



**Innovating to
boost reservoir
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Using an innovative interactive map developed by our innovation team, which displays real-time data from the Environment Agency (EA), we've been taking water from rivers to fill our large London reservoirs as efficiently as possible without going above our permit levels and ensuring the environment is protected.

Background.

We work closely with the EA to set and manage abstraction rates, which determine the amount of water that can be pumped from rivers. The EA has live data to show precise depth levels of rivers, showing how much water can be abstracted without damaging the environment. Here at Thames Water, our data tells us how much water we need to take from the rivers to keep our customers supplied with clean and safe drinking water. We share this information with the EA on the phone every day to agree abstraction rates within the limits of our permits.

After a drier than average year in 2017, water resources were down – for example, a reservoir in north east London, used to supply water to 3.5 million people, was only 39 per cent full. So, during a period of heavy rain in early 2018, we responded quickly to devise a new interactive map to maximise the use of real-time data from the EA to fill our large London reservoirs.

This tool uses data from both Thames Water and the EA to help us better monitor river levels and identify opportunities to abstract water more quickly and efficiently to boost reservoir levels when rivers are high, but also slow abstraction down when river levels are low. This new system also means that less information needs to be passed over the phone, streamlining and increasing efficiency in the process.

Protecting water supplies.

We're always looking into innovative new ways to be more efficient and this new tool has streamlined the abstraction process, optimised how we work, and helped us to fill our reservoirs rapidly at the right times, protecting the environment and water supplies for our customers after a very dry year.



Wraysbury reservoir in early 2018 after abstraction (inset, how it looked in October 2017).

Developing the innovative tool.

Our innovation team worked with colleagues in the EA and a number of teams across the business, including our water resources and operational control teams, to explore what data we'd need for the interactive tool, and how we could display it in the most practical and useful way.

We identified and introduced a form of technology that allows our computers to ask the EA's computers for details of flows and levels of rivers across the UK. We then developed web pages to present this data back to us in a useful format.

We created colour coded maps of rivers which displayed water levels using thresholds we've agreed with the EA. Rivers were shown as red if river levels were too low to abstract, and orange or green as availability increased.

We also added a feature which allows us to see the recent history of river water levels along key stretches of the river. This enabled a more complete catchment management approach, by allowing us to anticipate when water will become available as it flows down the river.

Developed an innovative interactive map to take water from rivers as quickly and efficiently as possible without going above permit levels and ensuring the environment is protected



Queen Mary Reservoir in early 2018 after abstraction (inset, how it looked in October 2017).

