# Rowlands Castle Parish Council

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The Planning Inspectorate
Environmental Services
Operations Group 3
**By Email:** hampshirewaterproject@planninginspectorate.gov.uk
**Your Ref:** WA010002-000010-230725 dated 25 July 2023

17 August 2023

Dear Sir/Madam

**Application by Southern Water Services Ltd for an Order granting Development Consent for the Hampshire Water Transfer and Water Recycling Project - Scoping Opinion requested for the information to be provided in an Environmental Statement relating to the proposed development**

Rowlands Castle Parish Council (RCPC) has been identified as a statutory consultee by the Planning Inspectorate and therefore is providing a response to the EIA Scoping Report.

The bulk of our comments (developed by our consultant, a former Environment & Biodiversity Specialist & Former Local Authority Contaminated Land Specialist & Drinking Water Inspector) are laid out in Annex A (pages 6 to 31) to this letter and from that document we highlight a number of principal concerns in the paragraphs below. Please note that some comments in the Annex are repeated for different Sections of the Main Report where it is necessary to do so.

We also attach a letter in Annex B (pages 32 to 35) sent by Havant Borough Residents Alliance and other signatories (of which RCPC is one) to the CEO of Southern Water (SW) as that makes some important points in a bit more detail, particularly the failure to follow the statutory consultation process

Our overall and overriding concern is that this whole Water Transfer and Water Recycling Project (WT&WRP) is flawed in its concept and how it is to be delivered. SW has decided that this scheme as proposed is the only answer to the potential shortfall in water supply in its area instead of looking carefully and thoroughly across all the possible options that cumulatively could deliver what is required at far less cost to the environment and to customers. In addition, the goalposts keep being moved as the project was originally supposed to be supplying 15Ml/d when required during drought with just a sweetening flow through the plant and pipeline of 5Ml/d and now the EIA Scoping paper indicates 20Ml/d to be pumped continuously, even when there is no need for this additional water to top up normal supplies. SW should be delivering solutions that represent best value for customers and enable it to be net zero by 2030. The proposed scheme is not best value and certainly won't contribute to carbon reduction. Costs will rise considerably for consumers at a time when so many are being squeezed financially already and the environmental costs of increased energy and materials consumption plus the adverse impact on many locations on land and at sea will be unacceptable.

Work will need to take place in many areas to deliver this scheme and all these work areas need to be included in the Environmental Statement (ES) following production of the EIA. The ES must include a description of reasonable alternatives in terms of design, technology, location, size, and scale studied by the Applicant, together with their assessed cost and construction/delivery timescale**.** Other more sustainable alternatives that could be developed at less cost and more quickly have not been identified in the EIA scoping, instead they have been 'parked' by SW. The

EIA must consider and assess all of the alternatives that could reasonably be developed to meet some of the demand deficit in the short to medium term, as other alternatives are likely to have less significant effects. Alternative selection should not work solely on the basis that the entire longer term potential water demand deficit needs to be met by just one scheme. This prevents more sustainable options being selected such as:- moving the Otterbourne abstraction to just above the tidal limit of the River Itchen; use of multiple aquifer storage schemes (including Test MARS that SW's own Habitats Regulation Assessment (HRA) suggests could provide up to 15Ml/d); new winter storage reservoir options (including options similar to those considered by the Water Boards in 1960 to 1980); re-using the Farlington Springs source abandoned in 1905 and effluent recycling from Peel Common WWTW to a local river or bespoke environmental buffer lake (EBL), which SW's own report has confirmed has more environmental benefits to the coast than any Budds Farm option.

Information in the previous SW Strategic Environmental Assessment (SEA) cannot be relied on for use in the full EIA. The significant flaws in the SEA process need to be highlighted and addressed as part of the new EIA. Not all potential impacts were considered, eg impacts on the coast were dismissed without even understanding what the pathways and impacts were. There was also a concern that benefits provided by the original PW HTR scheme were being double-counted, which was not appropriate. How does a scheme that scored highest in the SEA for adverse impacts get selected?

Section 5.3.1 confirmed that the DCO process requires consultation and stakeholder engagement as part of the progression of the Proposed Development. We draw your attention to the fact that appropriate consultation has not taken place through the options appraisal process, nor since the current proposal was selected and there is significant concern amongst the local community that SW have not followed the statutory consultation process. When both their preferred WRMP19 desalination scheme and alternative water recycling scheme failed this resulted in a 'material change' to the plan, with new options having to be considered. However, not all of the alternative options were considered, nor was there any further consultation initiated, depriving the local communities and stakeholders of the opportunity to highlight concerns.

There is also great concern that the SW consultation did not make it clear that Portsmouth Water (PW) customers would receive the recycled water via the Farlington WTW whenever PW use the Havant Thicket Reservoir (HTR).

Section 5.3.2 refers to a collaborative approach by the applicant, yet their approach has been anything but collaborative. Despite repeated requests over the period of a year SW & PW have failed to form a stakeholder group to discuss effluent recycling via HTR, even though multiple other stakeholder sub-groups have been formed by PW to provide a liaison forum in association with the development of the spring-fed reservoir. The main reservoir stakeholder group and sub-group members have repeatedly asked for an effluent recycling group to be formed so that concerns about the environmental impacts can be discussed. In the past 2 weeks PW has confirmed a sub-group will be established, but there is no information on when it will first meet.

Section 5.3.4 refers to; Five EIA Working Groups have been set up by the Applicant to facilitate engagement with statutory consultees through the progression of the EIA for the DCO application. As local stakeholders we have no knowledge of this.

A more robust 'alternatives assessment' needs to be completed for the selection of the Water Recycling Plant (WRP) location as the process described on page 34/35 was not robust. The WRP is to be constructed on an uncontained 'dilute and disperse' landfill so release of leachate & landfill gas is inevitable and the risks to the internationally important harbour and local residents must be fully considered for both its construction and operation.

The water quality, hydrological and geochemical impacts, including salinity and temperature in the HTR, need to be considered under all operating scenarios. There does not seem to be any

reference to consideration of impacts on the reservoir and associated habitats. What will be considered is also not explicitly set out in other chapters of this scoping document.

It is unclear what operating scenarios for the effluent recycling plant and reservoir drawdown will be assessed. The full range of operating scenarios need to be modelled and assessed in the EIA as it cannot be assumed that the highest and lowest inputs would create the reasonable worst-case scenario, it could be a different combination of inputs and outputs.

The EIA needs to consider any potential impacts that may occur associated with a pollution event, including that associated with a short or longer-term discharge of out-of-specification recycled water entering the reservoir, which is to be used as an environmental buffer lake. Any negative impacts the effluent recycling scheme will have on the original spring fed reservoir proposal also need to be considered. This includes any potential loss in benefits, including any potential changes to seasonally fluctuating water levels, water temperature, salinity, risks of eutrophication and algal blooms as well as the loss of the very unique biodiversity opportunity to create a chalk-spring-fed reservoir.

While the use of the HTR for storage of recycled effluent is scoped into the assessment for marine impacts it is not clear whether all activities that give a connection to the marine environment are to be considered. Note that the significant benefit to the coastal SPA/SAC of spring water being pumped up to the HTR, reducing nitrate discharges into Langstone Harbour, will be reduced by the effluent recycling proposal and this is significant, as the benefit the reservoir provides in reducing nitrates to Langstone Harbour (helping to reducing eutrophication/ algal blooms) was a key benefit identified in the HRA for the spring fed reservoir. The modelling undertaken for the EIA must clearly demonstrate without doubt that the benefit is not diminished by the proposed scheme, or clarify the extent to which the benefit is lost.

Section 10.5.8 – Emissions net zero target - states that: 'A Strategic Objective for the Proposed Development is to support and contribute to Water UK's net zero target and the PIC'. However, this is a high energy and high carbon option that will make the carbon emissions of the company worse as the effluent recycling plant and 40km+ pipeline are required to pump 20Ml/d (8 Olympic size swimming pools) every day of the year, even when the water is not needed because the additional water is only actually needed as a drought resource. How will this be taken into account in the EIA when there are other more sustainable lower carbon solutions available?

The project makes no contribution towards achieving a science-based 1.5°C aligned transition towards net zero. The proposed scheme is infrastructure heavy and it is far from clear how the huge energy and carbon footprint generated over the 100-year operational life of the scheme will be assessed in relation to all of the potential operating scenarios, in order to give a meaningful analysis. Page 211 - In-combination and cumulative impacts with other projects are scoped out, even though most of the options selected by SW are high energy and carbon solutions involving desalination and effluent recycling. How will SW ever be made to take energy and carbon into account in their decision making if cumulative effects of their WRMP options are scoped out?

Noise and vibration at the reservoir site during construction and operation should not be scoped out of the assessment (Section 14.4.29 & 14.5.16 refer**),** neither should noise or vibration associated with operation of the pipelines (Section 14.5.13)

Section 15.6.6 states that there are no operational effects that are deemed likely to be significant and therefore operational effects are scoped out of the assessment. The resources needed to run the effluent recycling plant 24 hours a day including energy and chemicals are very significant, especially when the plant must run even when the water is not needed. If you add to that the energy needed to pump 20Ml/d of recycled water more than 40km to Otterbourne, also even when the water is not needed, this represents an enormous waste of resources. Additional energy resources will also be needed to mix the water 365 days a year. The use of this extra energy required for the proposed effluent recycling scheme will put unnecessary pressure on the local energy infrastructure at peak demand driving the National Grid to use less sustainable

energy production measures with a higher carbon footprint. Surely the excessive use and waste of energy must be taken into consideration as part of the EIA otherwise this undermines the whole purpose of doing an EIA, especially when there are other lower energy, more sustainable alternatives available.

The SW 2022 survey confirmed that 48% of people who responded to the survey did not support effluent recycling. Many people have said that they do not trust SW with this complex treatment process which is new to the UK. Significant numbers of people have indicated they will no longer drink tap water if the proposal to recycle effluent goes ahead. How will the EIA take into consideration the direct and indirect impacts associated with the rejection of tap water if this scheme goes ahead. These include;

- Manufacture and transport of many thousands of plastic bottles to meet increased demand.
- Waste disposal costs and environmental impacts of disposing of many thousands more plastic bottles. Likely increase in littering.

It is necessary to ensure that benefits are not double counted. The original spring-fed reservoir will provide many benefits to the local community in terms of recreational opportunities, health benefits (physical & mental), educational opportunities and tourism. The proposal for effluent recycling provides no added benefits to the local community in any of these respects, in fact as described above it could actually reduce the value of the reservoir benefits to the local communities and individuals. It is important that the EIA for the effluent recycling scheme does not claim benefits for the project that already being provided by the original reservoir scheme. There is a concern that such benefits have been inappropriately claimed in other SW reports to help justify the selection of the scheme.

Increased health & safety risks associated with new infrastructure. Section 16.6.11 confirms that the potential for the risk of interaction with operational/maintenance vehicles and plant during the operation stage will be considered. However, what will be considered is not clear. This should include;

- The new inlet/outlet offshore tower at the reservoir site – risks associated with youths trying to access the bridge, or jumping/ diving off it, risk of youths and others trying to swim out to the offshore tower, with additional risk associated with the recycled effluent inlet pipe and outlet pipe to Otterbourne operating 356 days a year.
- Infrastructure associated with the pipelines/ tunnels – shaft access points, air valves, washouts and manholes in areas of public open space and residential areas.

Apart from the risks associated with development and the new infrastructure there is no attempt to consider the longer-term health of people over many years from drinking treated effluent water. Often, potential harmful effects are not realised until many years after materials or substances are used by humans eg lead piping to deliver water and asbestos for fire retardation. Any health assessments should include a long-term consideration of peoples' health as well as the short-term consideration during development/construction. It is not known whether any studies have been made in the past on the long-term impact of drinking recycled water that may still contain all sorts of trace substances but they should be done.

Page 481/482 does not provide any information on the baseline condition of the reservoir as a surface water body filled with water from the Havant & Bedhampton Springs. It is important to identify the baseline as it has planning permission, is under construction and will be impacted by the effluent recycling proposal. Additionally, HTR was to have been filled with naturally filtered chalk spring water that would have created a unique biodiversity opportunity. How will this lost unique biodiversity opportunity be assessed in the EIA?

While the HTR wetland is held back behind a retaining structure during drawdown events, the reality is that for most of the time the water level in the reservoir will mean that there is hydraulic

continuity between the reservoir and the wetland. Recycled effluent will mix with spring water and flow into the wetland. How will any potential impact on the wetland be assessed?

There is a lack of public trust in SW to complete the necessary modelling with respect to water quality impacts for the reservoir and long sea outfall. This is fundamental as the modelling outputs will be used in the EIA. How will the modelling methodology, parameters, scenarios and outputs be independently peer reviewed to give confidence that the EIA will be based on meaningful data?

The above concerns are just some of what is laid out in the attached Annex. There are many omissions from the EIA that need to be addressed so that the full adverse environmental impact of this proposed project is assessed and laid out to inform the possible granting of Development Consent.

Yours faithfully

Lisa Walker – Clerk
For and on behalf of Rowlands Castle Parish Council

# Annex A

## Hampshire Water Transfer & Recycling Project – EIA Scoping Report – In-depth Comments and Proposed Inclusions for Assessment

**General Comments**
Very concerned that the goal posts keep moving on this project. Initially the project was to supply up to 15Ml/d with a daily sweetening flow through the plant and 40km+ pipeline to Otterbourne of 5Ml/d. Now the EIA Scoping indicated at 1.3.8 it will be 20Ml/d, a massive increase in daily chemical, energy and carbon impacts, making an already unsustainable scheme even more unsustainable.

- This is a concern for the EIA as work completed quickly becomes out of date as the parameters change. It is important that the final EIA uses modelling and assessment based on the final design parameters.

Section 1.4.3 indicates that Southern Waters (SW) Strategic Objective is to deliver solutions which are 'best value' for customers and continue to allow the company to make progress towards meeting its commitment to be net zero carbon by 2030. We are very concerned that the **proposed scheme is <u>not</u> best value and does <u>not</u> contribute to carbon reduction** when it requires 20Ml/d of recycled water to be treated and pumped every day of the year, even when the water is not needed as it is supposed to be just a drought resource. As a new technology to the UK costs will continue to balloon, not just to bills, but to the environment and the climate as well.

**A. <u>Description of the development</u>** - Specific feedback on Section 3, but it also has implications for other chapters.
3.3.13 – Any works needed to upgrade the Otterbourne Water Supply Works (WSW) as a result of receiving water from this scheme should be considered as part of this EIA.
In addition, any works needed to upgrade the Farlington WSW should also be considered as part of the EIA. The Dissolved Air Flotation plant sized and designed for treating spring water stored in the reservoir may need to be upgraded or modified in some way as a result of the effluent recycling scheme. For example, changes to the treatment process may be needed to address taste issues. If so, these changes must be considered in the EIA.
3.3.17/ 3.3.20 – Indicated that it is not clear how many pumping stations or break pressure tanks will be required along the route. Provisional locations were shown on the 2022 consultation maps. Likely locations should be identified and assessed as part of the EIA, as they have the potential to cause adverse impacts to people and ecology. For example, as a result of noise pollution as pumps are likely to run at night.
3.5.10 – For pipeline construction using tunnelling the text indicated; The exact locations of launch, reception and any intermediate shafts would be subject to further site selection and public consultation. However, it is already clear that some of the shafts would be needed in very sensitive areas, such as the conservation area at Old Bedhampton. Where shafts and other infrastructure are to be located in residential areas, or locations with historic or ecological significance the proposed location for that infrastructure/ shaft must be included in the EIA so that the impacts can be properly assessed. This applies to tunnelling, micro-tunnelling and directional drilling.

**B. <u>Consideration of Alternatives</u>**
Section 4.1.2 confirmed that the Planning Inspectorate recommends that the EIA Scoping Report should include an outline of the **reasonable alternatives considered** and the reasons for selecting the preferred option. Section 4.1.3 confirms the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (hereafter referred to as the EIA Regulations) set out that an ES should include a description of **reasonable alternatives in terms of design, technology, location, size, and scale studied by the Applicant.** Unfortunately, the alternatives assessment process described in the scoping since 2019 (Table 4.1) has focused completely on desalination and water recycling options. Other more sustainable alternatives that could be developed more

sustainably at less cost and more quickly have not been identified in the EIA scoping, instead they have been 'parked' by Southern Water.

It is worth noting that 48% of the people that responded to the Southern Water summer 2022 consultation on this scheme did not support water recycling via the Havant Thicket Reservoir and 46% did not support the options appraisal process. Nor is water recycling favoured in the company's own customer research, customers favour more natural solutions such as aquifer recharge and reservoirs.

The EIA must consider and assess all of the alternatives that could reasonably be developed to meet some of the demand deficit in the short to medium term, as other alternatives are likely to have less significant environmental effects. Alternative selection should not work solely on the basis that all of the longer-term potential water demand deficit needs to be met by just one scheme. This prevents more sustainable options being selected. Section 4.2.3 confirms that the Wessex/Bristol Water regional transfer was rejected because it could not deliver water supplies to address the forecast deficit by 2027, but nor could the selected scheme, as the Havant Thicket Reservoir would not be available until 2029. This shows that the options appraisal process has been flawed. Alternative options that should be considered include the following.

- Moving the Otterbourne abstraction to just above the tidal limit of the River Itchen, immediately protecting 9km of internationally important chalk river (SAC). Requiring minimal infrastructure with the option to transfer water to Otterbourne WSW or Testwood WSW both less than 10km away.
- Multiple aquifer storage schemes, including Test MARS which SW's own HRA suggests could provide up to 15ML/d.
- New winter storage reservoir options (including options similar to those considered by the Water Boards in 1960 to 1980)
- Re-using the Farlington Springs source abandoned in 1905 and optimising water production from the chalk/ clay interface between Farlington and Bedhampton, which otherwise flows out to sea and would require minimum treatment and can be directed to the existing Farlington WSW.
- Other effluent recycling schemes closer to where the water is needed in the Southampton area.
- Effluent recycling from Peel Common WWTW to a local river or bespoke environmental buffer lake (EBL), which SW's own report (Gate 2, Annex 5, page 140) confirmed has more environmental benefits to the coast than any Budds Farm option. The EBL would not need to be at Otterbourne. Noting that Option B5 could readily be adapted, there is no need to pump effluent east from Peel Common to a Water Recycling Plant at Budds Farm (Broadmarsh) when the supply deficit is actually in the west of Hampshire. Pumping it 17km east is a waste of money for the extra pipeline, as well as the wasted energy and carbon to operate. The best value assessment and option selection is flawed and more cost-effective options involving Peel Common, which is closer to where the water is needed, should be explored as part of the EIA alternatives assessment.

Note: Section 4.3.14 stated; Option B.5 was ranked second on account of its higher cost relative to Option B.4, its lower flexibility in scalability terms and its lesser ability to act as a regional asset that benefits both Southern Water and Portsmouth Water. This argument is flawed, Budds Farm effluent could be piped to a WRP near Peel Common if extra capacity were needed in the longer term. If SW developed a Peel Common water recycling scheme without the reservoir, then Portsmouth Water would not need to rely on effluent recycling as a regional asset, as they would have the reservoir to meet their long-term needs.

Information in the previous SW Strategic Environmental Assessment (SEA) cannot be relied on for use in the full EIA. The significant flaws in the SEA process need to be highlighted and addressed as part of the new EIA. Not all potential impacts were considered. For example, impacts on the coast were dismissed without even understanding what the pathways and impacts were. There was also a concern that benefits provided by the original reservoir scheme

were being double counted which was not appropriate. How does a scheme that scored highest in the SEA for adverse impacts get selected?

The assessment of the full range of alternatives is important not only to the assessment in the EIA but also to Stage 3 of the Habitats Regulation Assessment which is required.

**C. Consultation**

Section 5.3.1 confirmed that the DCO process requires consultation and stakeholder engagement as part of the progression of the Proposed Development. It is prudent at this time to draw to your attention to the fact that **appropriate consultation has not taken place** through the options appraisal process, nor since the current proposal was selected.

There is significant concern amongst the local community that **SW did not follow the statutory consultation process,** when both their preferred WRMP19 desalination scheme and alternative water recycling scheme failed. This resulted in a 'material change' to the plan, with new options having to be considered. However, not all of the alternative options were considered, nor was there any further consultation initiated, depriving the local communities and stakeholders of the opportunity to highlight concerns and alternative options.

There is also a significant concern that the SW consultation documents did **not make it clear that Portsmouth Water (PW) customers would receive the recycled water** via the Farlington WTW whenever PW use the reservoir.

There is a real concern that Southern Water have **not been open and transparent with the information needed to be able to understand what is proposed**. When reports have been published relating to the effluent recycling scheme. The Gate 2 documents were very heavily redacted, including the figures showing the scheme, making it virtually impossible for a member of the public to understand what was proposed. Abbreviations used in the reports were set out in a separate 17-page annex. Information was spread over a number of technical documents making them impenetrable to a member of the public. The options appraisal report, SEA and HRA which were supposed to support the draft WRMP24 were made restricted documents and Southern Water refused to provide access to them in Hampshire.

Section 5.3.2 refers to a collaborative approach by the applicant, yet **their approach has been anything but collaborative**. Despite repeated requests over the period of a year SW & PW have failed to form a stakeholder group to discuss effluent recycling via Havant Thicket Reservoir, even though multiple other stakeholder sub-groups have been formed by PW to provide a liaison forum in association with the development of the spring fed reservoir. The main reservoir stakeholder group and sub-group members have repeatedly asked for an effluent recycling group to be formed so that concerns about the environmental impacts can be discussed. In late July Portsmouth Water confirmed a sub-group will be established, but there is no information on when it will first meet.

Section 5.3.4 refers to; Five EIA Working Groups have been set up by the Applicant to facilitate engagement with statutory consultees through the progression of the EIA for the DCO application. As local stakeholders we have no knowledge of this.

**D. Water Recycling Plant at Broadmarsh**

A more robust alternatives assessment needs to be completed for the selection of the Water Recycling Plant (WRP) location. The process described on page 34/35 was not robust. For example, sites were excluded if they were more than a short distance away from Budds Farm. However, that would not be a limiting factor. It is not credible that constructing the WRP on an uncontained dilute and disperse landfill site adjacent to an SPA, SCA, SSSI and Ramsar is the best solution, when the development clearly presents a number of risks to the adjacent internationally important site and should fail a Habitats Regulation Assessment.
If the mitigation hierarchy is applied a different site should have been selected that did not have the significant risks development of the Broadmarsh landfill site has. As is indicated in 11.9.2 of

the scoping report Primary Mitigation should be achieved by avoiding known sources of contamination risk. Given that the dilute and disperse landfill is a known and significant contamination source how/ why has that site been selected?

It is worth noting that 41% of the people who responded to the Southern Water summer 2022 public consultation did not support the selection of the Broadmarsh landfill (site 72) for the location of the Water Recycling Plant.

The WRP is to be constructed on an uncontained dilute and disperse landfill so release of leachate & landfill gas is inevitable and the risks to the internationally important harbour and local residents must be fully considered. Section 3.5.2 acknowledges that construction techniques can try to reduce the impacts, but the reality is that given the lack of an engineered containment to the landfill they cannot stop it. Section 5.2.37 confirms that the assessment is based on a realistic worst-case approach therefore the release of leachate and landfill gas to sensitive receptors does need to be robustly considered. Following application of the mitigation hierarchy (5.2.39) the landfill site should <u>not</u> have been selected to avoid the impact.

The Conceptual Model for the proposed Water Recycling Plant, tunnels and shafts associated with the three pipelines proposed at the Broadmarsh landfill is set out in the Preliminary Hydrological Impact Assessment (Appendix 18.1, Table 3.1, 3.2 & 3.3). The Conceptual Model is missing important information and should include the following:

- The presence of the buried former Hermitage Stream channel and creeks below the landfill which create the risk of preferential pathways from the landfill to the harbour. As the route of the stream was diverted prior to the commencement of tipping.
- Groundwater flow in the chalk is confirmed to be to the south, carrying the water towards the harbour but the potential presence of springs emerging in the harbour is not identified.

Appendix 18.1, Section 4.4.3 (Construction Impact) and 6 (Conclusions) should specifically recognise the significant risk of piling and excavating shafts through the uncontained landfill and variable (depth & permeability) alluvium layer into the chalk aquifer, creating new preferential pathways to the aquifer and making existing pathways worse.

Risk from construction, maintenance and burst of pipes carrying effluent from Budds Farm to WRP and waste/ reject liquids from WRP to Budds Farm WWTW and Eastney PS must be considered in the EIA.

Visual/ landscape impact over a wide area will be necessary given the need for several large holding tanks and chemical storage units to be constructed above ground in addition to the main WRP buildings and plant (3.5.3 refers). Noting that 3.6.4 confirms that the buildings are likely to be 13m high and they are already on an unnaturally high mound (c.14m OD) in the local landscape. As a result, the WRP will be visible from vantage points around the harbour and likely from Old Bedhampton (Conservation Area).

**E. <u>Pipelines/ tunnels</u>**

Not clear how maintenance events are being considered for pipelines/ tunnels at different depths. What would be involved and how often? Is this being taken into account in the EIA?

Refers to washouts at 750m to 1km (3.6.13) and the fact they could release source water into local water courses during commissioning, repair and maintenance (3.6.11), but not clear how often they are assuming that will happen for the different pipelines. Use of washouts from the different types of pipeline should be considered in the EIA.

Not clear if there would be any noise or smell from the normal functioning of air valves within the pipelines carrying water of different qualities (final effluent, recycled water, reject water), or whether this has been taken into consideration. This should be considered as part of the EIA.

**F. Air quality – Odour**

Construction impacts for WRP at Broadmarsh – it is suggested on page 69 (pdf 80) that impacts on human and ecological receptors as a result of odour emissions is scoped out. This is not appropriate. The argument is made that because this was not raised as an issue for a previous planning application the same would apply for the proposed development. The proposed development is of a completely different scale, magnitude, and duration, with the requirement for large scale excavation of the historic landfill to provide a more even development surface, to excavate pipelines, services, as well as to construct shafts through the landfill for tunnel construction, with tunnels exiting the site in 3 different directions. The landfill was deposited between 1960 and 1990 and has been slowly rotting in the ground for decades. Opening up the landfill for the necessary construction operations will let in oxygen and the wind potentially resulting in the generation of significant odours and air quality issues for local residents and users of the adjacent country park and coastal path. It would be very difficult to stop odours being generated, solutions such as adding water as a mist could actually make the situation worse.

- **The impacts during construction of the WRP (associated buildings, tanks, pipelines, services, pumping stations etc.) on human & ecological receptors (adjacent SPA, SSSI) should be scoped in for assessment, including odour impacts.**

Reject water; Provided the reject wastewater stream for the effluent recycling plant is fully enclosed within sealed pipes and tanks then the operational phase could be scoped out for odour, but this needs to be checked.

If the water quality assessment results in an increased risk of algal blooms at the reservoir under any of the broad range of operating regimes that need to be assessed, then there is an increased risk of odour during operation of the reservoir. When algae in a reservoir die films, scums and algal matts can be generated which in warm weather can degrade to produce significant odour problems.

- **Given the proximity of the reservoir to residential properties at Rowlands Castle, Warren Park and Leigh Park, as well as the recreational use of the site the risk of odour issues during operation at the reservoir site should be scoped in and assessed.**

**G. Archaeology & Cultural Heritage**

Section 7.6.18 states that; No physical works or visible change are proposed at the Eastney TT or Eastney LSO or Havant Thicket Reservoir during operation, and it is therefore proposed to scope out any effects, whether arising from physical change or change to setting of designated and non-designated heritage assets during operation. However, changes are occurring to the original reservoir design since the proposal for the effluent recycling has come forward which mean that **the impacts on heritage and cultural aspects at the reservoir site should be assessed both during construction and operation.**

For example, changes include the following.

- There is a proposal for a shared pipeline route, which will make the working area and the excavation for construction of the pipelines larger, including where the pipes pass through the Grade II listed Historic Park and Gardens. This construction impact through Staunton Country Park should be considered as part of the assessment.
- To help the reservoir blend into the natural landscape and minimise any visual impact on the Grade II listed Historic Park and Gardens the original reservoir inlet/outlet shaft was to be contained within the embankment adjacent to a semi buried control house. This was particularly important as this part of the reservoir is in, or immediately adjacent to the designated Conservation Area shown on Figure 7.1 (sheet 1). Portsmouth Water have recently confirmed a design change with the inlet/ outlet shaft moved and located offshore from the control house, where it will be visible from every vantage point around the reservoir site including from;
    - The terrace view point within the Grade II listed park, and
    - The important view point to be constructed at the end of The Avenue, where visitors will exit from the historic Staunton Country Park onto the reservoir site

It is highly likely that this design change has been triggered by the addition of extra inlet and outlet pipes required for the effluent recycling scheme, as well as to enhance the opportunities to mix the recycled water with the spring water. The proposed new inlet/outlet tower will be present throughout the operation of the site impacting the historic landscape / views and should be considered in the assessment.
These impacts also need to be considered in-combination and cumulatively with the adverse impact of the original reservoir proposal.

**Old Bedhampton Conservation Area**; The construction of tunnel shafts in and around the Conservation Area and potentially within Bidbury Park will have very significant impacts on this historic area for a long period. The construction impacts on archaeology and cultural heritage in this area need to be very carefully assessed.

**H. <u>Terrestrial & Freshwater Biodiversity</u>**
Pg124 – A general reference is made to hydrology and water quality impacts. When considering water quality changes to stream environments it is important to consider all of the potential geochemical impacts, including changes in salinity and temperature to the downstream watercourse/ habitats.

**The water quality, hydrological, geochemical impacts, including salinity and temperature on the Havant Thicket Reservoir also need to be considered under <u>all</u> operating scenarios.** There did not seem to be any reference to consideration of impacts on the reservoir and associated habitats in this section. What will be considered is also not explicitly set out in other chapters of this scoping document.

Pg 125 – Indicates that noise is only a problem to biodiversity during construction of the WRP. This is not the case, it will also be an issue that needs to be considered when constructing the pumping stations, break pressure tanks, pipelines, tunnel shafts etc. This is not currently recognised.

Page 128 – Indicated that Terrestrial invertebrates are scoped out. **Aquatic invertebrates** in the reservoir and downstream watercourses need to remain scoped in. River habitat and corridor surveys mentioned on page 130 should include kick sampling, as this revealed unusual invertebrates in the ephemeral streams at the reservoir site, so these may also be found downstream of the reservoir.

Page 134 – **Assessment Scenarios**; It is unclear what operating scenarios for the effluent recycling plant and reservoir drawdown will be assessed. The full range of operating scenarios need to be modelled and assessed in the EIA as it cannot be assumed that the highest and lowest inputs would create the reasonable worst-case scenario, it could be a different combination of inputs and outputs.

- From no recycled effluent input, to the base flow in operation (currently stated to be 20 Ml/d, but previously stated to be 5, 7.5 or 15Ml/d), through a range of flows in to the reservoir up to 60Ml/d.
- From the baseline transfer to Otterbourne currently stated to be 20 Ml/d (but previously stated to be 5, 7.5 or 15Ml/d), through a range of flows out of the reservoir up to 90Ml/d.
- The period of operation of the scenario will also be relevant to the impact on habitats and biodiversity. Including consecutive year droughts. This will also have impacts on the reservoir retained wetland, especially in multiple year drought scenarios.

**Changes to ecology / biodiversity net gain as a result impacts on seasonally fluctuating water levels;** Southern Water have indicated in published reports that they will keep the reservoir topped up. This would result in a loss of biodiversity net gain at the reservoir. As the operating regime for the spring fed reservoir would have resulted in seasonally fluctuating water levels, with water levels dropping through the summer due to the compensation discharge to the Riders Land Stream and evaporation. This would have exposed islands in the wetland for nesting birds, provided muddy edges for chicks and returning migrant birds to feed. If these benefits are

to be lost then this must be included in the EIA and assessed as a cumulative negative impact upon the original reserve scheme.

**Impacts on the retained wetland;** The EIA should specifically include a review on the impacts of the effluent recycling scheme on the retained wetland at the reservoir in terms of potential changes in water quality and changes in water levels as a result of the different operating regimes, including drought use with more drawdown events and potentially more rapid, and/or longer drawdown events when larger volumes are supplied to Otterbourne via the new transfer pipeline. These changes could affect the biodiversity present in the wetland, the habitat quality and distribution across the wetland.

**Water quality impacts on ecology**; The EIA needs to consider any potential impacts on ecology that may occur associated with;

- A **pollution event(s)**, including that associated with short or longer-term discharge of out of specification recycled water entering the reservoir, as it is to be used as an environmental buffer lake by Southern Water.
- **Bioaccumulation of elements or compounds** in the reservoir water or sediment, plus the risk of their remobilisation in storm or other events.

More detail is provided in the Water Environment section Q response below.

This chapter needs to include **impacts on Brent geese and wading birds** that use terrestrial habitats which are supporting habitats to the SPA, including the WRP site. Noting that construction of the WRP and three pipeline tunnel shafts at Broadmarsh and further shafts at Budds Farm WWTW will take place over a period of several years. Normal mitigation would be to avoid construction at sensitive times of year for the species using the SPA but that will not be practical given the scale of works involved.

**Habitats Regulation Assessment (HRA)**; The scoping report confirms that an HRA will be completed. It is worth noting that the previous Southern Water HRA screening for this scheme was very disappointing and did not consider all of the potential effects on internationally important sites. For example, it did not consider the changes to the compensation discharge from the reservoir via the streams to Langstone Harbour (SPA, SAC, Ramsar), nor emergency drawdown testing or emergency events. Impacts at the coast were also not appropriately considered in terms of the reject water discharge to the Solent (noting the volumes have now changed again), leachate and other risks associated with the construction of the WRP at Broadmarsh on the coast, or the loss of nitrate benefits to Langstone Harbour. The original reservoir scheme was also to provide a benefit in drawing recreational visitors away from the coast (especially dog walkers), who may return to the coast at times when the reservoir is drawn down, which is expected to be more frequent once the transfer to Otterbourne is in place.

- **It is essential that the HRA is robust and considers all of the potential impact pathways.**
- **Given that a significant impact is expected to be identified from a more robust assessment it is essential a comprehensive assessment of the alternatives is undertaken at Stage 3, taking into account the comments made in Section B above. A number of smaller schemes are likely to have less impact on the international important sites.**

**Pg 135 In-combination & cumulative effects** – Any negative impacts the effluent recycling scheme will have on the original spring fed reservoir proposal also need to be considered. This **includes any potential loss in benefits**, including any potential changes to seasonally fluctuating water levels, water temperature, salinity, risks of eutrophication and algal blooms. As well as the loss of the very unique biodiversity opportunity to create a chalk spring fed reservoir.

**Cumulative effect(s) on Protected Species**, This infrastructure heavy solution requires three pipelines (including a 40km+ pipeline) many pumping stations and a number of break pressure tanks. Some will be located along woodland edges, or below woodlands or other bat habitats.

The impact of the scheme on bats was not properly considered during the previous Habitats Regulation Screening.

- **The impact on bats needs to be considered at each site, cumulatively for all sites involved in the scheme, along with the in-combination impacts with other schemes and projects, including the impacts of the original spring fed reservoir scheme.**
- Particular attention is needed to the rarer bats which have been shown to be using the habitats in the vicinity of the Havant Reservoir Site which are already having to adapt to significant loss and changes in the habitats at the reservoir site.

**Invasive species transfer risk;** If one of the pipeline experiences a burst, or maintenance and flushing is required, there is the potential risk of non-native and invasive species transfer to other catchments. For example, the River Itchen SAC, River Meon Compensatory SAC, River Hamble etc.

- The risk of the spread of non-native and invasive species does need to be considered in the EIA.

**Delivering 10% Biodiversity net gain;** It is important that the net gain being delivered for the original spring fed reservoir project (including on and off-site mitigation and compensation) is not counted as biodiversity net gain for the effluent recycling scheme.

- **Separate mitigation and compensation measures must be proposed to deliver an additional 10% biodiversity net gain.**

**Action to top up the wetland if more frequent drawdown proposed**; The transfer of larger volumes of water to Otterbourne is likely to result in more frequent and potentially prolonged drawdown events. The EIA should consider if the scheme needs to include a mechanism for topping up the wetland in a drought from water abstracted from the main reservoir bowl, below the drawdown level. This would be to protect the wetland habitats from drying out and dying. Any solution would need to be sustainable and avoid the need for regular man entry into the wetland for maintenance or refuelling. For example, by installing a wind or solar pumps to add water to the retained wetland during drawdown.

**I. <u>Marine Biodiversity</u>**

9.4.7 While the use of Havant Thicket Reservoir for storage of recycled effluent is scoped into the assessment for marine impacts it is <u>not</u> clear whether all activities which give a connection to the marine environment are to be considered. For the avoidance of any doubt the following activities which can result in an impact on the marine environment need to be considered in the assessment.

- **Daily compensation discharge/ spillway discharge** from the reservoir via the Riders Lane and Hermitage Streams to Langstone Harbour. This will transfer a mix of recycled effluent and spring water daily to the coast. The ratio of the mixed water will be variable dependent on the operating scenario of the effluent recycling plant.
- **Emergency drawdown annual testing, as well as operation in an emergency.** The discharge would be via the Riders Lane and Hermitage Streams to Langstone Harbour. Once the channels in the Hermitage Stream are naturalised in accordance with the S106 agreement there will be an increased risk of sediment scouring and discharge to the coast, as well as the carriage of a large volume of recycled effluent mixed with spring water to the harbour.
- **Reduced pumping of spring water up to the reservoir** each autumn/ winter if the reservoir has been kept topped up with recycled effluent through the summer, or if the reservoir has been drawn down but already partially or completely topped up with recycled effluent. These scenarios result in a reduced benefit to the coastal SPA/ SAC as spring water elevated in nitrates that should have been used to top up the reservoir is instead discharged to Langstone Harbour.
- **A pollution event,** including that associated with short or longer-term discharge of out of specification recycled water entering the reservoir, as the reservoir is to be used by Southern Water as an environmental buffer lake.

Note: The significant benefit to the coastal SPA/SAC of spring water being pumped up to the reservoir, reducing nitrate discharges into Langstone Harbour will be reduced by the effluent recycling proposal and this is a significant in combination/ cumulative impact with the originally approved spring fed reservoir. This in-combination/ cumulative effect needs to be assessed, as the benefit the reservoir provides in reducing nitrates to Langstone Harbour (helping to reduce eutrophication/ algal blooms) was a key benefit identified in the HRA for the spring fed reservoir. The modelling undertaken for the EIA must clearly demonstrate without doubt that the benefit is not diminished by the proposed scheme, or clarify the extent to which the benefit is lost.
All of these **impacts must be modelled and assessed under a full range or normal and more extreme operating scenarios** as it cannot be assumed that the highest and lowest inputs would create the reasonable worst-case scenario, it could be a different combination of inputs and outputs.

- From no recycled effluent input to the base flow in operation (currently stated to be 20 Ml/d (but previously stated to be 5, 7.5 or 15Ml/d), through a range of flows in to the reservoir up to 60Ml/d.
- From the baseline transfer to Otterbourne currently stated to be 20 Ml/d (but previously stated to be 5, 7.5 or 15Ml/d), through a range of flows out of the reservoir up to 90Ml/d.
- The period of operation of the scenario will also be relevant to the impact on habitats and biodiversity. Including consecutive year droughts.

Section 9.5.10 – **fish passage/ spawning**; refers to the shallow depths of water and obstructions that would deem the Hermitage Stream unsuitable for use by migratory species. There is no mention of the fact that before the effluent recycling scheme is complete Portsmouth Water are required to carry out works to make the streams south of the reservoir more suitable for fish migration. Given that these works are required through a planning condition and Section 106 agreement, surely the EIA should consider the potential for fish and eel migration in the context of the improved habitat.

Page 135 - Potential effects from visual disturbance (human presence, vehicle movement and light pollution) on the coast are screened out for construction. It is not clear if this includes the impact of above ground construction noise and vibration on the marine environment.
**Construction noise and vibration should <u>not</u> be screened out for the marine environment.** There is certainly a potential impact on birds which are supporting features to the SPA, but also potentially to other marine ecology. For example; piling, noise, vibration etc from construction of the WRP and tunnel shafts close to the harbour must be considered in the assessment.

**In combination and cumulative effects of this scheme on the marine environment** need to be assessed against; the original spring fed reservoir scheme (including the coastal benefits it provided in reducing nitrates), coastal flood defence projects, any alterations going on at Budds Farm WWTW (for example to address the problem with too many storm discharges), and other coastal effluent recycling schemes including on the Isle of Wight and at Littlehampton.

Page 192 - Pollution events (from use of plant and machinery) are scoped out for the operational phase. However, the operational phase will include maintenance of buildings, plant and pipelines etc. Therefore such risks cannot be scoped out. There is also the risk of emergency drawdown events and routine annual testing of the emergency drawdown systems during the operational phase.

- **The risk of pollution events and impacts to the marine environment should be scoped in during the operational phase.**

**Introduction of Invasive Non-Native Species;**
Page 192 - Scoped out for the marine environment during construction and operation. Is there a potential for non-native species to transfer to and via the marine environment from the reservoir, if the seed stock is tolerant of marine emersion for short periods?

**Please also refer to feedback on WRP at D above which is relevant to the marine environment.**

**J. <u>Climate Change and Carbon</u>**

Section 10.5.8 – **Net zero target** - States that; A Strategic Objective for the Proposed Development is to support and contribute to Water UK's net zero target and the PIC. However, this is a high energy and high carbon option that will make the carbon emissions of the company worse as the effluent recycling plant and 40km+ pipeline is required to pump 20Ml/d (8 Olympic size swimming pools) of water every day of the year, even when the water is not needed because the additional water is only actually needed as a drought resource.

- How will this be taken into account in the EIA when there are other more sustainable lower carbon solutions available?

Section 10.6.2 – Decommissioning impacts; It does not seem reasonable to assume that the decommissioning impacts will be negligible.

Page 207 – Greenhouse gas emissions; There is no recognition that greenhouse gases will be emitted when the landfill site at Broadmarsh is opened up during construction of the WRP and shafts are excavated for the tunnels, or during movement and temporary stockpiling of excavated waste.

- **The risk of greenhouse gas emissions from opening the landfill to expose the waste should be included in the assessment.**

Page 207/208 indicated scoped out extreme weather events which are becoming more common, plus in-combination climate change impacts. This seems to be a strange decision without adequate justification. If an extreme weather event hits during construction it could lead to significant effects.

**Energy & carbon use during operation**; The project makes no contribution towards achieving a science-based 1.5°C aligned transition towards net zero. The proposed scheme is infrastructure heavy and it is far from clear how the huge energy and carbon footprint generated over the 100 year operational life of the scheme will be assessed in relation to all of the potential operating scenarios, in order to give a meaningful analysis of carbon use. For example, during operation SW now propose to treat and pump 20 Ml/d (8 Olympic size swimming pools) of recycled water over 40km every day, even though the water is only needed in a drought scenario. That makes absolutely no sense from a sustainability perspective.

- How will this be assessed when there are lower energy and carbon solutions available? (for other alternatives see feedback on alternatives) If the mitigation hierarchy is applied a scheme with a much lower energy and carbon footprint should have been selected that did not require operation 365 days a year when the scheme has been selected for development as a drought resource.
- If a bigger volume effluent recycling scheme is developed in the future the emissions and carbon impacts will only increase. How will that be taken into account?

Page 211 - In-combination and cumulative impacts with other projects are scoped out, even though most of the options selected by SW are high energy and carbon solutions involving desalination and effluent recycling. How will SW ever be made to take energy and carbon into account in their decision making if cumulative effects of their WRMP options are scoped out?

**K. <u>Land Quality and Ground Conditions</u>**

See feedback at D above for the WRP at Broadmarsh landfill re risks associated with constructing the WRP on the dilute and disperse landfill, highlighting the risks to the harbour from the historic stream channel and creeks present below the uncontained dilute and disperse landfill.

Page 239 - Table 11-13; The magnitude of the impacts does not seem to make any provision for impacts on the marine environment or biodiversity. This is a significant risk given the proximity of the WRP site to the harbour SPA, SAC, Ramsay and SSSI.

Both leachate and landfill gas migration along preferential pathways from the WRP created by tunnel/ pipelines (including bedding materials) needs to be considered during construction & operation in relation to risks to buildings and residential properties. Given the new pathways to be created by the scheme an arbitrary distance should not be used to assess this risk. A more robust assessment of the risk is needed.

Section 11.7.17 states; Assessment of potential effects will consider the construction and operational phases of the Proposed Development. It is important that the operational impacts associated with any future maintenance of infrastructure at the WRP is considered in the assessment, as every time any excavation is needed workers will be put as risk, by exposure to contaminated ground. Opening up the landfill for maintenance activities, new services etc. also opens up other pathways for impacts such as odour and risks to the marine environment.

Section 11.7.21 refers to in-combination effects, but does not appear to consider the marine environment. If other projects are taking place on the coast the in-combination effects should be considered. For example, any coastal defence works (including those to protect landfill areas), any works at Budds Farm WWTW and the Aquind Interconnector project.

Page 242, Table 11-15; does not seem to make any provision for scoping in the impacts on the marine environment or biodiversity from construction (or maintenance during operation) of the WRP on the dilute & disperse landfill at Broadmarsh. There is a significant risk from developing in the landfill given the proximity of the WRP site to the harbour SPA, SAC, Ramsar and SSSI. These can be;

- Direct discharge of mobilised contaminants from the landfill to the harbour via current surface water ditches and pipes.
- Re-mobilisation of contaminants and gas via preferential paths of weakness. For example, buried historic harbour channels and historic surface water drainage points.
- Indirect discharge of leachate / remobilised contaminants to the harbour via the underlying chalk aquifer into which piles will be driven and tunnel shafts/ pipelines constructed. Groundwater flow is to the south below the landfill and in places may emerge through the harbour mud or in offshore springs.

Page 234, Table 11-15 scopes out maintenance during operation which is a mistake, see 11.7.17 explanation above.

**L. <u>Landscape and Visual Impact</u>**

Section 13.3.2 states; Stakeholders were informed that no nighttime photography is planned as part of the EIA, and no concerns were raised on this point. As the WRP will operate 24 hours a day with staff present at night, presumably lighting will be required at night. Given the estimated height of structures at the site is 13m and the buildings will be located on a hill, it will be very difficult to screen these structures as planting will not provide an effective screen. Lighting could have a visual impact from some distance away. Including potential impacts on Langstone Harbour SPA & SAC.

- An assessment of the visual impacts of the WRP at night should be considered as part of the EIA.
- The potential impacts on biodiversity of lighting should also be considered.

Page 325 indicates that lighting is scoped in for construction and operation. How will the impacts be assessed if there is no nighttime photography?

Page 284 confirmed that feedback from HCC stated that the proposed AGP and the proposed WRP should be included in the LVIA with consideration of impacts to open coastal land from the sizing and scale of the proposed WRP. This should include night time impacts.

**Zone of visibility from around Langstone Harbour;** Figure 13.4 (sheet 1 & 8) seems to have an artificial boundary to the zone of visibility as an arc across just a small part of the harbour. The zone should be extended to properly illustrate where the WRP will be visible from across

Langstone Harbour, including at Hayling Island. The visual impact from around Langstone Harbour must be fully considered and not screened out by an arbitrary distance parameter.

**Visibility of the WRP from Old Bedhampton needs to be considered;** The zone of visibility is not shown extending to Old Bedhampton on Figure 13.4 (sheet 2). Given that the WRP is located on a raised mound (c. 14mOD), the buildings and plant are anticipated to be 13m high, and the residential area to the north is much lower this needs to be checked. If the WRP buildings or plant may be visible from residential properties in Old Bedhampton, or from the historic Conservation area, the study area should be extended to include these areas.

**Need for additional representative viewpoints**; Figure 13.4 the representative viewpoints shown on the map are not adequate to assess the visual impact of the scheme on the surrounding area. Additional representative viewpoints need to be added to the map.

- At key vantage points from the Hayling Billy coastal path and from the sea wall at Farlington Marshes, as these are important leisure viewpoints. This should include a viewpoint in the vicinity of the disused old Oyster beds area on Hayling Island. This should include daytime and night time views, as the 13m high WRP structures are likely to be lit at night as the plant will run 24 hours a day and be manned. Section 13.5.20 confirmed that the WRP will be visible from the Hayling Billy Trail. The northern section of which is also designated as the West Hayling and Hayling Billy Local Nature Reserves.
- From Old Bedhampton to assess the impact of views across to the WRP. Taking into consideration visibility from residential properties and the historic Conservation Area.
- From the cycleway/ road bridge over the Hermitage Stream at Harts Farm Way.
- Around the Havant Thicket Reservoir, including from the embankment circular route, adjacent to Rowlands Castle (East), Havant Thicket woodland edge viewpoints(North), the Leigh Park viewpoint (SW), proposed visitor centre (NW), from the Staunton Way, as well as at the key Avenue viewpoint (South) where the historic ride/ path from Staunton Country Park (SCP) rises to the top of the reservoir embankment.
- Additional key viewpoints from within SCP including the important and valued historic view from the top of the terrace & Look Out feature from which the reservoir will be visible. Plus, from the HCC boundary alongside the Riders Lane Stream looking north and from the Historic Conservation Area which crosses into the reservoir site.
- All of the viewpoints from which the reservoir is visible, including the new viewpoints around the embankment, plus those in Staunton Country Park (including The Terrace viewpoint) should show the view during normal conditions when the reservoir is full, plus during mid and maximum drawdown events, with supporting information provided on the likely frequency of different severity of drawdown events, so the visual impact under different operating scenarios can be fully considered in the EIA and by stakeholders.

The additional viewpoints around the reservoir are important as the design of the reservoir has been modified to include an inlet/outlet tower, offshore from the control house structure in the SW. This new proposed structure will accommodate the inlet and outlet pipes from the proposed Southern Water effluent recycling scheme and the tower will be visible from all of these viewpoints. The tower/ adjacent area may also accommodate infrastructure needed to mix the recycled effluent with the spring water in the reservoir.

- **Consideration needs to be given to whether this will be visible when the reservoir is drawn down?**
- **If the offshore tower or any of the reservoir infrastructure is to be lit at night both daytime and nighttime views should be provided and considered in the assessment**. Page 325 confirmed that nighttime lighting is scoped in for construction and operation, but it is not clear which elements of the design this relates to.

**Visibility of inlet/outlet tower and bridge at the reservoir**; There is no recognition in the EIA Scoping text (13.6.6 & 13.6.7) that the proposed effluent recycling scheme will include a tower within the reservoir that the new inlet and outlet pipes will start and end there. This tower did not form part of the original spring fed reservoir design, as the need for a tower was deliberately designed out. The visibility and impact on the landscape of the inlet/ outlet tower and bridge,

including on the historic Grade II listed Park & Garden landscape must be assessed as part of the EIA.

- **The construction and operation impacts at the reservoir site cannot be scoped out as there will be visible infrastructure associated with the proposed effluent recycling project.**

**Change to use of reservoir/ drawdown events**; Section 13.6.7 states that the existence and operation of the Proposed Underground Pipelines and proposed changes at Havant Thicket Reservoir are not likely to change the landscape and visual baseline and are therefore scoped out of further assessment. This is not correct. The change in the operating regime of the reservoir as a result of the effluent recycling scheme will be significant. More water will be supplied to Southern Water utilising the proposed new pipeline to Otterbourne. The frequency, extent and duration of drawdown events will change as a result of implementation of this scheme. The full range of operational scenarios including the worst case need to be considered at the reservoir site & beyond from where it is visible.

- **Operational impacts at the reservoir site cannot be scoped out as there will be a significant change in the operating regime at the site, the changes in drawdown frequency, extent and duration need to be fully considered.**
- **What infrastructure / apparatus will be visible during drawdown?** For example, more of the new offshore inlet/out tower & pipes will be visible and potentially water mixing apparatus.

Consideration also needs to be given to any landscape impacts of algal events causing the creation of mats if these could be more frequent as a result of the effluent recycling proposals. This will be determined by the water quality assessment.

**Old Bedhampton Conservation Area**; The construction of tunnel shafts in and around the Conservation Area and potentially within Bidbury Park will have very significant impacts on this tranquil, highly valued historic area for a long period. The construction and operational impacts need to be very carefully assessed as part of the EIA.

**Assessment scenarios**; The scenarios outlined in Section 13.7.63 are not adequate to assess the visibility and landscape impacts. The scenarios need to include a range of drawdown scenarios at the reservoir, as the operation of the reservoir will change as a result of the proposed effluent recycling scheme and the construction/ operation of the pipeline to transfer water to Otterbourne. The scenarios should also consider the impact that an algal bloom at the reservoir would have on the visual amenity from key viewpoints around the reservoir and at SCP, including the Terrace. This includes the additional viewpoints proposed above.

**The in-combination/ cumulative visual impact** with the original reservoir proposal must be assessed as it is likely that there will be a negative impact from more frequent and extreme drawdown events, as the scheme allows larger volumes of water to be taken from the reservoir, which will not always be offset by the input of recycled water.

**Mitigation of visual impacts;** Section 13.9.2 states that the most effective mitigation for adverse landscape and visual effects is to avoid impacts at source as part of the design process, for example through the siting of infrastructure. However, Southern Water are making no effort at all to minimise the visual impacts.

- The WRP does not need to be located on a hill on the edge of Langstone Harbour, it could be sited elsewhere on flat ground away from the coast where it would not have such a significant visual impact. Alternative sites have not been adequately considered.
- The need for an inlet / outlet tower offshore from the control house was designed out of the original reservoir layout which received planning permission from HBC & EHDC. This was to reduce the visual impact on the historic landscape and sensitive ancient woodland landscape. It was also to reduce the health & safety risks associated with the

need for a bridge from the embankment to the tower. The introduction of a tower to accommodate the effluent recycling inlet and outlet pipes is a retrograde step.

**Recreational visual receptors - Page 328 summary should confirm the assessment will include;**

- Walkers / cyclists on the Hayling Billy Trail
- Visitors to Farlington Marshes Nature Reserve
- Walkers, cyclists and other recreational users at Havant Thicket Reservoir

Figure 17.2 of the EIA Scoping does not show all of the key paths, nor cycle & bridleway routes. The map should be updated to ensure all routes are considered as a part of the assessment.

Figure 16.3 does not show all of the recreation and tourism receptors. Further comments are made in Section O below.

**Above ground pipeline construction;** Appendix 18.1, Section 2.2.56, states that the feasibility of having part of the pipeline from the WRP to Havant Thicket Reservoir above ground is being assessed. However, this is not mentioned in the Landscape & Visual Impact section of the EIA Scoping. Any areas where an above ground pipeline is being considered should be identified and the visual impact and other risks of that variation in design considered. For example, this could also change the pollution risks.

**M. Noise & Vibration**;

**Noise & vibration at the reservoir scoped out**; Section 14.4.29 states that the proposed usage of Havant Thicket Reservoir for the storage of recycled water will not require any construction activities outside the scope of the Proposed Underground Pipeline and its connection with the reservoir, as described above, and will not require any operational plant. Hence, this is not anticipated to result in noise-related effects, and therefore, as discussed in section 14.5 of this chapter, is scoped out of the assessment. This is not correct. An offshore tower has been added to the reservoir design which was not in the original reservoir design which received outline planning consent from HBC & EHDC. The EIA should consider the following.

- The construction of the offshore tower which will incorporate the inlet pipe from the WRP and the outlet pipe to transfer the water to Otterbourne.
- There will also be a need for plant/ infrastructure to ensure that the recycled water is fully mixed with the spring water in the reservoir. The plan for the original reservoir was to build in an aeration system to the reservoir bottom which would only be operated when necessary. The new proposal is that 20ML/d (8 Olympic size swimming pools) of recycled effluent would be pumped to the reservoir 365 days a year, this water will require a mixing system to operate 365 days a year. Any potential impact from the construction and daily operation of the mixing system must be considered as a part of the EIA.
- **Noise and vibration at the reservoir site during operation and construction should not be scoped out of the assessment** (Section 14.4.29 & 14.5.16 refer**)**

**Noise or vibration associated with operation of the pipelines**; Section 14.5.13 states that operational effects due to noise from the Proposed Underground Pipeline have been scoped out of the assessment. The text makes no reference to the use of air valves or wash outs along the pipeline route, or whether operations associated with these structures could generate noise or vibration. There is also no reference to maintenance activities over the 100-year assessment period, such as washing out the pipeline, or carrying out repairs, or whether future works may be needed at the access shaft locations. Further consideration of these aspects should be undertaken before operational impacts are scoped out.

**Noise & vibration impacts on ecology**; It is not clear if any potential impacts on ecological receptors are being considered in the assessment? Impacts on sensitive ecological receptors during construction and operation should be considered. Including noise and vibration associated with construction (eg piling) of the WRP at Broadmarsh alongside the Langstone Harbour SPA, SAC, Ramsar & SSSI.

**Study area for noise from construction should be extended to include all of Old Bedhampton**; This is necessary because the area is likely to be significantly impacted by the following.

- Percussive/ impact noise from piling and shaft construction associated with the WRP and three pipeline shafts at the elevated Broadmarsh site over what will be a very prolonged period (years).
- Significant traffic/ lorry movement down very narrow lanes as the pipeline from the WRP to Havant Thicket Reservoir will require the construction of two large shafts in the vicinity of this very quiet residential area, where there is currently very little traffic, and the only viable access will be through the village.

**N. <u>Resource & Waste Management</u>**

**Study area should include the reservoir site**; In Section 15.4.3 the reservoir site is not listed as a part of the study area. As construction and operational activities will take place at the site it should be included in the study area. Activities include construction of the offshore tower and inlet/ outlet connections, a bridge, plus construction and operation of a robust water mixing system which will need to operate daily.

**Resources to be used at the reservoir site during construction & operation of the additional or altered infrastructure or apparatus need to be included in the assessment.**

**Resources that would be required during operation;** are set out in Section 15.5.11, this includes
maintenance and plant replacement items. The text states that; These materials would be sourced from a national or international supply chain and the quantities that would be required are considered to be negligible in relation to the supply chain capacity. Given that the technology to treat the recycled effluent is new to the UK, the membranes to be used are expensive, and failure to be able to replace a damaged membrane would be critical to the control of the process to ensure water in the reservoir is within specification, this element of the assessment needs to be given greater consideration as part of the EIA. For example, what happens if a membrane is damaged and there is a delay in sourcing new membranes? Given the cost of the membranes it seems unlikely that Southern Water would keep spares in stock.

**Operational resources & wasting resources (including energy)**; Section 15.6.6 states that there are no operational effects that are deemed likely to be significant. Therefore, operational effects are scoped out of the assessment. The resources needed to run the effluent recycling plant 24 hours a day including energy and chemicals will be very significant, especially when you consider that the plant must run every day even when the water is not needed. If you add to that the energy needed to pump 20Ml/d (8 Olympic swimming pools) of recycled water every day from the reservoir more than 40km to Otterbourne, even when the water is not needed, this represents an enormous waste of resources with a huge carbon impact. Additional energy resources will also be needed to mix the water in the reservoir 365 days a year.
The use of the large extra amount of energy required to operate the proposed effluent recycling scheme 365 days a year is likely to put unnecessary pressure on the local energy infrastructure at peak demand. This in turn will drive the National Grid to use less sustainable energy production measures more often with a higher carbon footprint at times of peak demand.

- **Surely the excessive use and waste of energy & chemicals must be taken into consideration as part of the EIA.** Otherwise, this undermines the whole purpose of doing an EIA, especially when there are other lower energy, more sustainable alternatives available.
- **Operational effects should <u>not</u> be scoped out for resource & waste management.**

**Waste from tunnelling and laying pipelines**; Whether construction is by open cut or tunnelling for the various pipelines the activity will result in the generation of large volumes of spoil for disposal. In the case of tunnelling the material excavated would likely be removed in a liquid form to the surface, then site cyclones would be used to dry the material, creating large volumes of a soil type material (with no structure) to be removed from site and disposed of. With suitable

testing it may be possible to find someone prepared to take the material and recycle it. This will be a very significant part of the resource & waste management process for the project, but does not seem to be mentioned in the scoping?

This soil processing activity is also very relevant to other chapters of the EIA as the pumps and cyclones that this process will require will be one of the key sources of noise and potentially vibration at shaft locations (many of which will be in residential areas). It will be one the biggest drivers for lorry movements, and the process also gives rise to the risk of potential unauthorised discharges to water courses that all need to be considered in the EIA.

**Impacts associated with the increased use of plastic bottles**; The Southern Water 2022 survey confirmed that 48% of people who responded to the survey did not support effluent recycling. Many people have said that they do not trust Southern Water with this complex treatment process which is new to the UK. Significant numbers of people have indicated they will no longer drink tap water if the proposal to recycle effluent goes ahead. How will the EIA take into consideration the direct and indirect impacts associated with the rejection of tap water if this scheme goes ahead. These include;

- Manufacture and transport of many thousands of plastic bottles to meet increased demand.
- Waste disposal costs and environmental impacts of disposing of many thousands more plastic bottles.
- The likely increase in litter from inappropriate disposal of plastic drinking water bottles.

**O. <u>Socio-Economic & Tourism Recreation & Health</u>**

**Health impacts associated with people choosing not to drink recycled water** –Section 16.6.13 indicated that diet and other lifestyle choices will be scoped out for construction because the Proposed Development has no scope for influencing diet and other lifestyle choices of the local population. There is no comment on this in Section 16.6.16 relating to operation. **It is important that this issue is scoped in for the assessment of operational effects.** However, this is not currently the case. If a significant number of people do decide to reject tap water for drinking this could have a local and regional impact. As the Portsmouth Water & Southern Water supply area covers the whole of south Hampshire and into Sussex, with customers from across both company's supply area having indicated they will stop drinking tap water if the effluent recycling scheme goes ahead.

**How will this likely rejection of tap water by some people be assessed in the EIA?**

- **There will be economic impacts on the most vulnerable in our society if they reject tap water and have to buy bottled water, including the elderly, disabled and families.**
- **There will be health impacts if people reject tap water and turn to less healthy choices for hydration.**

Note that Southern Water has confirmed that the recycled water mixed in the reservoir may taste different to the water customers are used to receiving at their tap. The risk of customer acceptance associated with the change in taste, or more generally, has not been determined. It is likely that some customers will taste the difference, think about where the water has come from, whether they trust Southern Water and reject tap water for drinking. There has been no proactive customer engagement to assess customer acceptability. In fact, the Southern Water consultation documents (including the summer 2022 consultation specifically on the effluent recycling scheme) failed to make it clear that Portsmouth Water customers would also receive the recycled water via the Farlington WTW.

**Recreational & health impacts during operation** – Reservoir drawdown will be more frequent if the effluent recycling project goes ahead creating a muddy bowl. A drawn down reservoir and wetland with mud (potentially with smelly mud and algae or algal mats) exposed will be a less attractive place to walk & cycle around, as a result visitor numbers may decrease at times of reservoir drawdown. This may have a direct effect on the community benefit of the reservoir including; the number of recreational visits, how long people stay at the site, how far they walk/ cycle and how much money is spent in the visitor centre. This in turn may have indirect effects on

the health benefits compared to the original spring fed reservoir proposal. Section 16.6.14 & 16.6.16 & Table 16-18 suggests such impacts will be scoped out for recreation and health during operation.

- **These adverse recreational & health effects should be considered as part of the EIA, along with the in-combination/ cumulative effect on the original reservoir proposal.**

**Information missing on recreation and tourism receptors;** Figure 16.3 (sheet 1) does not appear to show all of the relevant recreational routes. The Staunton Way and Shipwrights Way on the east boundary of the reservoir site at Rowlands Castle are not shown, nor are other bridleway and cycle routes. Figure 17.2 (sheet 1) does show more routes, but still not all public access routes. The bridleway diversion at the Havant Thicket Reservoir site which will happen in August 2023 is not shown.

**Ensuring benefits are <u>not</u> double counted**; The original spring fed reservoir provides many benefits to the local community in terms of recreational opportunities, health benefits (physical & mental), educational opportunities and tourism benefits. **The proposal for effluent recycling provides <u>no</u> added benefits to the local community in any of these respects, in fact as described above it could actually reduce the value of the benefits to the local communities and individuals**. It is important that the EIA for the effluent recycling scheme does <u>not</u> claim benefits for the project that are already being provided by the original reservoir scheme. There is a concern that such benefits have been inappropriately claimed and double counted in other Southern Water reports to help justify the selection of the scheme.

**Adverse impact of the delay to the reservoir as a direct result of the effluent recycling proposal**; In July 2023 Portsmouth Water announced that there will be a delay to the completion date for the reservoir which it confirmed was as a direct effect of programming changes to incorporate elements of the effluent recycling proposal into the design. For example, a delay while the effluent recycling pipeline is incorporated into the design of the tunnel and planning application for the route from Bedhampton to the reservoir. Plus, the need to make a planning application for the design change to incorporate an offshore inlet/ outlet tower in the design. This delay to the original reservoir project programme will also result in a delay to the delivery of recreational, health, tourism benefits, along with employment opportunities (visitor centre) associated with the reservoir site.

- **How will this disadvantage/ time delay to benefits be taken into consideration in the EIA?**

The proposal to pursue the effluent recycling scheme could also have a significant adverse impact the public and stakeholder reaction to reserved matters applications for the original reservoir scheme, with a subsequent knock-on effect to the delivery programme and delay to benefits being delivered. This potential risk was flagged by Southern Water (Gate 2, Annex 3, pages 258 & 260) and needs to be considered.

**Impacts on future water-based recreation/ education**; The original spring fed reservoir proposal was to be future proofed to allow the opportunity for water-based recreation and education to be developed at a later date if required, so that the opportunity the reservoir could provide was not wasted.

- **The EIA needs to consider if the proposal for effluent recycling could in anyway diminish the future potential for the reservoir to be used for water-based recreation and education.**

This could be as a result of water quality issues, the need for daily input and output of water 365 days a year, increased drawdown activity, more rapid drawdown, or the presence of additional infrastructure (offshore tower) or apparatus (water mixing equipment).

**Employment opportunities**: It is important that the EIA presents a genuine assessment of the employment opportunities available for the operational phase of the project.

- Section 3.6.4 indicated that the WRP will operate 24 hours a day and that it is assumed that approximately 5 operatives would be employed during the day and three during the

night. This seems unlikely and overly optimistic given that on a 2022 tour of the trial recycling plant at Budds Farm WWTW Southern Water indicated that the effluent recycling process was largely automated, and that staff from the nearby Budds Farm WWTW site would be likely to be responsible for looking after the WRP.
- The employment opportunities created at the reservoir should not be included in the assessment as they are created by the original spring fed reservoir proposal with associated staffing of the visitor centre and habitat management requirements. **No** additional opportunities are created at the reservoir site as a result of operation of the effluent recycling scheme.
- Impacts on the loss of employment opportunities from the development already approved at the WRP site should be scoped in during operation (16.6.15 & Table 16-18 suggests it be scoped out).

**Increased health & safety risks associated with new infrastructure**; Section 16.6.11 confirms that the potential for the risk of interaction with operational/maintenance vehicles and plant during the operation stage will be considered. However, what will be considered is not clear. The EIA should include consideration of risks associated with the following.
- The new inlet/outlet offshore tower at the reservoir site – added risks associated with youths trying to access the bridge, or jumping/ diving off it, risk of youths and others trying to swim out to the offshore tower, with additional risk associated with the recycled effluent inlet pipe and outlet pipe to Otterbourne operating 356 days a year.
- Infrastructure associated with the pipelines/ tunnels – shaft access points, air valves, washouts and manholes in areas of public open space and residential areas.

**Increased health & safety risks associated with more frequent drawdown events**; The scheme proposes to deliver much greater volumes of water to Otterbourne in a drought. That means that there will be more rapid and more frequent drawdown events. The risks associated with this need to be considered in the assessment.
- More frequent exposure of wet mud.
- More frequent exposure of infrastructure such as pipes and apparatus associated with the water mixing system.

**P. Traffic & Transport**

**Engagement regarding impacts on walking, cycling & horse-riding routes**; It is not clear in Section 17.3.4 that engagement is taking place with relevant interest groups. This will be especially important in the vicinity of the Havant Thicket Reservoir, Broadmarsh (WRP) and along the pipeline routes through Havant & Bedhampton where there is currently a lot of public access and where works will take place over several years causing significant disruption to public access routes. Interested local stakeholders representing local and national user group organisations can be contacted through the Portsmouth Water reservoir stakeholder group. As the impact will take place over several years causing significant disruption, Southern Water should work with local user groups to identify enhancements that can be provided as part of the reinstatement, or on adjacent sites.

**The Study area should include the Havant Thicket Reservoir Site**, as it will be impacted by infrastructure works, but is not included in Section 17.14.1. Any construction traffic should access the site from the north via the A3(M), B2149 and new northern access road.

**The study area should be extended to include Old Bedhampton and the historic Conservation Area;** Not specifically mentioned as a sensitive receptor, although some local road names are. The impacts of traffic on the very narrow lanes in this area is likely to be significant and very difficult to mitigate, especially given the need to construct more than one tunnel shaft in the area, with the duration of construction likely to span several years. Detailed assessment of the risks and mitigation measures will need to be considered as part of the EIA. Note regarding Engagement; There is an active local group looking after the interests of the Bidbury Mead Recreation Ground and they should be contacted at the earliest opportunity to ensure all of the concerns and impacts are understood and considered in the EIA.

**Q. <u>Water Environment</u>**
**Engagement;** Section 18.3 describes stakeholder organisations that have been contacted and involved in preliminary meetings. Other organisations that it would be useful to include in the engagement process.

- The Langstone Harbour Board do not appear to have been identified and contacted. As a key stakeholder for Langstone Harbour it is important that they are included in the engagement.
- Solent Protection Society.
- Royal Society for Protection of Birds – Langstone Harbour Officer
- Friends of the Hermitage Stream (including for the Water & Wildlife Interest Group)

**Groundwater impacts**; Not mentioned, but there is potential for artesian water to cause flooding, with the risk of both water and silt being brought to the surface. This can be expected to be a problem in the Bedhampton area, but may also be a problem elsewhere. The artesian nature of the aquifer(s) in some areas should have been flagged as important background information on page 474.

The potential for artesian water and associated risks should also have been highlighted in Appendix 18.1, Table 3.3, Conceptual Model for proposed underground pipeline between WRP and Havant Thicket Reservoir. It would also be relevant to include in Table 3.2 and 3.4.

**Study area for assessment of impacts**; Section 18.4.4 stated "This modelling study considered the potential effects the Proposed Development would have on biological oxygen demand (BOD), chemical oxygen demand (COD), suspended solids concentrations (SSC), salinity, iron and total nitrogen for two flow scenarios; 5 mega litres per day (Ml/d) and 15Ml/d. **The model results indicated that effects (albeit very minor ones) could potentially occur within the Solent as far as Southampton Water and within Portsmouth, Langstone and Chichester Harbours.** Whilst the modelled scenarios do not reflect the current proposed peak outputs of up to 60 Ml/d (and will not be directly used to inform the ES), the modelling work enables an indicative study area and likely scale of effects to be defined".

- It is important to recognise that the daily flow has now increased substantially with Southern Water indicating that it will now be 20Ml/d.
- The modelling needs to be updated to take into consideration the higher daily volume and peak volume to ensure that the study area for the EIA and HRA covers all of the coastal areas that could be impacted.
- Defining the correct study area will also be important when determining projects & developments that could have an in-combination or cumulative effect. For example, other effluent recycling schemes on the Isle of Wight, at Littlehampton, as well as coastal protection works.

**Efficiency of the treatment process- how will this be determined?**
What assumptions will be made in the water quality modelling and EIA in relation to operational efficiency/ effectiveness of the water recycling plant?

- What is the reasonable worst case?
- How will that be assessed?
- How is the increased risk of turbidity at Budds Farm WWTW being assessed? Noting that this was flagged by Southern Water as giving rise to issues with final effluent quality (Gate 2, Annex 3, pg 239)
- There needs to be full disclosure of all relevant water quality data to the consultants, not just the provision of summary or average data.
- Consideration also needs to be given as to whether sufficient data has been obtained from the trial recycling plant at Budds Farm WWTW, especially given that it was only in place for a short period of time.

**Water bodies potentially at risk associated with changes to the Eastney Long Sea Outfall discharge;** Water bodies at risk are listed in Table 18-6 on page 472/473. Portsmouth Harbour

and Chichester Harbour are listed but Langstone Harbour is not. Langstone Harbour is at risk as highlighted in the text extracted above in bold and should be added to Table 18-6.

- **Langstone Harbour should be added to the water bodies at risk.**

**Baseline condition for WRP**; It is surprising that the baseline text on page 470/471 for the WRP does not mention the presence of the dilute and disperse landfill site on which the WRP is to be constructed. Development on the landfill presents a significant risk of mobilising contaminants to all of the water bodies described including Hermitage Stream, Langstone Harbour as well as the secondary and primary aquifer below the site. Other pollution risks to the waterbodies are mentioned in the text, but not the risk from the landfill.

- **The risk associated with the dilute & disperse landfill at Broadmarsh must be included.**

**Additional pathways associated with the Broadmarsh uncontained landfill site;** The Preliminary Hydrological Impact Assessment (Appendix 18.1) Section 2.2 does not recognise the fact that the Broadmarsh dilute and disperse landfill is constructed over the original natural route of the Hermitage Stream channel, nor other historic creeks. This is relevant to the background information as they will form preferential pathways from the landfill to the internationally important harbour. The depth and permeability of the material in these channels will be variable and activities associated with construction (piling, shaft excavation etc.) have the potential to reactivate old pathways and open up new ones. Depending on the nature of the materials in the channel/ creeks movement through these channels may be tidally influenced, increasing the risk of these new pathways impacting the harbour.

**Changes to baseline not recognised for Hermitage Stream catchment;** Section 18.5.75 states that the new reservoir has been designed to maintain flows in Riders Lane Stream, and the watercourse will not be directly altered downstream of the new embankment and associated discharge infrastructure. This is not correct. To mitigate and compensate for the loss of the streams present at the reservoir site Portsmouth Water are required to carry out works in a number of reaches downstream to remove the concrete channel and re-naturalise the streams in a scheme to be agreed with the EA. This will be delivered through a Section 106 agreement that has already been signed.

- **The EIA needs to consider the modified baseline which result from the mitigation & compensation works which it is known will take place downstream of the reservoir.**

**Baseline condition for the Havant Thicket Reservoir must be included;** Page 481/482 does not provide any information on the baseline condition of the reservoir as a surface water body filled with water from the Havant & Bedhampton Springs. It is important to identify the baseline as it has planning permission, is under construction and will be impacted by the effluent recycling proposal.

The Havant Thicket Reservoir is not shown as a surface water feature on Figure 18.1 (sheet 1). Nor is the future abstraction from the reservoir shown on Figure 18.5 (sheet 1 & 2). Both these features will be in place before the effluent recycling scheme is implemented and therefore do form part of the background for the scheme and need to be considered in the EIA.

**Water bodies relevant to Havant Thicket Reservoir**; Page 482/483 does not mention the existing water body at Upper Lake which will be lost under the original reservoir which has planning permission.

**Flood risk associated with the Havant Thicket Reservoir;** Page 483 describes the current flood risk at the reservoir site but does not mention the reduced flood risk that will exist once the reservoir is in place. Nor is the requirement for emergency drawdown mentioned or how that will be achieved. This is pertinent as if the effluent recycling scheme proceeds the emergency discharge water will comprise a mix of recycled effluent and spring water, which is a significant change.

Figure 18.8 (sheet 1) does not show the flood extent for emergency drawdown from the reservoir along the Hermitage Stream catchment. This does need to be considered.

**Pollution risks to groundwater**; Section 18.6.8 describes the risk from any activities that disturb the ground, such as excavation, tunnelling or piling, which could mobilise contaminants within soils or groundwater, and potentially adversely affect groundwater quality or locally alter the hydraulic properties of the aquifer, which in turn would impact groundwater-dependent features such as abstraction points. The following significant risks should be highlighted for specific consideration in the EIA.

- The risk to the Havant & Bedhampton Springs which is Portsmouth Water's largest and most important water source.
- The significant risk development of the WRP on a dilute & disperse landfill site at Broadmarsh poses to groundwater, through piling and tunnel/ shaft construction.
- Given the groundwater flow in the aquifer is to the south and springs emerge under Langstone Harbour the additional risk the WRP poses to the harbour SPA/SAC.

**Changes to water quality in the reservoir**; It is not really clear on page 486 that the mix(ratio) of spring water to recycled effluent in the reservoir can vary considerably depending on the operating regime (turnover) at any given period in time. It is unclear what operating scenarios for the effluent recycling plant and reservoir drawdown will be assessed. The full range of operating scenarios need to be modelled and assessed in the EIA as it cannot be assumed that the highest and lowest inputs would create the reasonable worst case scenario, it could be a different combination of inputs and outputs.

- Ranging from no recycled effluent input to the base flow in operation (currently stated to be 20 Ml/d but previously stated to be 5, 7.5 or 15Ml/d), through a range of flows in to the reservoir up to 60Ml/d.
- From the baseline transfer to Otterbourne currently stated to be 20 Ml/d (but previously stated to be 5, 7.5 or 15Ml/d), through a range of flows out of the reservoir up to 90Ml/d.
- The period of operation of the scenario will also be relevant to the impact on habitats and biodiversity, including consideration of the impacts of consecutive year droughts.
- The impact of blending ratios on modelled water quality under different operating scenarios including 1 in 200 & 1 in 500.

There is no information in the assessment methodology on page 489 as to how water quality impacts in the reservoir are to be assessed. Nor is the range of assessment scenarios during operation set out on page 496. When considering water quality impacts in the reservoir, downstream and in the harbour the full range of scenarios (as described above) must be assessed. Section 18.7.46 provides a brief statement to say the modelling will consider a range of water quality parameters and will examine a range of scenarios for the proportion of water from different sources, but there is no detail.

As well as standard parameters such as metals, BOD, COD, pH and ammonia, it is important that the assessment considers;

- Pollutants in sewage such as endocrine disrupters.
- Treatment/ disinfection bi-products such as bromate and phosphates

**Impact of quicker turnover and reduced residence time in the reservoir;** The original spring fed water quality modelling highlighted that due to the long residence time in the reservoir, some compounds (eg. nitrates present in the spring water) would naturally breakdown reducing their potential environmental impact. If residence times in the reservoir are less at any time due to an increased turnover in water under any of the potential operating regimes for the new scheme the impact of reduced residence time needs to be considered.

**Impact of treatment failures on the reservoir & downstream**; SW Gate 2, Annex 3, Page 12, indicated that as the reservoir is an environmental buffer it provides the following benefits.

- Provides time to respond to potential treatment failures.
- Allows additional opportunity for attenuation of microbial and chemical contaminants.

While this may give increased confidence in terms of drinking water quality, as recycled effluent is not supplied direct to the tap, it provides increased environmental risk to the reservoir.

- **How will the pollution risk be assessed in a meaningful and robust way in the EIA?**

Noting that Southern Water have a very poor track record on pollution incidents and undertaking the necessary maintenance to prevent incidents occurring at their treatment facilities. Given that this treatment process is a new technology to the UK and both the local community and many stakeholders have made it clear that the public do not trust Southern Water to undertake the necessary maintenance to stop membranes becoming fouled and replacing them regularly, it is important that the EIA addresses the risks in a transparent and robust way.

**Risk of accumulation in sediments and bioaccumulation**; There does not seem to be any text relating to how the risk of elements or compounds accumulating and bio-accumulating in the reservoir will be assessed? Thought also needs to be given as to whether the introduction of recycled effluent (which will include treatment biproducts) could result in the formation of compounds, coagulate to form particulates, or colloids, that then can settle out on the reservoir bed causing a build-up in contaminants of concern.

- **Specialist advice needs to be provided on what parameters in the final effluent could accumulate in reservoir sediments, or bio-accumulate, so the risks can be properly assessed.**
- If any such risk is identified then potential for re-mobilisation of such sediments and particulates needs to be considered in the assessment (eg. from wind/ wave action, emergency drawdown).

For example, remobilisation and exchange of phosphorus was a key concern that needed to be considered and assessed for the original spring fed reservoir water quality modelling.

**Change in trophic status and risk of dead spots with poor mixing;** There does not seem to be any text relating to how the risk of changes in trophic status and dead spots in the reservoir will be assessed?

**Change in the risk of algal blooms;** There does not seem to be any text relating to how the risk of algal blooms will be assessed. The risk of algal blooms in the reservoir was low under the original spring fed reservoir proposal which was very different to most lowland reservoirs. The risk may be dependent on ensuring there are no dead spots in the reservoir, but it is not clear how this will be modelled and assessed.

- Any change to the risk of toxic blue green algae forming in the reservoir should be considered.

Times of need for such a drinking water drought resource and the resultant drawdown events are most likely to occur in the summer/autumn. This is when larger volumes of recycled effluent may also be used to top up the reservoir. This will coincide with when the risks of adverse impacts such as eutrophication, stratification and algal blooms are most likely to occur. **How will these combined risks be assessed?** The water quality modelling for the original reservoir showed the importance/impact of reservoir drawdown and filling events. The greater volume of water to be abstracted from the reservoir, along with the increased frequency of events, all add to the risks that need to be assessed in the EIA.

**Location and method of mixing recycled effluent with spring water in the reservoir is not specified**; There is no information to indicate where the inlet for the recycled effluent and outlet for the Otterbourne transfer pipeline will be. It is assumed that they will both be incorporated within the newly proposed tower offshore from the reservoir embankment close to the control house where the water will be deep. It is also not clear how the water will be adequately mixed to mitigate water quality issues and other problems such as stratification. Both the recycled effluent inlet pipe and Otterbourne outlet pipe need to operate 365 days a year to keep the sweetening flow through the plant and pipelines (20 ML/d). If both pipes are to be located in the offshore tower, how will the flows be kept separate until adequate mixing has occurred?

- **More information needs to be provided on where the inlet and outlet pipe will be located and how the recycled effluent and spring water will be mixed in the reservoir, so that the construction and operational impacts of this infrastructure can be considered and assessed within the relevant chapters of the EIA for construction and operation.**
- Will drawdown events and lower water levels around the offshore tower impact the methodology or frequency of mixing in any way?
- In addition to the water environment & biodiversity assessment it may also be relevant to the Landscape & Visual Impact Assessment (including visibility of the mixing apparatus during drawdown events), and the increased energy and carbon impact of operating the mixing system every day for the life of the scheme (100 years).

**Impact on the reservoir wetland;** While the wetland is to be held back behind a retaining structure during drawdown events, the reality is that for most of the time the water level in the reservoir will mean that there is hydraulic continuity between the reservoir and the wetland. Recycled effluent will mix with spring water and flow into the wetland.

- How will any potential impact on the wetland be assessed?
- There is more risk of dead spots or incomplete mixing in the wetland, how does this impact the assessment? This needs to be specifically considered in the modelling and assessment.
- How will the change in water quality and frequency/ speed of drawdown events impact the wetland habitats and species?

**Loss of a very unique opportunity to create a chalk spring fed reservoir;** The reservoir was to have been filled with naturally filtered cool chalk spring water. This would have created a fantastic and unique biodiversity opportunity to develop a very special ecosystem, as Portsmouth Water and its consultants could not find another one anywhere.

- How will the loss of this unique and special biodiversity opportunity be assessed in the EIA?

Note: If the proposed mitigation will be to re-mineralise the recycled water so that it will have the same geochemistry as the spring water, the wider impacts of that significant additional treatment need to be adequately considered in other chapters of the EIA. For example, in terms of the resources and energy to be consumed for the additional treatment, which adds further to the unsustainability of the scheme.

**What impact will changes in salinity have on the reservoir, retained wetland and downstream?**
Budds Farm WWTW has a saline intrusion problem. The effluent recycling treatment process will not remove all of the salt. This prevented the EA from allowing the recycled effluent to be discharged into the River Itchen. If it was too risky for the environment to discharge the recycled water into a flowing river, what impact will it have on the reservoir where there is very little flow?

- How will the impact of salinity be assessed in the EIA?
- What receptors need to be considered in the assessment?

**What impact will changes in temperature have on the reservoir, wetland and downstream?**
The final effluent from Budds Farm WWTW has an unnaturally high temperature, as will the recycled effluent from the WRP which is to be discharged into the reservoir.

- How will the impact of warmer water be assessed in the EIA?
- What receptors need to be considered in the assessment?

Note: If the recycled effluent is to be cooled prior to discharge into the reservoir to mitigate the impact, the additional energy and carbon impact of this needs to be considered in other chapters of the EIA.

**Scoping out operational impacts on surface waters & groundwaters is <u>not</u> appropriate**; Section 18.6.24 indicated that this can be scoped out because any routine intrusive maintenance

work will be small scale and localised. For example, associated with limited localised excavation to allow repairs to subsurface infrastructure. The small spatial extent and limited duration of likely future maintenance activities means that significant effects on surface water catchments and underlying groundwaters are considered to be unlikely. This will not always be the case with examples provided below.

- Risks associated with maintenance or repairs that require ground excavation at the dilute and disperse landfill site on which the WRP will be constructed.
- Failure to adequately maintain the treatment process, membranes, monitoring equipment and control systems associated with the WRP could result in unacceptable discharge of pollutants into the reservoir, with risk of ecological impacts, bioaccumulation or accumulation in sediments. The latter could be re-mobilised at a later date by wind or wave action.
- During emergency drawdown testing and full emergency operation.

**This demonstrates that operational impacts on surface waters and groundwater do need to be considered in the EIA.**

It is also worth noting that water quality modelling for the original spring fed reservoir demonstrated that there would be a clear improvement in downstream water quality.

- **The EIA should consider whether the downstream improvement in water quality will be maintained compared to the original spring fed reservoir proposal.**

**Increased sediment supply should not be scoped out during operation**; Section 18.6.25 proposes this and it is not appropriate. Maintenance of the pipeline and flushing to washouts could cause an adverse impact and should be assessed within the EIA. The risk of sediment mobilisation during emergency drawdown also needs to be considered, especially given that the concrete channels lining the Hermitage Stream will largely have been removed by the Portsmouth Water S106 works.

**Modelling impacts of the discharge of reject water from the effluent recycling plant via the LSO**; Section 18.7.11 sets out the parameters to be included in the modelling.

- Will temperature impacts also be modelled?
- Treatment chemicals and cleaning agents will be present in the reject water from the WRP that will be transferred to the LSO for discharge into the Solent. What additional parameters need to be modelled to assess any potential impact from these? (Section 18.7.12 refers). For example; disinfection byproducts such as bromate and phosphates.

**Peer review of modelling to provide confidence in outputs used in the EIA**; There is a lack of public trust in Southern Water to complete the necessary modelling with respect to water quality impacts for the reservoir and long sea outfall. This is fundamental as the modelling outputs will be used in the EIA. How will the modelling methodology, parameters, scenarios and outputs be independently peer reviewed to give confidence that the EIA will be based on meaningful data and identify the reasonable worst-case scenario?

**Coastal waters are a receptor that should be considered**; Section 18.7.13 describes types of receptor to be considered but does not appear to include coastal waters?

**Loss of nitrate benefits to Langstone Harbour;** There will be significant benefit to Langstone Harbour from reduced nitrate loading when spring water elevated in nitrates is diverted to the reservoir under the original spring fed reservoir design, to keep the reservoir topped up at the end of each summer to address seasonal and compensation discharge losses, or to refill the reservoir after a drawdown event(s) through the autumn and winter. Water quality modelling submitted with the original planning application showed a significant reduction in nitrates entering Langstone Harbour, which would be very beneficial in helping to reduce eutrophication and algal blooms in the harbour, an environmental priority for the SPA/SAC. There is a concern that some of this benefit will be lost if effluent recycling goes ahead. This is because less spring water will be needed to top up the reservoir each winter, or after a drought, if the recycled effluent has already been pumped up to the reservoir to maintain the capacity of the reservoir as a drought resource.

- **The potential loss of nitrate benefit to Langstone Harbour needs to be fully assessed in the EIA, with the modelling peer reviewed by the specialist who did the original water quality modelling for the spring fed reservoir.**

**Deterioration in source water at Budds Farm WWTW;** Documents published by Southern Water have confirmed that they expect the water quality at Budds Farm to deteriorate with time. They also indicate that there will be more industrial and commercial waste discharged into the works. This is not mentioned in the scoping and there is no indication as to how this will be assessed.

- **The predicted deterioration in expected source water quality at Budds Farw WWTW should be considered as part of the EIA.**
- **It is essential that there is full disclosure by Southern Water to the consultants undertaking the water quality assessment and EIA about likely future changes at Budds Farm WWTW.**
- **Any infrastructure changes at Budds Farm to address this risk also need to be considered in the EIA.**

Noting that SW Gate 2 Annex 3, page 16, 2.2.1.3 refers to the need for additional source control at Budds Farm STW to manage the discharge of high loads of metal or other contaminants impacting upon treatment if poor quality effluent is transferred to the WRP. The text confirmed that this could pose public health and environmental risks not controlled at the source. This needs to be considered by a water quality & treatment specialist and more information provided by Southern Water so that the specialist can assess the reasonable worst case scenario on the reservoir and downstream.
Southern Water Gate 2 report (Annex 3, page 239, Table 74) highlighted issues with turbidity at Budds Farm WWTW, indicating these will lead to issues with effluent final quality. Further monitoring was indicated to be ongoing, and it was suggested further assets may be required to mitigate the risk.

**Sewer catchment risk assessment;** It is not clear what data from Budds Farm WWTW will be used in the water quality modelling. A risk assessment should be undertaken to identify the contaminants (chemical and biological) that can be present in raw sewage in the sewer catchment and need to be assessed. Not just relying on data for the parameters that are routinely monitored. The assessment should identify the contaminants that have the potential to survive the treatment process and in what concentration. This information should then be used to;

- Ensure that appropriate analysis data has been collected from Budds Farm WWTW to form the baseline. Is there enough data for all of the contaminants of concern?
- Ensure that appropriate analysis data has been collected from the trial effluent recycling plant.

**There is a concern that the trial effluent recycling plant was only in position for a very short period of time and that not enough robust data will have been collected on which to base the assessment. The adequacy of the frequency of contamination testing should also be considered.**

There is also a concern that where effluent recycling is used in drought-stricken countries abroad that international good practice is to identify and proactively reduce the risks in the catchment. Surprisingly Southern Water have indicated they have no intention of following this good practice. As a result, it is even more important that they understand the risks in the sewer catchment and ensure that the proposed treatment plant can address all of the risks all of the time.

**R. <u>In-combination & Cumulative Effects</u>**
The following plans, projects and developments need to be considered in the assessment:

- Aquind Interconnector (coastal and terrestrial)
- Bedhampton – housing & office developments on and around the Portsmouth Water springs
- Budds Farm WWTW – modifications & ongoing storm discharges & pollution incidents to harbour

- Cabbagefield Row, Warren Park – housing development alongside the reservoir site
- Coastal defence works – including any to defend coastal landfills
- Draft & final WRMP's for Portsmouth Water, Southern Water & South East Water including other effluent recycling & desalination projects and their discharges into The Solent (e.g. Isle of Wight and Littlehampton)
- Dredging activities
- Havant Thicket Reservoir (original spring fed reservoir) – including potential loss of benefits, pipeline route construction, emergency drawdown
- Hermitage & Park Lane stream improvements – S106 scheme to naturalise multiple reaches (P. Water)
- Housing/other developments allocated in Local Plans/ granted planning permission including; Amazon Havant, Campdown, Southleigh Park area & Wellbourne (potential cumulative impact on traffic and rare bats)
- Land East of Horndean (multiple areas / phases) – immediately north of the reservoir site

**Accumulation impacts**; Intra-project effects should include the accumulation of elements or compounds of potential concern in the reservoir water, sediments or bioaccumulation and how that could be remobilised to cause an impact (e.g. on water quality or ecology) as a result of a separate process such wind or wave action, maintenance, emergency drawdown. Plus compared to original reservoir proposal.

**S. <u>Topics Scoped Out</u>**

**COMAH sites**; Section 20.2.5 states that no COMAH sites have been identified within 4.5km. This seems to be an arbitrary limit. It would be more appropriate to look at whether these sites are hydrologically linked to waters that maybe impacted by the proposed development. For example, drain to or are adjacent to the coast. As indicated in IEMA Primer (Section 20.2.7) they should only be scoped out if there is no source-pathway-receptor linkage of a hazard that could trigger a major accident and/or disaster or potential for the scheme to lead to a significant environmental effect.

**Shipping & Navigation;** There is a gravel wharf on the coast at Harts Farm Way. The pipeline from Budds Farm WWTW to the WRP will pass below the wharf. Could any activity during construction or maintenance impact upon the wharf, or commercial activities there?

# Annex B

## Letter from Havant Borough Residents Alliance and Others to CEO of Southern Water, dated 29 July 2023

**Chief Executive Officer**,
Southern Water
Head Office
Yeoman Road,
Worthing,
West Sussex
BN13 3NX

Contact: Ann Buckley
Email: buckleyann@yahoo.co.uk

29 July 2023

Dear Mr Gosden

**Concerns re Effluent recycling proposal via Havant Thicket Reservoir**

Residents, community and environmental groups are objecting to Southern Waters (SW) plan for effluent recycling via Havant Thicket Reservoir. We are very concerned about a number of recent statements made regarding the proposal including:

- Misleading information provided in the SW WRMP update email dated 14 June 2023
- Failure to reconsult when WRMP19 preferred options could not be progressed
- Increase in daily volume of water to be treated and pumped to Otterbourne
- Information provided on SW's appalling track record on mains renewal.

We look forward to receiving a comprehensive response to our concerns.

**Misleading information provided in the SW WRMP update email dated 14 June 2023**

We were very disappointed to read in the update that; "the current preferred form of the scheme, recycling from Budds Farm into Havant Thicket Reservoir, was agreed with regulators in May 2022", giving the impression that this option was already approved and a 'done deal', even though the statutory public consultation process had not commenced (5/7/22 option consultation, 14/11/22 draft WRMP24). The truth is that at Gate 2 the environmental regulators and Ofwat all raised significant concerns about the lack of progress on the assessment of environmental impacts for this option, the options appraisal process, lack of information on the alternatives, with Ofwat even challenging issues around value for money. Passing through Gate 2 only confirmed that the option was to be considered further.

Please can you confirm that effluent recycling from Budds Farm via Havant Thicket Reservoir is not approved by the regulators and that the modelling and environmental impact assessments have not yet even been completed to understand the impacts on the reservoir or coastal protected sites. This should be made clear on your website and in future updates to SW/PW customers.

**Failure to reconsult when WRMP19 preferred options could not be progressed**

SWs update email 14/06/23 drew attention to the way in which your WRMP plan had changed since 2019. When the preferred desalination solution at Fawley and the alternative back-up solution of effluent recycling from Budds Farm to the River Itchen were both rejected by the regulators and proved to be undeliverable because they could not be consented, ***why did SW not complete a full review of all of the potential options and reconsult on your plan?***

By not re-consulting on the plan, you deprived stakeholders and the public of the opportunity to put forward and press for more sustainable alternative options and raise concerns about the selected option.

Water Resource Planning Guidance (2023) Section 3.9 indicates that ***if there is a 'material change' of circumstance you must prepare a revised draft plan for re-consultation***. Material changes include "new or significant changes to the measures that were identified in the published plan and are likely to have significant public or environmental interest". Any such material change in circumstances required a consultation exercise in accordance with the procedures set out in Section 37 B & C of the Water Industry Act. Specifically, SW would be required to publish the proposed revisions to its WRMP in a way '*calculated to bring it to the attention of the persons likely to affected by it*.' This should have included Portsmouth Water customers. SW have not done that.

The change in the plan triggered by the failure of the preferred and alternative option represents a 'material change' from the WRMP19 because:

- Both the preferred option in WRMP19 and the selected alternative back-up solution were rejected. The proposal to use the PW reservoir for effluent recycling was <u>not</u> a selected option in the plan. It is a 'new' option fundamentally different to discharging recycled effluent into a free-flowing river, as are the impacts that needed to be considered.
- Portsmouth Water (PW) customers would be significantly impacted by the change to direct recycled effluent to the Havant Thicket Reservoir. Not only because it materially changes PW's original spring fed reservoir proposal (requiring a new planning application and impact assessments), but also because PW customers would receive the recycled drinking water, a completely different source to that which they currently receive. Yet they were never consulted when this material change happened.
- The use of the reservoir as an 'environmental buffer lake' for this option is a material change. We believe that the environmental impact on the reservoir (geochemistry, salinity, temperature etc.) and coastal environment of the SW proposal is significant. Even now, two years on from SW's decision the modelling and environmental impact assessment has <u>not</u> been completed to understand the risks, with direct pathways to the internationally important coast not properly considered in the early assessments. As a result, it is not possible that in 2021 that the impact could have genuinely been assessed as insignificant, a precautionary approach should have been taken, triggering full re-consultation on the options.
- There will also be a significant environmental impact from the proposed siting of the effluent recycling plant at the Broadmarsh dilute and disperse landfill, including on the protected coastal habitats.
- The Fawley community were given many opportunities/years to comment on a number of consultations, including WRMP14 & 19. The community and customers impacted most by the effluent recycling via Havant Thicket Reservoir option have not been given that same opportunity. Even though the Water Industry Act Section 37B states it me publish the plan in way calculated to bring it to the attention of the persons likely to affected by it.
- The SW Gate 2 document flagged the risk of pursuing alternative options that were not in WRMP19, including the risk of appeal causing delays to the SW programme, which in turn will result in unnecessary delays to improved protection for the River Itchen & Test.

As a result, we do not believe that SW has followed the legally required statutory consultation process.

In fact, rather than recognising that PW customers were likely to be affected and making efforts to consult them, SW have actually tried to hide this impact. Any reference to the Havant Thicket Reservoir was redacted from the Gate 1 report published on the SW website. Even the 2022 consultation specifically on the Havant Thicket effluent recycling scheme failed to show in the process diagram, or text, that PW customers would receive the water via the Farlington WTW.

It is certainly not true for SW or PW to claim as they recently have that; information was shared openly and honestly at the time of the original reservoir planning application, or that much information was publicised by SW ahead of the original Planning Committees, with a consultation ending on 16/4/21. Statements like this just add to the mistrust in SW & PW. As active and informed local people we were not aware of any consultation on SW's plans in 2021 until after it was over, as there was no publicity in the PW supply area, nor at the reservoir site, even though both would be directly affected by the plans. In fact, having looked at the SW consultation document since, it was not clear that PW customers would be impacted by any of the effluent recycling options being considered as a back-up, even though they would be.

### Increase in daily volume of water to be treated and pumped to Otterbourne

We are very concerned that SW claim that this is a sustainable solution, when clearly it is not. Effluent recycling has a much higher carbon and energy footprint during construction and operation than more sustainable options such as, moving the Otterbourne abstraction closer to the tidal limit, or winter storage in confined aquifers. However, SW did not assess many of these options as they were 'parked' in their options appraisal for review in 2029 (*a restricted document not made readily available to the public*).

The Budds Farm option is completely unsustainable as it is the furthest sewage works from where the water is needed by SW in the Southampton area. SW told us initially 2 and later 3 Olympic size pools of recycled water would have to be treated and pumped more than 40km 365 days a year to keep the plant and pipelines sweet, even when the water is not needed, as it is supposedly only needed as a drought resource. At a more recent event PW advised that the daily volume could be up to 20Ml/d, which is 8 Olympic size swimming pools to treat & pump every day of the year, even when not needed. The daily energy and carbon use will be enormous, making it completely unsustainable to operate. Flying in the face of the water company commitment to being carbon neutral by 2030.

Despite repeated requests SW have failed to provide information on the energy use and costs associated with the daily operation of the plant and pipelines to keep them sweet.

How can this option be assessed as a 'best value' option if you don't know what it will cost customers to operate on a daily basis, and when those costs will have changed so significantly as the goal posts keep moving in the wrong direction? With costs and impacts incurred daily even when the recycled water is not needed.

### Southern Water's appalling track record on mains renewal

SW have confirmed that the annual rate of mains renewal over the past 5 years has been just 0.1% per annum. Meaning that a water main is unrealistically expected to last for 1000 years before it is replaced, this is totally ridiculous, when a more typical design life for a water main would be 100 to 120 years. In the SW supply area, more than 92 million litres per day of treated water is currently lost to leakage. By 2050 you propose to reduce this by just 50%, which means that you will still be **losing 46 million litres per day**, water which customers have paid to abstract and treat. SW will never get the appalling level of leakage under control unless you dramatically improve your performance on mains replacement, as any future action on leakage will be continually undermined by the ongoing deterioration of water mains. The statistics speak for themselves and demonstrate a clear lack of commitment to addressing leakage.

We demand that SW get their own house in order, stop wasting so much treated water and commit in both WRMP24 and the next 5-year Business Plan currently being developed to consistently deliver a much more challenging target for mains renewal closer to 1%.

SW are currently wasting six times (92 million litres per day) the amount of treated water that is proposed to be generated by the proposed effluent recycling plant in its initial phase (15 million litres per day).

**Conclusion**

We are extremely concerned that SW are pressing ahead with the scheme without appropriate and compliant public consultation, understanding the risks, and without considering more sustainable alternatives. When SW did finally consult in 2022 on this option your own report confirms that:

- 48% of respondents did not support effluent recycling via Havant Thicket Reservoir
- 46% of respondents did not support the SW options appraisal.

This despite the fact that SW made very little attempt to publicise the consultation in the area most impacted. It demonstrates quite clearly that there is not public support for this option. If the consultation had been more widely and appropriately publicised we believe the response against the proposal would have been much greater, especially amongst Portsmouth Water customers, who were largely unaware of the consultation, or that the proposals would impact them directly.

SW should have learnt the lesson of not putting all of its eggs in one basket for Hampshire from when the Fawley desalination option was rejected. Instead, SW should be looking at multiple, smaller, greener, cheaper solutions that work with climate change, not against it. We hope that SW will step back, take the opportunity to work with the regulators, to look genuinely at the alternatives available for an interim short- and medium-term solution, while the impacts and acceptability to customers of effluent recycling are more fully studied. If effluent recycling is to be part of the solution for the future other more sustainable options should be considered, which require shorter pipelines and less daily pumping. For example, not all of the potentially viable options associated with using the Peel Common WWTW have been explored in the SW options appraisal. More options from Peel Common need to be considered, not just option B5 that passed through Gate 2.

For your information I have attached a copy of a letter with concerns and questions sent to PW. We look forward to receiving your response to our questions.

Yours sincerely,

*Ann Buckley*

on behalf of:

Havant Borough Residents Alliance
Havant Civic Society
Havant Climate Alliance
Rowlands Castle Parish Council
Effluent Awareness Group
Friends of the Earth (Havant)
Hayling Sewage Watch