HUNTER WATER'S RESPONSE TO EPA'S ISSUES PAPER

REVIEW OF THE LOAD-BASED LICENSING SCHEME

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HUNTER WATER

TABLE OF CONTENTS

1 OVERVIEW

This submission provides Hunter Water's comments on the various issues raised by the NSW Environment Protection Authority (EPA) in its Issues Paper on the Load-based Licensing Scheme (LBL).

LBL fees are a relatively insignificant decision-making driver for Hunter Water. However, load limits are a key driver of capital upgrades. The cost of upgrades to prevent load limit breaches is typically multiple orders of magnitude higher than the LBL fees. In addition to this disconnect between fees and abatement costs, Hunter Water highlights the following issues with the current LBL scheme:

- Load limits are often not linked to specific environmental outcomes or based on evidence or scientific analysis of environmental impact.
- Coverage of the LBL scheme is not equitable. For instance a Wastewater Treatment Works (WWTW) may be the only facility in a catchment subject to the LBL scheme but make up only a relatively minor contribution to catchment pollutant loads.
- Factors beyond the control of the licensee such as weather variability can lead to load limit breaches where the underlying trend is well below the limit.

Hunter Water recommends replacing or modifying the LBL scheme such that:

- The licensing of pollutant discharges should be linked to specific environmental outcomes.
- The scheme should be more equitable and fair, including working within a catchment management framework which considers the relative contributions of point and diffuse sources.
- The licensing of pollutant discharges, including the setting of load limits, should be evidence-based.
- The scheme makes allowance for factors beyond the control of the licensee such as the variability in weather.
- Limits may be two-staged such that prosecution is at a second stage limit, with other regulatory intervention options at a first stage limit.

2 CURRENT LBL SCHEME – IMPACT ON HUNTER WATER

Hunter Water pays approximately $200,000 in administration fees and $350,000 in LBL fees per year. LBL fees are not currently incentives to change pollution loads. They are relatively insignificant for Hunter Water and a lower order consideration in planning decisions. In theory they are inclining motivators for change (with a fee rate threshold) but in reality, for Hunter Water, they are not. (Refer Box 4-3 of Issues Paper.)

LBL fees have never made a material impact in any major upgrade decisions at Hunter Water. (Refer Section 3.6 of Issues Paper.)

Although LBL fees are typically insignificant, there is an abrupt threshold (load limit) beyond which prosecution is possible. This is a significant motivator for limiting pollution, and thus capital investment.

Hunter Water places a high priority on mitigating this noncompliance and prosecution risk.

The EPA appears to want limits to be close to actual loads, to act as incentive to improve environmental performance. The presence of breaches is seen as an indicator of effective limits. (Refer Section 4.2.4 of Issues Paper.)

There appears to be a disconnect between the licensee's view of load limit breaches (as a prosecutable offence) and the EPA's view (as evidence of suitably tight load limit targets). (Refer Section 4.2.4 of Issues Paper.)

The EPA's implementation of load limits is not consistent, and not always based on evidence or scientific analysis of environmental impact. As the review states, "there is no current EPA operational policy relating to the setting of such limits". A typical historic approach was to set limits based on historic performance with a nominal allowance for growth. More recently a move to an evidence based approach has been supported at a local level. (Refer Section 4.2.4 of Issues Paper.)

Load limits are a key driver of capital upgrades where the cost to prevent load limit breaches is typically multiple orders of magnitude higher than the LBL fees.

3 ISSUES IDENTIFIED

Hunter Water supports an effective load-based licensing scheme that drives improved environmental outcomes in the most cost efficient manner. Outcomes should be equitable and evidenced based. But at present, costs (direct load based fees, and indirect capital upgrade costs driven by load limits) are not clearly linked to environmental outcomes. (Refer Sections 3.3 & 3.6 of Issues Paper.)

3.1 Load Limits

Historically some load limits were based on previous plant performance. Load limits may not take into account:

- The environmental impact assessment (environmental approval documentation) for the plant
- The design capacity of the plant
- Future population growth
- Variability of weather
- Improvements in the wastewater network (e.g., reduction in wet weather discharges, or backlog sewer programs, bringing more load to treatment plants).

Often the fixed load limit does not have a robust scientific basis linked to environmental cost. Fixed load limits drive abatement where the cost is potentially significantly higher than environmental benefit ('damage cost').

Multi-million dollar capital upgrades of Hunter Water assets in order to avoid breaches may not be the most efficient way to improve environmental outcomes.

3.2 Coverage of LBL Scheme

The limited coverage of the scheme may not be equitable, or lead to improved environmental outcomes. This is because the scheme:

- May not cover the key or the majority of polluters within a catchment, and
- Is unable to address 'cumulative impacts' from diffuse polluters.

For example the Paxton WWTW is a small rural plant that discharges treated effluent to Congewai Creek. The plant discharge contributes around 5% of annual nutrient loads to the waterway but may be the only premise in the catchment covered by the LBL scheme. Costly capital upgrades to improve performance may in fact have negligible environmental outcomes.

3.3 Optimality of Load-based fees

The EPA's Issues Paper (see Box 4-3 of Issues Paper) states that setting 'optimal' load-based fees means that the:

- LBL Fee is high enough to be a sufficient incentive for licensees to put measures in place to reduce pollution (marginal abatement cost)
- Additional cost to the licensee approximates the health and environmental damage costs that would be avoided if that pollutant is not emitted to the environment (marginal environmental benefit).

As such, the current scheme is not optimal as the LBL fees do not incentivise abatement. However, increasing LBL fees to provide incentive to abate would not lead to optimal outcomes, unless these fees approximate environmental benefits.

A consultant report (Acil Allen 2014) commissioned by the EPA shows that for nitrogen and phosphorous, marginal abatement costs (MAC) of many identified strategies to reduce emissions are considerably higher than the marginal environmental costs (MEC) – and thus have costs that outweigh the environmental benefits.

The report indicates that in cases where the MAC of an abatement strategy is greater than the current LBL fee, and less than the environmental benefit from the abatement (MEC), there may be potential to increase LBL fees to incentivise abatement.

However, the report acknowledges that many of the abatement strategies identified may have already been implemented in NSW, and that the environmental conditions and profile of each specific waterway (and thus the MEC) is likely to be substantially different.

In principle, Hunter Water supports incentivising abatement through economic schemes (via LBL fees or load limits), but considers that these schemes must have regard for achieving catchment specific environmental outcomes in an optimal and efficient manner. Hunter Water considers that environmental outcomes can be achieved through more efficient measures as discussed in Section 4 below.

3.4 Hunter Water pricing and cost-recovery

Hunter Water's prices are determined by the Independent Pricing and Regulatory Tribunal (IPART) and set for a four-year period.

In a submission to the EPA's review of Sydney Water's EPL's (May 2015)[1], IPART noted:

- To date, IPART's primary means of addressing negative environmental impacts in price determinations has been to allow for a utility's efficient and prudent costs of complying with environmental regulatory requirements, when determining the total level of its costs (or 'revenue requirement') to be recovered from customers via prices.

[1] IPART, *IPART submission on Environment Protection Authority Review of Sydney Water Corporation's Environment Protection Licences for Sewage Treatment*, 1 May 2015

- In relation to selective regulations that are costly and material, if inefficient regulation is implemented, the price regulator could determine that only a portion of costs be passed through to customers via prices.

This 'efficiency test' may potentially leave Hunter Water without funding if expenditure driven by EPL requirements is deemed by IPART to be inefficient.

There are likely to be more efficient ways to achieve environmental objectives than expensive treatment plant upgrades driven by inflexible or arbitrary load limits placed on a subset of polluters.

Given IPART sets prices for a four year period, there are also potential risks of unfunded expenditure due to misalignment in timing between changes to the LBL scheme and Hunter Water's price path.

3.5 Impacts of weather variability on pollutant loads and compliance

The impact of weather variability and the condition of the receiving environment is not considered in the scheme. During wet weather events waterways are typically degraded due to large volumes of stormwater runoff. These periods typically align with a significant portion of WWTW load discharges due to elevated wet weather inflows to the plant. The LBL scheme does not consider the varying impact of WWTW discharges on differing receiving environment conditions.

Weather variability has a considerable impact on the loads of emitted pollutants. This means Hunter Water WWTWs can have a breach every few years due to extreme wet weather events, or as the plant nears capacity, can breach during a wetter than average year. Ensuring compliance with fixed load limits results in bringing forward large capital upgrades.

Figure 1 shows the impact of wet weather on total nitrogen loads at Hunter Water's Farley WWTW. For the two years that the load limit has been exceeded, wet weather was a major contributing factor. The events were the April 2015 super storm and the January 2016 east coast low. If the impact of these two wet weather events is removed, it is most likely that the load limit for total nitrogen would not have been exceeded for either year.

Load limits are intended to control long term cumulative impacts, so an isolated exceedance due to extreme weather (or other events outside the control of the licensee), where the long term trend remains below the load limit, should not be viewed in the same way as if the long term trend exceeded the annual load limit.

The impact of wet and dry years makes recycling schemes difficult to implement and ensure compliance with load limits over the long term. In wet years pollutant loads discharged from WWTWs are typically higher but demand for recycled effluent for irrigation is lower. Large effluent storages are required to buffer between wet and dry years to provide a reliable water supply and ensure compliance with fixed load limits. This can have a significant impact on the cost of some reuse schemes.

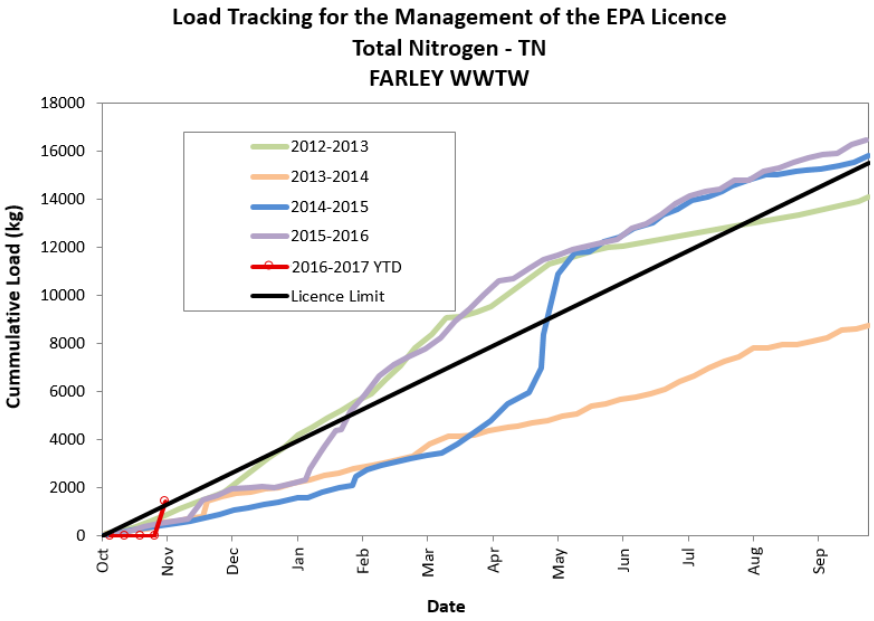

Figure 1: Impact of weather variability on pollutant loads discharged from one of Hunter Water's WWTW

4 PROPOSED IMPROVED/ALTERNATIVE STRUCTURE OF LBL SCHEME

4.1 Introduction

Hunter Water proposes the LBL scheme be replaced or modified with a focus on improving environmental outcomes in a more equitable and cost efficient manner.

Changes to EPL conditions and the LBL scheme should have regard to the broader regulatory environment, including IPART's requirement that Hunter Water expenditure be prudent and efficient. In the case of misalignment of changes with Hunter Water's price path, transitional arrangements should be considered.

General improvement principles for improvements to the LBL scheme are listed below, together with three options for changing the structure of the scheme, if it is kept at all. Hunter Water recommends further investigation of Options A & C (below).

4.2 Fair and equitable application

An effective and efficient LBL scheme would provide investment certainty for licensees. Investment certainty is maximised when the facility is allowed to be competently operated at full design capacity and in line with the relevant environmental impact assessments and planning consents without risk of prosecution.

Ideally this would require taking a catchment level approach to pollution reduction, in contrast to the limited coverage of the current LBL scheme which covers a subset of polluters. For example the Effects Based Assessment approach to Wet Weather Overflow Abatement in wastewater networks aims to understand and prioritise environmental improvement works considering all waterway inputs such as wastewater and stormwater.

Regulatory requirements and schemes intended to provide economic incentives to reduce emissions should be based on robust scientific evidence and be designed to facilitate the most efficient means for improving environmental outcomes.

4.3 Evidence-based approaches to setting limits (including offset schemes)

Effects-based assessments should be used to develop a scientifically robust understanding of specific catchments in terms of current health, resilience and the impact of specific pollutants. Hunter Water has successfully adopted this approach in recent projects such as the Burwood Marine Environment Assessment Program and is working with the EPA on current projects such as the Lake Macquarie Effects Based Licensing Study and the Hunter River Estuary Model.

Such work should be used to inform the choice of pollution abatement strategies and expenditure decisions in order to achieve environmental outcomes in the most efficient manner. This would be beneficial for providing a scientific basis for setting load limits and/or LBL fees for specific pollutants and various catchments to better reflect environmental impacts.

Nutrient offset schemes (e.g., the Paxton Catchment Improvement Program) and emissions trading (e.g. the Hunter River Salinity Trading Scheme) are market-based and evidence-based mechanisms that can improve environmental outcomes in a more efficient way. More work to develop the framework for nutrient offset schemes would be welcomed.

4.4 Two-staged load limit proposal (Option A)

As WWTW plant loads increase with population toward the annual load limit, the risk of prosecution is argued to be an undesirably abrupt transition from otherwise normal operation. Hunter Water suggests an alternative approach with an initial limit beyond which the licensee is required by regulation to invest in one of the following:

- An effects based assessment, or joint study to scientifically set load limits
- A nutrient offset program or emissions trading scheme
- A PRP for capital upgrade (or staged PRPs, preferably).

A second, prosecutable limit would provide a maximum allowable cap for emissions at some point (for example, approximately 1.5 times the initial limit). The regulatory action limit and the prosecutable limit can be changed, as at present, and/or by joint location-specific scientific studies to set load limits (as above).

This modified scheme could be made available on an ‘opt-in’ basis. This would allow licensees to remain on the current LBL structure for premises where the current scheme is effective, such as at facilities with evidence based limits.

To cover any additional EPA cost of administering this proposed LBL scheme, LBL fees could be increased. This would only be desirable if this staged load limit licence option was opt-in, as increased fees for an undesired change would not be welcomed by licensees.

See Figure 2 below for a graphical representation of how such a two-staged load limit scheme could work.

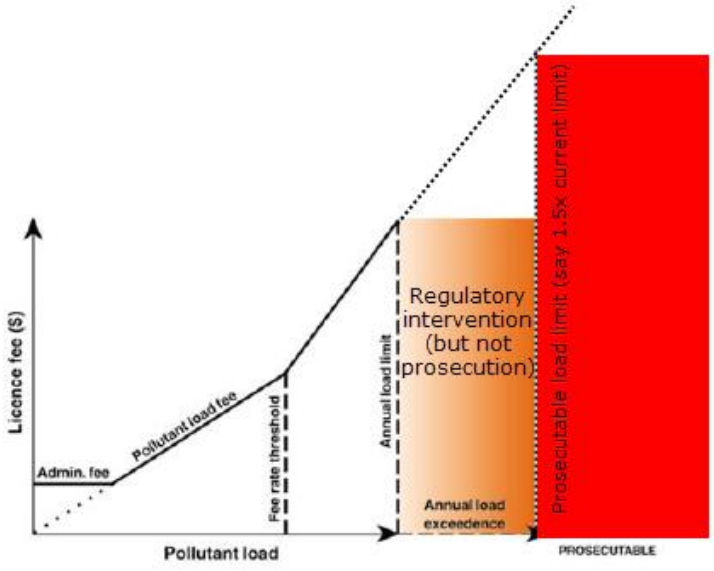

Figure 2: Proposed adaptation to LBL load limit regulatory response (Option A)

4.5 Radical alternative option (Option B)

An alternative approach is to use the current limit as a threshold beyond which the fee escalates significantly to the point of incentivising abatement, rather than being prosecutable. In this approach increased fees would be made available to the licensee for the options of:

- upgrading the plant
- implementing a nutrient offset program, or
- undertaking a scientific study to determine an evidence-based load limit.

This licensing option presents risks from a budgeting & cost regulation perspective, and may be considered untenable for a price regulated State Owned Corporation. It is not considered the most efficient way to achieve environmental outcomes, but still has features that are attractive compared to the current LBL scheme.

4.6 Variable limits, or calculation methods, for wet and dry weather (Option C)

Hunter Water also proposes that changes to load limits (or load calculations) be considered that take into account wet weather and seasonal variation. There are several approaches to achieve this, which would need further detailed investigation, including (see Section 4.2.4 of Issues Paper):

- Load limits could be set high enough so that natural variation that is outside the licensee's control does not cause a breach.
- Load limits may be based on a rolling 5 year limit (tighter) and a single year limit (more relaxed).
- There could be different limits for wet weather and dry weather limits.
- There could be a daily limit (the approach adopted by the US EPA).
- There could be three different annual limits (for drought, normal or wet years) to account for weather variability.
- There could potentially be no limits if flows are higher than a determined quantity beyond which there is deemed to be minimal environmental harm. Or extreme wet weather data could be excluded on a statistical basis.

HUNTER WATER