

## Severn Trent completes first of three Elan Valley Aqueduct bypass tunnels

Severn Trent has completed the first of three huge multi-million pound bypass tunnels being built to reinforce water supplies for Birmingham.

The Elan Valley Aqueduct (EVA) has been bringing water to the homes and businesses of Birmingham and the surrounding area for over 100 years. However, after so many years of service, the need for regular maintenance and refurbishment is becoming ever more frequent and so the time has come to provide extra support for the EVA to make sure that it can continue to provide service for another 100 years. Bring on the Birmingham Resilience Project – Severn Trent's flagship £300M programme.



Paul Dennison, programme manager for Severn Trent, explains: “At the moment, the EVA is the sole source of supply into Birmingham, and storage at our treatment works at Frankley means we can only turn it off for a few days at a time for maintenance. To allow us to turn it off for longer periods, an alternative water supply for the city is being built. Work began this month on a new pipeline from Lickhill, near Stourport-on-Severn, 25km into the existing water treatment works in Birmingham.

“However, our checks on the existing aqueduct show that in three places, there is work that we'd rather do before the new pipeline is completed. As we can't shut down the aqueduct, we've had to come up with alternative solutions.”

Three new tunnels will be built, then connected at either end, to bypass sections of the existing aqueduct. These will be at Bleddfa, Nantmel and Knighton. Each of the multi-million pound projects is huge in its own right, and the machine used to cut the new tunnels is over 3 metres in diameter, so as you can imagine it's quite a job!

Paul continued: “We've been working with our contract partners, BNM Alliance, at Bleddfa since October 2015 and a launch ceremony was held in May 2016 to celebrate the arrival and launch of the Tunnel Boring Machine which then spent the next six months underground digging the 1.8km long tunnel. The machine broke out successfully in December 2016 – right on target, completing the first tunnel.

“The last few weeks have been a busy time for us as we've been working on the transfer of flows from the 100 year old aqueduct at Bleddfa into the newly constructed tunnel. We planned the work to coincide with a scheduled shut-down of the EVA, when flow through the aqueduct is suspended for five days to allow inspection and maintenance.



“The new tunnel was flooded by removing the barriers from each end, resulting in the flow being shared between the old aqueduct and the new tunnel. The water was diverted into the new tunnel by placing a series of specially shaped concrete blocks into the aqueduct gradually turning the flows from the old to the new.

“The roof slab sections have now been replaced and we have begun backfilling the two working areas. This is a fantastic achievement by all the team to complete the flow transfer in such a short space of time – just three days. We expect everything to be fully back to normal by the end of August at our site at Bleddfa village, and a month later at our site near Monaughty.”

All the tunnelling equipment from Bleddfa has now been transferred to the second site at Nantmel, where the Tunnel Boring Machine is being prepared for its re-launch in April to start work on tunnel number two.

-ENDS-

Severn Trent Water is the UK’s second biggest water company. It serves more than 4.2m homes and business customers in England and Wales. Its region stretches from mid-Wales to Rutland and from the Bristol Channel to the Humber. The company delivers almost two billion litres of water every day through 46,000km of pipes. A further 91,000km of sewer pipes take waste water away to more than 1,000 sewage treatment works.

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