MHW and the MIM has been undertaken by Intertek-Metoc.

The use of the MIM has allowed Yorkshire Water (YW) to develop a scheme which targets the discharges with the greatest impact rather than the conventional surrogate approach which is based on limiting spill frequency at each location.

Contract strategy

YW's contract strategy was to competitively tender the preferred scheme using all four of its Large Scheme Framework Partners.

The preferred scheme was developed from an investigation phase coordinated by Arup with a core team staffed from each of the potential tenderers. These included:

- Mott McDonald Bentley (MMB).
- Black & Veatch.
- Morgan Sindall Grontmij JV (MGJV).
- Earth Tech Morrison (ETM).

More than 25 years' experience in the Water industry, Intertek's Energy and Water consultancy services (formely Intertek METOC) is the first choice for river and coastal solutions, reducing your costs and securing compliance. Our services include:

> Advisory services - identification of business and environmental objectives
> Regulatory and Risk Assessment
> Data Collection, Analysis & Interpretation
> Predictive Mathmatical Modelling
> Asset Optimisation
> Project coordination and stakeholder liasion
> Beach Management Services

Whatever your project requirements we can provide comprehensive expert solutions to complex challenges. We will communicate effectively with your stakeholders to ensure benefits are realised.

Intertek

Valued Quality. Delivered.

Intertek
Exchange House,
Liphook, Hampshire
GU30 7DW
UK

T: +44 1428 727800
F: +44 1428 727122

www.intertek.com

Simplifying the challenges facing a fragile world.

For more information contact Natalie Griggs,
Marketing Manager: +44 (0) 1428 727800
natalie.griggs@intertek.com

Individual investigations were shared between the partners with the results shared through the core team. Wherever it was seen that this approach may lead to providing one partner with a significant commercial advantage it was agreed that Arup would manage that particular activity. The activities involved were the preparation and submission of the planning application including all of the environmental reports and the site investigation works.

The resultant scheme is summarised as follows:

Component/Site	Requirement
Wheatcroft CSO	1,000m³ of storage
Toll House Pumping Station	New CSO, 4,000m³ storage tank and 6.5m³/s storm pumping station
Corner Café CSO	New 7m³/s CSO and short sea outfall
Scalby Mills Pumping Station	New WwTW flow transfer pumps and short sea outfall
Transfer Pipeline	3km of new 800mm rising main and return effluent main
Scarborough WwTW	3 hours of storm settlement and UV disinfection system

Figure 1 (top right) shows the location of these sites in relation to the popular north and south bay beaches.

Tender and contract award

The preferred solution was subject to a 12 week tender period based on documentation developed jointly by Arup and the partners. Following a short but thorough tender analysis the preferred contractor (MGJV) was notified of their status within 6 weeks. This period included the completion of the initial YW approval process.

Public liaison

Scarborough is a popular and busy coastal resort. It relies on its tourist industry throughout the year and as such mitigating the impact of the works was important. To help with this process a liaison group including officers and elected members of Scarborough BC as well as the general public and representatives of traders and trade organisations was formed early.

The liaison meetings have been targeted in their purpose with the aim of minimising the impact whilst achieving the required programme. These have included traffic management, planning, general disruption and mitigation of trading losses. The project team has worked extensively to mitigate the latter and the initial results have been extremely promising.

To assist with this both YW and the contractor (MGJV) have dedicated PR staff employed on the scheme. The development of relationships with the traders and their representatives has resulted in good positive experiences on site.

The team worked closely with the highways teams at both Scarborough BC and North Yorkshire CC. The scheme had the potential to cause major disruption in the tourist areas. Careful planning and the use of different traffic management arrangements at different times of the year has kept traffic flowing and minimised delays.

Early works

The works with the greatest initial impact are being undertaken at Toll House Pumping Station. The programme and environmental restrictions necessitated that rock netting was installed on the cliffs above the site before the start of the bird nesting season.

The site is at the foot of steep cliffs which are the home to a large colony of kittiwakes and a breeding pair of peregrine falcons.

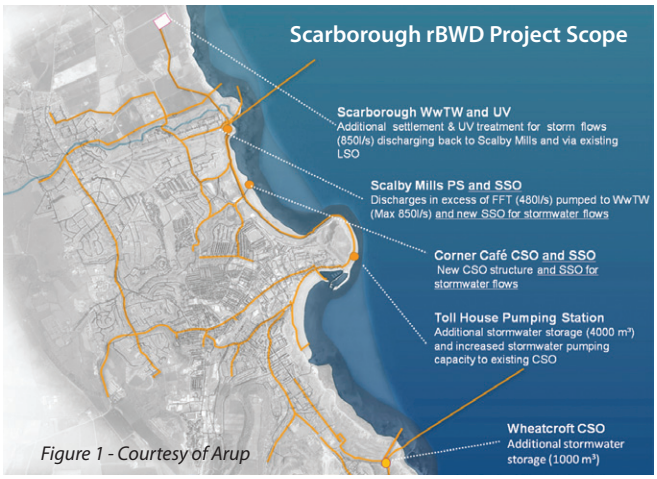

Figure 1 - Courtesy of Arup


Piling rig at Toll House Pumping Station Courtesy of Arup


Scarborough North Bay with geotechnical investigation rig Courtesy of Arup

Enabling road works also had to be undertaken before the Easter Bank Holiday period, facilitated through an advance contract.

Sea outfalls

The scheme involves the construction of two new sea outfalls. These will be installed during the 2013 bathing season by specialist contractors. This year a detailed SI is being undertaken.

Progress

The scheme is progressing on programme and budget. It is expected that the land based works will be completed in advance of the April 2014 compliance date.

The Editor & Publishers would like to thank Steve Pace, Yorkshire Water Batch Manager, and Phil Press, Associate with Arup, for preparing the above article for publication. Both are members of Yorkshire Water's Asset Delivery Unit.