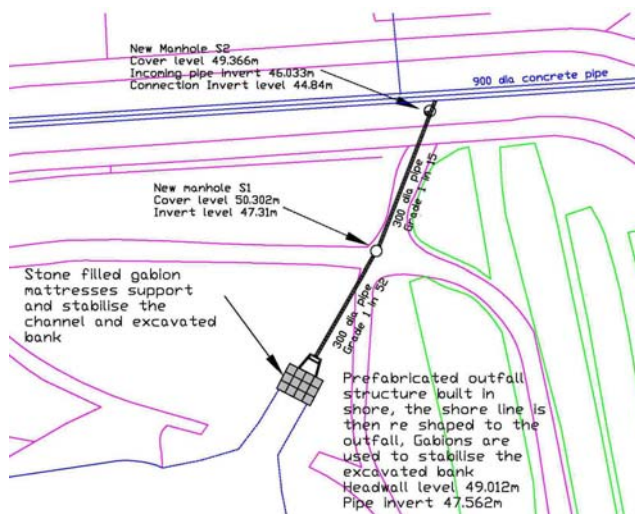


Project: Sneyd Reservoir, scheme to reduce the water level by 1.2m or 25 million litres!

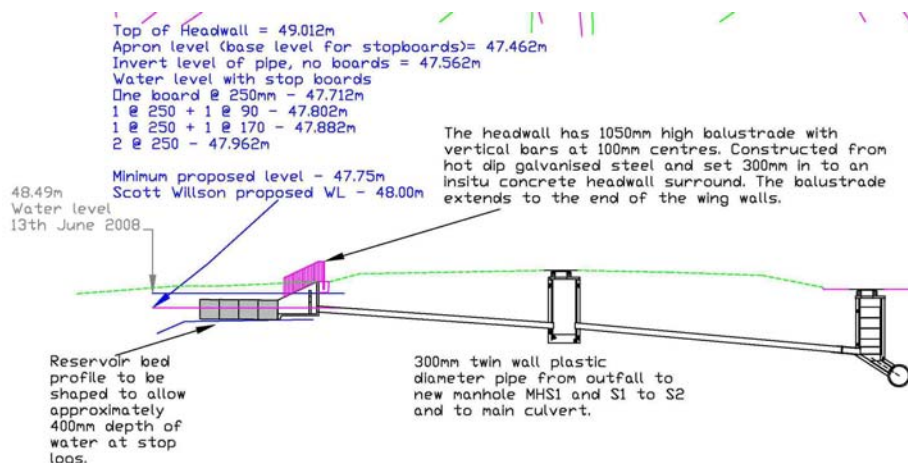


I was asked to look at the growing problem of a rising water level at Sneyd reservoir, increasing approximately 300mm per year. Our investigation found that the original Victorian outfall system, which had been poorly modified in the 1960's, had fallen into disrepair and was no longer usable.

The water level had covered all of the fishing pegs and much of the footpaths. This lost the fishing revenue to the Council and made maintenance of the area almost impossible. The rising water would flood the adjacent road and School within two years. A simple but effective and easy to maintain solution was needed.

I fully surveyed and investigated the area to find the most effective solution, I proposed several schemes including one utilising part the existing system and several new routes. After a costing exercise and liaison with all stakeholders a new route for the outfall was approved, as outlined in my plan above.

However the main consideration was how to initially reduce the water level in a controlled and safe way, all 25 million litres of it. We decided the best plan was to bring the water to the outfall rather than take the outfall to the water!



Left, the long section of my design, the idea was to build the outfall structure some distance from the reservoir then dig a channel to the new drainage system. In this way the civil engineering work could be done in stable dry and relatively easy conditions. The photograph above shows the custom-built outfall structure being lowered into position, note the height of the stop boards.

Scheme, Sneyd Reservoir, page 2



Water flowing over the second stop board

Digging an initial shallow channel to the outfall worked well, the water previously pumped to the front face of the outfall stop boards acted as a buffer and the pressure was equalised, so we were able to control the amount of water flowing through and minimised the amount of silt washed in. We then opened up the main channel before removing a stop board, this process took several days as we allowed the water to settle in the channel before taking out another board.

Below: the outfall with the water at the required level, and the area landscaped.



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With the outfall in place, the connection made to the existing culverted watercourse and two intermediate manholes built, the next stage was to connect the reservoir. The key issue was how to deal with the abnormally high water level. Simply digging a channel to the new outfall could have resulted in an uncontrolled flood that may destabilize the works and also fill the pipes with silt. I specified the custom-built outfall structure to have stop boards to a very high level, we then over pumped water from the reservoir to the excavation in front of the outfall, then the channel was slowly dug and opened up in the area between.

YTS carried out all the investigation and design, we prepared, let and analysed the tenders, and then we managed the civil engineering works.

The job was completed two weeks early, on budget, and met the client's and Environment Agency's expectations with regard the water level and the ability to manage that level. The anglers are back and revenue from this is expected to rise considerably over the next few years. The Council can now effectively manage this wonderful Victorian resource.