

Frome Valley Relief Sewer (Phase 3)

Overview:

Site Location:	>> Bristol
Client:	>> Wessex Water
Contract Value:	>> £8 m
Programme:	>> 65 weeks

The Frome Valley Relief Sewer Phase 3 was a key strategic project in AMP6 included in Wessex Water £2 billion investment programme to maintain and improve services between 2015 and 2020.

The purpose of project was to provide a link sewer which will join two previous stages of FVRS (2 & 4) to facilitate the projected growth in North Bristol by creating additional sewerage capacity and opportunities to manage flows between the Frome Valley Trunk Sewer Network (through central Bristol) and the FVRS network (around the north of Bristol).

As such it was proposed to construct a foul gravity sewer to transfer flows from Hoovers Lane CSO, near Iron Acton, Bristol, to the head of the Frome Valley Relief Sewer Phase 3 at Bradley Stoke, Bristol.



Frome Valley Relief Sewer (Phase 3)



The following construction works were required to be delivered by Lewis Civil Engineering:

- 3,000m (approximately) of DN750, DN1200 & DN1800 precast concrete gravity sewer (open-cut)
- 1,650m (approximately) of DN1800 & DN1500 tunnel section (carried out by B&W tunnelling)
- 35 No. manholes and 2 No. shafts (7,5m diameter)
- 5 No. chambers to accommodate the installation of automated flow control penstocks to manage flows
- Connection to existing Frome Valley Sewer at MH 8101, south of Hoovers Lane CSO and Pump Station
- Connection to DN1800 Frome Valley Relief Sewer at MH 6502
- Crossing of high pressure oil, gas and petroleum pipelines
- Crossing of overhead and underground services
- Crossing of 2No. roads and 1No. river (River Frome)
- Construction of temporary compound areas, access roads and working areas
- Reinstatement on completion of works

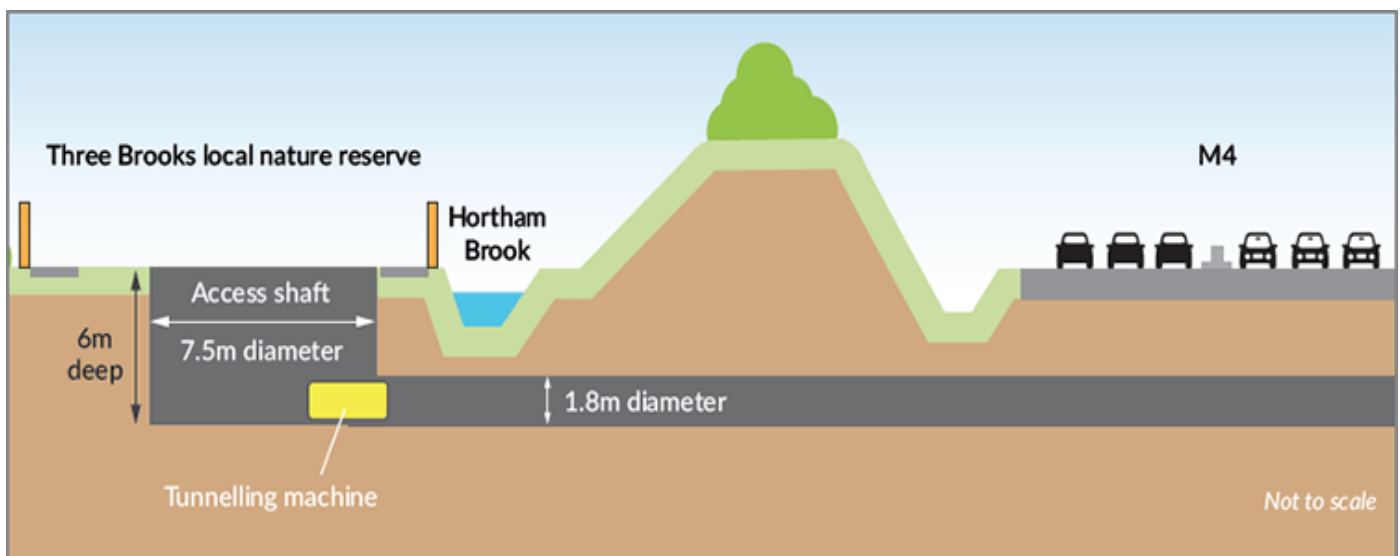


Frome Valley Relief Sewer (Phase 3)



We have successfully tunnelled beneath the M4. Tunnelling has taken place from the Three Brooks Local Nature Reserve in Bradley Stoke, with great care being taken to protect wildlife and preserve natural habitats. The total length of the tunnel is approximately 400m and the DN is 1800.

B&W has finished in total 5No. tunnels using Pipejacking technology, with different lengths from 160m to 460m and DN 1500&1800.



Frome Valley Relief Sewer (Phase 3)



The new sewer was required to connect with the existing Wessex Water sewerage network at fixed invert levels and also cross beneath a number of services and features which cannot be diverted or avoided, and therefore constrain the levels and gradients at which the sewer can be constructed.

The required position of invert levels was challenging due to the gradient of the pipes (1 in 950) so we had a reduced margin for errors.



Lewis Civil Engineering Ltd, Mwyndy Cross Industries, Cardiff Road, Pontyclun, Rhondda Cynon Taff. CF72 8PN

Telephone: 01443 449 200 Fax: 01443 449 201

Website: www.lewis-ltd.co.uk E-mail: enquiries@lewis-ltd.co.uk