NSW GOVERNMENT | Lake Illawarra Authority

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Contact: Garry Clarke
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Infrastructure Projects
NSW Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

25 October 2012

Attention: Belinda Scott

Dear Belinda,

Environmental Assessment for Water and Wastewater Servicing of the West Dapto Urban Release Area and Adjacent Growth Areas 09-0189

The Lake Illawarra Authority (LIA) has reviewed the relevant sections of the Environmental Assessment (EA) for the above project submitted by Sydney Water. The LIA seeks to ensure the long term sustainability of Lake Illawarra by ensuring, as a minimum, no reduction of existing environmental qualities and an improvement to the lake environment where practical.

The LIA holds a strong view that all proposals for urban growth should target "no net increase in pollutants" for wastewater and stormwater impacts on the Lake.

The LIA has concerns with the long term operation of the proposal. The EA does not demonstrate preservation of existing environmental qualities, nor provide adequate commitment to potential mitigation measures.

In overview the LIA's concerns are:

- The Director General's requirements regarding inland water quality have not been adequately addressed.
- The EA seeks approval of infrastructure that will increase the release of nutrients into Lake Illawarra.
- The existing Environmental Protection Licence (EPL) for the wastewater system will permit an increase in nutrient release to Lake Illawarra.
- The EA does not commit to the monitoring of future impacts of wastewater overflow on inland waterways.
- Sensitivity analysis should be undertaken to assess potential impacts on inland water quality.

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Director General's Requirements

The EA addresses the impacts on Lake Illawarra and its sub-catchments under the heading "Inland Water Quality". The DG's requirements included the need to:

a) Assess water quality impacts during the operation of the system.
b) Identify wet weather effluent storage requirements.
c) Identify measures to prevent or minimise sewerage overflows and subsequent impacts on waterbodies.

The intent of the DG's requirements is to assess and minimise impacts, particularly long term operational impacts, on sensitive downstream waterways including Lake Illawarra. The EA provides an assessment of operational water quality impacts at a qualitative level; detailed quantitative modelling has not been undertaken. The EA and the Draft Statement of Commitments do not indicate any need for specific mitigation measures, despite an identified increase in nutrient levels in Lake Illawarra. In the LIA's view, the DG's requirements have not been satisfactorily addressed; the applicant should commit to mitigation measures to avoid nutrient increases, or undertake more detailed studies to quantitatively demonstrate the impact of increased pollutant loads on inland waterways.

Increased Nutrient Loading

The EA identifies increased nutrient loads in Lake Illawarra during the long term operation of the system.TP is predicted to increase 3% above existing levels. TN which is likely to be the limiting nutrient is predicted to increase 4% above existing levels. The EA does not make any commitment to reduce these pollutant loads. The EA does not provide a comprehensive assessment of the long term impacts of increased pollutant loading on Lake Illawarra.

The LIA holds a strong view that it is appropriate to target a "no net increase in nutrients" approach. This is particularly the case given the long term impacts of the proposal and the degree of uncertainty that should be prudently applied to modelling predictions.

The EA correctly indentifies that stormwater runoff is a major contributor to existing pollutant loads in Lake Illawarra. However, this does not in any way justify the proposed increase in pollutant loading from the sewerage system. Preservation of the environmental qualities of Lake Illawarra, dictates that a target of "no net increase" in pollutants be adopted for all elements of the West Dapto Growth area. This should include the proposed wastewater system and the future stormwater management system.

Existing Environment Protection Licence

The LIA notes that the current EPL's for the sewerage system will permit increased release of nutrients and pollutants into Lake Illawarra. This is a cause for great concern. Consequently, commitments in the EA to comply with the current EPL will not necessarily ensure the long term sustainability of the environment of Lake Illawarra.

The Director General should impose a Condition of Consent, or seek a binding formal commitment that Sydney Water will progressively improve the performance of the infrastructure system to further mitigate the proposed increased nutrient loading in Lake Illawarra. This is particularly important since the EA does not demonstrate the long term sustainability of Lake Illawarra's water quality.

Future Monitoring

The EA does not appear to make satisfactory commitments regarding the monitoring of impacts from wastewater overflow. The LIA notes that the applicant's Draft Statement of

Commitments, is silent over the issue of future monitoring. Consequently, any approval of the proposal should be subject to a Condition of Consent requiring future monitoring of wastewater overflow impacts on inland waterways.

As an example in Appendix D, page 110 the EA states (with respect to overflow into Mullet Creek) "This volume of discharge to Mullet Creek and subsequently into Lake Illawarra is unlikely to be sustainable. The potential for eutrophication of Mullet Creek and Lake Illawarra would appear to be high." Clearly, future monitoring of impacts of wastewater overflows is essential to inform the need for future mitigation measures. Similarly, the LIA believes that some existing wastewater overflows are directed to areas of the Lake including Koona Bay and Koonawarra Bay that have little assimilative capacity due to very shallow water depths. These examples further reinforce the need for monitoring of sewerage overflow impacts, particularly given the fact that discharges are projected to increase.

Additional Sensitivity Analysis

Sensitivity analysis is important to test assumptions and increase awareness of potential risks. The LIA recommends that sensitivity analysis should be undertaken on two modelling inputs that potentially effect the wastewater overflow predictions and the water quality predictions; these inputs being assumed rainfall and wet weather infiltration into the wastewater system.

The EA adopts a mean rainfall of 815mm derived from a 10 year data set for Albion Park. The adopted rainfall seems far too low. The LIA understands a data set of approximately 100 years is available for Albion Park. A long term data set that will have higher rainfall and more statistical validity should be modelled as a sensitivity analysis. The EA contends that the adopted rainfall provides a conservative outcome. Nevertheless, a sensitivity analysis will test system performance including sewerage overflow under more valid rainfall assumptions.

The EA indicates that wet weather infiltration into the wastewater system can be a significant contributor to wet weather sewerage overflows. The EA assumes the use of leak tight pipes with low infiltration rates in the order of 1% as a means to minimise wet weather infiltration. It is not clear if leak tight pipes have been assumed for the entire system serving West Dapto or only the components of the system covered by the EA. The LIA notes that the long term performance of leak tight pipes may reduce over time and that the overall wastewater system serving West Dapto may have conventional wastewater pipes. The LIA recommends a sensitivity analysis on the impact of "conventional/non leak tight pipes". This sensitivity run will test system performance including sewerage overflow under a scenario that should be considered prior to the application being determined.

The LIA is concerned that higher rainfall and increased wet weather infiltration may significantly increase sewerage overflow. These scenarios are not improbable and should be objectively tested by sensitivity analysis, prior to the application being determined.

Should you require any further information please contact Mr Garry Clarke on 42759472 or email garry.t.clarke@lands.nsw.gov.au.

Yours faithfully

For: Brian Dooley
Executive Officer