

Southern Water

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Dear Sirs

Response to the Hampshire (Southern Water) Water Transfer & Water Recycling (WT&WR) Project Consultation from 29 May to 23 July 2024

Rowlands Castle Parish Council (RCPC) has considered the documentation provided for the Consultation and has decided unanimously to continue to **strongly object** to the entire project being taken forward for the following reasons that will be elaborated upon in subsequent paragraphs:

- **Financial cost.** The WT&WR Project is a very expensive solution to providing a 1 in 200 to 1 in 500 years drought resilience both in terms of construction costs and, very importantly, through-life running costs over many years that will add large sums to customers' bills for decades;
- **Need to trap more freely-given rainwater.** The UK has a predominantly maritime climate that, with a certain increase in average temperature of at least 1.5 degrees C, will deliver more rain than ever before for much of the year. That freely given fresh water should be trapped in aquifers or additional reservoirs that are less expensive to deliver and will last for centuries.
- **Environmental cost.** The Project has a high environment cost, firstly in terms of energy use 24/7 throughout the year to pump millions of litres of water continuously, even during prolonged periods of rain, secondly in terms of chemical and membrane usage and, finally, in terms of the impact of discharging the concentrated 'reject' waste water into the Solent.
- **Stopping sewage spills is a higher priority.** Southern Water (SW) has declared that an important reason for putting forward this project is to reduce abstraction from the chalk streams and thus improve their quality and flow. However, damage to the chalk streams can be greatly reduced by moving the abstraction points downstream close to the tidal limit and by not putting large volumes of raw sewage into the rivers on a persistent basis. Preventing sewage spills is a much higher priority than spending a lot of capital on the WT&WR Project;
- **Environmental risk to Langstone Harbour.** There is very significant risk to Langstone Harbour from developing the effluent recycling plant and associated deep tunnel shafts needed on the contaminated landfill site at Broadmarsh (Site 72).
- **Failure to properly consider a variety of solutions.** There has been a failure to properly address the variety of solutions that, together, can address the potential water shortage in the South East, not just by developing more storage but also by reducing demand and waste.
- **Increased use of bottled water producing increased plastic waste.** Notwithstanding the fact that the water produced through the recycling process will be fit to drink (provided the system is run effectively), the project risks turning large numbers of people away from tap water and to using bottled water due to the complete lack of trust in water companies.

EXPANDED COMMENTS

RCPC acknowledges that water could (but not necessarily will if the climate continues to warm and produce more rain) be a scarcer commodity in the future and thus remains supportive of the original Portsmouth Water (PW) Havant Thicket Reservoir project to capture surplus spring water in the winter months for distribution in times of drought. However, RCPC is strongly opposed to the whole WT&WR Project.

Financial cost

The Project is a very expensive solution both in terms of construction costs and, importantly, through-life running costs over decades, for all SW customers initially but, in the long-term, it is likely that PW customers may also have to pay more because the mixed water in the reservoir may have to be used by them as well. Many customers are not supportive of the scheme once they fully understand the whole picture and the construction costs continue to increase steadily from an estimated £550-£900 million in June 2023 to over £1.2 billion as of June 2024. The consultation information confirms it will add £30 per year on to their water supply customer bills for 20 years, just to pay for the construction of the effluent recycling scheme, let alone the high running costs to follow.

This project has the potential to be another HS2 where the costs balloon beyond affordability as the project progresses. The advanced recycling process quoted in the scheme documents is very expensive and, once in use, is a hostage to the ever-increasing costs of materials. Treating and pumping vast quantities of water every day over 40km even during prolonged wet periods is just a foolish waste of money.

An independent review of the potential energy costs per annum for advanced daily treatment to get Budds Farm final effluent to drinking water standard estimated that this would be over £2.6M at current prices. The total is split between the cost for advanced treatment at the new Broadmarsh WTP (nearly £1.8M) and the cost for traditional treatment of this extra water at Otterbourne WTP (approximately £850k). This is based on treating 30Ml/day, which is what SW propose to pump to Otterbourne, using energy consumption information provided by SW and the lowest energy cost currently paid by the company of 17p/KWh (i.e. these costs are a conservative assessment). Thus, the total energy cost just to treat the daily sweetening flow of 30Ml/day of final effluent to drinking water standards is more than £2.6 million a year, even though it was selected as a resource to deal with a 1 in 200 to 1 in 500-year drought. This cost must be paid by SW customers for decades to come and perhaps PW customers as well in later years. This is £1.7 million/year higher than treating river water alone at Otterbourne, with treatment of groundwater sources being even cheaper.

There will be additional, significant, chemical, staff and maintenance costs for the effluent recycling plant at Broadmarsh with further substantial additional costs of replace the Reverse Osmosis membranes on a regular basis given their persistent use 24/7. These energy costs do not include any of the pumping costs to get the final effluent from Budds Farm Sewage Works to Broadmarsh, from the effluent recycling plant to the reservoir, and the mixed water from the Havant Thicket Reservoir 40km+ to the Otterbourne water treatment works. If these energy costs are added it is difficult to see how this can possibly be considered a 'best value' solution for customers, or for the environment given the huge annual carbon impacts.

Need to store more freely-given rainwater

It is argued that recycling schemes are not dependent on rainfall or impacted by weather conditions so can provide a reliable source of water as the climate changes and to help reduce our reliance on the region's sensitive habitats for our water supplies. However, unlike other countries that use such schemes the UK gets plenty of rain in winter, even in the SE, and, with a warmer maritime climate holding much more moisture, this is likely to be the case for much of the year in the future. This summer has seen the effects of a warmer climate with much more cloud delivering rain in large amounts. SW (and all other water companies) should, as a priority, be developing solutions which store that free natural water for use in the drier summers that may

occur and, crucially, can operate over many years at low cost compared to the WT&WR Project. Greener and cheaper solutions such as using some aquifers and also more reservoirs have not been properly investigated and brought forward. Additionally, demand can be reduced through the education of all customers in how to use water as a scarcer resource responsibly and also leakage repairs should be increased in number and speed of completion. There is no point in treating water at a cost only to see it run into the ground from the many leaks in the distribution system; that is simply costly waste on a large scale.

Environmental cost

Apart from the long-term direct economic costs to consumers there are also high environmental costs of using a variety of chemicals and expensive membranes that will be needed to recycle the water obtained from the Budds Farm Sewage Treatment Works. There will be a high energy demand associated with pumping some 30 megalitres per day, 365 days a year, to Otterbourne along the proposed 40 km pipeline, regardless of whether there is regular rainfall or not. Energy security is already a significant concern for the UK so developing and using energy intensive solutions over many years makes things worse for energy security and the climate. This project is supposed to be primarily a drought resilience scheme for very occasional use so why produce a system that requires so much water to be pumped when it is not needed for most, if not all, of the year? The construction of new reservoirs, or the provision of infrastructure to use natural aquifers, only requires a lot of energy for the period of construction and much less energy for the provision of water to customers subsequently and only when it is needed. They do not require the additional chemical and high-quality membranes used to produce recycled water, just the normal processes required to produce drinking water from existing sources.

There will be also be significant impacts from the discharged reject waste water from the WTP at Broadmarsh that will flow into the Solent through the existing Long Sea Outfall from Budds Farm Treatment Works. This concentrated 'reject waste water' from the Broadmarsh WTP will be at its most 'poisonous' to the environment at a time of drought when it is not being diluted by the normal Budds Farm discharge to reduce its impact in the sea. Even in normal times it will have an adverse impact on locally protected areas of the Solent and its habitats and these will degrade over time as the reject water is pumped out to sea continuously, thus forming a significant proportion of the local seawater.

Stopping sewage spills in chalk streams

The issue of reducing damage to the valuable chalk streams such as the Itchen and the Test by abstraction is put forward as a key reason for this project so that abstraction can be reduced or even stopped. While it is correct that abstraction needs to be reduced greatly an even bigger problem is that caused by the release of sewage in vast quantities into our rivers, which is currently destroying the biodiverse environment. The first priority for available money is to tackle the sewage release crisis that is happening now and only getting worse as the population increases and the rainfall becomes more intense, leading to large volumes of water passing along the sewage pipes. Treating much more sewage will have a big improvement effect on the quality of the rivers. Secondly, moving abstraction points downstream to just above the point to where high tides push salt water will reduce the impact of water loss in the upper and middle reaches of the rivers, which is currently a major part of the abstraction problem. Spending vast amounts of money on recycling and not on sewage processing and moving the abstraction points is the wrong way to save these rivers from destruction.

Environmental risk to Langstone Harbour

There is significant risk to Langstone Harbour from developing the effluent recycling plant and associated deep tunnel shafts needed on the contaminated landfill site at Broadmarsh (Site 72), west of the Havant Waste Recycling Centre. The landfill site dates from the 1960s-80s and is not sealed, just surrounded by chalk. This site is entirely inappropriate for such infrastructure and it should never have been chosen because of the instability of the substrate and the potential for considerable leaching of poisonous substances into the Harbour. The deep piling, required to support infrastructure on a landfill site containing all sorts of rubbish, will need to go down to the chalk substrate and thus facilitate more leachate to go from the landfill contents into Langstone

Harbour. There is also the issue of gas emission from the landfill contents. There are alternative sites that could and should be used to obviate the building of infrastructure on a landfill site. The old IBM site, currently under demolition could be used and is the preferred option for those who understand the issues, if the project really had to go ahead.

Additionally, the visual impact of the new WTP will supposedly be screened by new planted trees and hedges but, in reality, once the roots of these new trees and hedges reaches down to the landfill contents they will start to die off as they will not be able to obtain the necessary nutrients that they would from soil and, also, poisons in the landfill will adversely impact the vegetation. It is stated that maintenance will only be provided for 5 years for this planting so the obligation will cease just as the trees start to die off as their roots grow into the landfill. How convenient! The obligation should be permanent for the duration of the life of the WTP if it has to be built.

Failure to properly consider other solutions

There has been a totally inadequate public consultation on the alternative options and consumer acceptability. Two to 3 reservoirs to store winter rainfall could be built for the cost of this effluent recycling scheme. The education of customers in how to reduce their usage considerably and also putting more effort into dealing with leaks will contribute significantly to addressing potential water shortages, along with more storage.

Increased use of bottled water leading to increased plastic waste

RCPC recognises that the water produced through the recycling process will be fit to drink (provided the system is run effectively), but the project risks turning large numbers of people away from tap water due to the complete lack of trust in the water companies. No-one can be forced to drink tap water and, with many consumers saying that they will not do so if this scheme is taken forward, this will create a new used-plastic-water-bottle mountain, especially as mixed reservoir water will taste different to spring water. At a time when we should be reducing the use of plastic it is counter-productive to end up seeing a greater increase in the use of bottled water.

Additional comments

It has been stated that the need to avoid a drought such as occurred in 1976 is a key driver for developing this scheme. RCPC believes that the climate has changed dramatically since then as it warms and draws up much more moisture into the atmosphere and, while other parts of the world will undoubtedly see greater periods of prolonged drought because they are away from the oceans and with different prevailing winds, that will not occur in UK with its maritime climate resulting from the prevailing warm wet winds from over the Atlantic.

There is also the loss of a unique biodiversity opportunity to create a chalk-spring-fed reservoir, the first of its kind in the UK. In addition, the impacts on reservoir water quality and biodiversity from introducing recycled water are still unknown. For example, outbreaks of illness among the human population will result in pathogens entering the sewage system. Membranes to filter the sewage water are not effective in removing all such pathogens and are not 100% reliable so that pathogens will enter the reservoir water and become significant over time with unpredictable adverse consequences.

No independent monitoring of the discharge from the Broadmarsh WTP into the reservoir is planned, the information will be provided by SW so the company will be self-regulating. Given the company's history with sewage management, this is very concerning and unacceptable to consumers.

Within the consultation documents are many 'illustrative designs' for various infrastructure elements, to inform the Environmental Impact Assessment (EIA). There is no commitment to the designs or layouts shown and it will be for the Design & Build Contractor to decide how the solutions should be developed once the Development Consent Order has been approved. The contractor can do what they like as long as the impact in any form does not exceed the 'worst case' parameters used in the EIA. Thus, any reassurances given in respect of any designs are effectively meaningless.

There is a lot of talk by SW about caring for the environment but the implementation of this scheme just does not stack up against those comments. Spend money on eliminating sewage spills, build reservoirs that actually will add to biodiversity as well as provide extra water, use aquifers, reduce leakage and educate the public on water usage. Those actions will help the environment and deal with the potential of lack of water, not the proposed recycling project.

Summary

The Hampshire (Southern Water) WT&WR Project is very expensive to take forward both in terms of costs to the consumers over many years and also in terms of an increased adverse environmental impact, both locally in the Solent area and widely through the consumption of large amounts of energy every day of the year for the decades duration of the entire Project. There are cheaper options to improve the availability of water for a growing population and in times of drought, through the education of customers, much greater attention to the reduction of leaks, the use of some natural aquifers and some new reservoirs that will only need large amounts of energy for building them, depending on location. Moving the abstraction points downstream to just above the high tide point and stopping the regular discharge of large quantities of sewage into waterways is by far the best way of helping the chalk streams to thrive, thus dealing with the argument that the WR&WT Project is the best way to improve the river quality.

This is Southern Water's equivalent of the recent HS2 project, the £1.2 billion cost (at current prices) will continue to spiral and for what purpose, to have enough water to meet a 1 in 500-year drought! By the time that happens the WTP could already be redundant, with a forecast life of just 60 years. Two to 3 new winter storage reservoirs could be built for the same price and those would still be here supplying customers (when it is necessary) in 200 years' time. Addressing a need to deal with possible water shortages at a time of rare drought through the most expensive project possible instead of looking at a basket of more affordable solutions that cumulatively improve the availability and sustainability of water supplies makes no economic sense. The project should be stopped and a proper assessment made of the solutions available to deal with irregular and rare potential water shortages while considering the environment. Some of these can be progressed immediately to useful effect.

Yours faithfully

Lisa Walker – Clerk to the Council
On behalf of Rowlands Castle Parish Council