Submission to ACT Government: Queanbeyan Sewage Treatment Plant Upgrade in Jerrabomberra - EIS201900029

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The Conservation Council ACT Region is the peak non-government environment organisation for the Canberra region. Since 1981, we have spoken up for a healthy environment and a sustainable future for our region. We harness the collective energy, expertise and experience of our more than 40 member groups to promote sound policy and action on the environment.

We campaign for a safe climate, to protect biodiversity in our urban and natural areas, to protect and enhance our waterways, reduce waste, and promote sustainable transport and planning for our city. Working in the ACT and region to influence governments and build widespread support within the community and business, we put forward evidence-based solutions and innovative ideas for how we can live sustainably.

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Introduction

The Conservation Council welcomes the opportunity to provide a brief submission on the draft EIS relating to the upgrade of the Queanbeyan Sewage Treatment Plant (STP) near Oaks Estate, ACT at Blocks 27 and 2087 Jerrabomberra.

With current estimates predicting that over 700,000 people from the ACT and Queanbeyan communities could be reliant upon the ACT water supply and its sewage services by 2049[1], ongoing investment in water infrastructure within the ACT Region will be required.

The existing STP at Jerrabomberra is estimated to cater for a population of 34,500, however is already servicing closer to 52,000 residents across the ACT and Queanbeyan communities. The upgrade to the STP at Queanbeyan is well overdue, both due to population increases and to prevent ongoing pollution events downstream in the Molonglo River and Lake Burley Griffin. The existing 1930's plant is predicted to have only three to five years of effective service life remaining. The proposed upgrade to the STP aims to support an equivalent population of 75,000.

Relationship between the proposed STP and Canberra's waterways

Effluent wastewater from Queanbeyan STP is discharged into the Molonglo River and flows downstream into Lake Burley Griffin. Whilst for the most part, properly treated wastewater does not significantly impact water quality, increases in the amount of phosphorus and nitrogen does increase the risk of blue-green algae (cyanobacteria) outbreaks.

Cyanobacteria naturally occur in Canberra's lakes, but proliferate in toxic numbers when nitrogen and phosphorus concentration levels increase above natural thresholds. Lake closures result so as to protect human and animal health. To eliminate this risk, phosphorus and nitrogen levels within effluent wastewater should be minimised via the STP before flowing into downstream waterways, as remediation actions after this point are ineffective.

In previous years, faecal contamination has also forced intermittent closures of Lake Burley Griffin. Directly linked to the Queanbeyan STP, faecal contamination has occurred when the sewage system and associated drains have succumbed during storm and flooding events, causing partly treated sewage to be discharged into the Molonglo River..

Lake Burley Griffin is both an iconic feature of Canberra and a hub for recreational activity. It is essential that the ecological, social and heritage values are protected and water quality is maintained and improved over time. As such, any proposal for an upgrade to the STP must minimise phosphorus and nitrogen concentrations in the effluent wastewater, and ensure that the risk of overflow contamination events is minimised.

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[1] Environment and Planning Directorate, 2014. *ACT Water Strategy 2014-44*, (p.21), ACT Government, Canberra.

Upgraded STP has lower discharge standards

It is unacceptable that the standards set for the proposed "upgraded" STP are of a lesser standard than the existing STP, and the quality of water coming out of the new STP will be considerably worse than the current STP. The proposed STP design will permit a greater load of total nitrogen and total phosphorus to enter the Molonglo River and Lake Burley Griffin.[2]

- The design concentration for Total Nitrogen(TN) discharge is 15mg/L, up from the average of 5-8mg/L for the current plant. Overall load of TN will increase from ~50Kg/d to ~ 258Kg/d under the new plant, operating at 75,000EP.

- The design specification for phosphorus is 0.1mg/L, just slightly poorer in performance than the current plant, with concentrations between 0.06 and 0.09mg/L.

An Expert Panel convened by the ACT Government in 2016 to review the draft water standards in relation to the upgrade to the Queanbeyan STP provided advice to the ACT Government that recommended lower draft design effluent values that included, amongst other standards:

- Total Phosphorus: 0.04mg/L - 50%ile and 0.06mg/L at 90%ile
- Total Nitrogen: 10mg/L at 50%ile and 20mg/L at 90%ile

The Expert Panel included some of the ACT's most prominent water quality professionals and the recommendations of this Panel were communicated to the Queanbeyan-Palerang Regional Council by the ACT Government.

In addition, the current Environmental Authorisation[3] granted by the ACT EPA needs to be updated to reflect higher environmental standards, and to provide assurance that the risk of algal blooms diminishes over time. Under Authorisation 0417 the current STP is permitted to discharge:

- Total Phosphorus: 0.2mg/L - 50%ile and 0.3mg/L at 90%ile
- Total Nitrogen: 30mg/L at 50%ile and 35mg/L at 90%ile

The EPA's Environmental Authorisation should be strengthened to reflect the Expert Panel's recommendations for phosphorus, nitrogen and other discharges and the design concentration for the new STP should also reflect these standards.

Given the ongoing occurrence of algal blooms in Lake Burley Griffin under the current standards, and that the standards for the proposed STP are not substantially higher, there is no evidence to assume that the new STP will lead to a reduction of toxic blue-green algae blooms. This poses both ongoing health and environmental risks.

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[2] https://www.planning.act.gov.au/__data/assets/pdf_file/0011/1689410/T2_Water-Quality-and-Hydrology-Technical-Assessment.pdf at Page 23.

[3] Authorisation Number 0417, https://www.rgoonline.act.gov.au/pubreg/epd/epa/authorisations/0417.pdf

Climate change

Climate change is likely to lead to an increased rate of high water flow events interspersed with long periods of reduced water flow due to drought seasons. The EIS should provide some assessment / modelling of the impacts of changed water flows under future climate scenarios.

Recommendations

1. Strengthen the ACT Environmental Authorisation under which the STP will operate to meet best practice standards.
2. Reject the EIS for the Queanbeyan STP until the design can ensure that the new facility is capable of meeting such standards.
3. Undertake modelling to assess the impacts of changed water flows under future climate scenarios.