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NEW SOUTH WALES

An Effects-Based Assessment Framework for Storm Water and Wastewater Overflow Management in Lake Macquarie

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Historically storm water and wastewater assets have been managed separately, however the two systems are inherently interconnected. During rain events storm water can enter the wastewater system through both inflow and infiltration resulting in increased flows within the wastewater network. During large events these increased flows can result in overflows back into the storm water system and the receiving environment.

Hunter Water is trialling an effects based assessment (EBA) framework in the Lake Macquarie catchment to manage wet weather overflows from the wastewater network. Internationally and in Australia there is a shift in the management of wet weather overflows from the wastewater network from a containment objective (frequency and volume) to an effects based assessment. The effects based assessment uses a science based approach to assess the risks and impacts posed by storm water and wastewater overflows on the receiving environment.

The Lake Macquarie EBA work commenced in 2015. Hunter Water is working with Lake Macquarie City Council and the Office of Environment & Heritage (OEH) on the project. The risk and impact assessment in Lake Macquarie is being supported by a number of complex models developed by OEH including catchment hydrology, lake hydrodynamics, lake pathogen decay and lake ecological response models. In parallel, Hunter Water has refined its wastewater network models and is developing the decision-making framework that will be used to prioritise and plan system upgrades based on model outputs.

Risks will be assessed in three key areas: ecological, public health and aesthetic impacts. Future upgrade works can then be prioritised to target the most impacted sites to deliver better value solutions for customers and the community.