

3 May 2022

NSW Government  
Department of Planning and Environment

To Whom it May Concern

**RE: Submission on the DPE Consultation draft of the regulatory framework for local water utilities.**

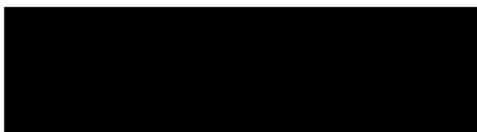
I refer to the request of 31 March 2022 calling for consultation with the NSW water industry on the Consultation Draft: Regulatory framework for local water utilities.

Hunter H2O is a specialist water industry consulting firm that supports water suppliers throughout Australia with a large focus on regional Australia. We believe that by working together we create solutions that improve lives and support sustainable and healthy communities.

As such, we are pleased to submit our attached Submission on the DPE Consultation draft of the regulatory framework for local water utilities.

Please do not hesitate to contact me should you require any additional information to support this important work.

Kind regards



Michael Carter  
Principal Engineer



## About our contributors



**Paul Thompson**

RPEQ, CPEng,  
FIEAust

Executive Director

Paul manages one of the leading consulting groups of water/wastewater process engineers in the Australian water industry, providing process consulting services throughout Australia, New Zealand and the South Pacific.

Paul's team includes 36 Process Engineers based in offices in Newcastle, Brisbane and Adelaide. As a Principal Chemical Engineer with over 24 years' experience, he is highly skilled in water and wastewater treatment process design and operations.



**Bruce Atkinson**

RPEQ, CPEng

Senior Principal  
Consultant

Bruce has 38 years' experience as a Process Engineer, with 25 years' experience in the Australian water and wastewater industry. He is an invaluable member of the consultancy team as a result of his broad skill set and experience in direct management of interdisciplinary teams.

Bruce is actively involved in managing water treatment assessment projects for various clients, including desalination and environmental water discharge planning and treatment.

As a Chartered Professional Engineer and a Fellow of Engineers Australia, Bruce has dealt with trade waste treatment and water recycling systems for his entire 25 years of water experience, with his experience ranging from turn-key solutions provider to independent consultant. He has been involved in numerous on-site pilot testing programs as well as compiling concept and preliminary designs for processes that involve a wide range of technologies from physico-chemical treatment (clarification and DAF) through to biological treatment including moving bed bioreactors (MBBR) and desalination systems. Bruce is currently working on the largest industrial water reuse system to be built in Australia and has extensive experience in salinity management.



**Mark Dawson**

CPEng

Principal Engineer

Mark is a Principal Engineer based in Newcastle with over 20 years of experience in the Australian water industry. He is a highly skilled process engineer with mechanical and controls engineering experience and has led a range of projects covering all stages of project delivery from strategic review, options assessment, conceptual and detailed design, contract preparation, tendering and assessment, construction support, commissioning and subsequent operations and operations support.

Mark is certified by Engineers Australia in the practice of chemical engineering, environmental engineering, leadership and management, and project management.

His experience includes:

- Involved in all stages of project delivery from strategic review, options assessment, conceptual and detailed design, contract preparation, tendering and assessment, construction support, commissioning and subsequent operations and operations support.
- Skilled in process design and development of control systems for water and wastewater treatment facilities including mass balances, process

design, equipment specification, preparation of process and instrumentation diagrams, optimising plant and process layouts for constructability and operability, facilitating HAZOP studies, and the development of control philosophies and alarm strategies.

- Project and design management of water treatment and wastewater treatment plant upgrades
- Led Hunter H2O's team on the Award winning Parkes WTP/ STP project (Engineers Australia Engineering Excellence Award, 2019).



**Michael Carter**  
RPEQ, CEng  
Principal Process  
Engineer

Michael is a chartered chemical engineer with over 12 years of water industry experience who thrives on challenging the status quo. As a highly motivated and performance driven process engineer, Michael has a proven track record of providing customised solutions for clients.

Michael originated from a small regional NSW community and commenced his water career working with larger water utilities. In recent years Michael has discovered a vast disparity between water supplied in metro and regional areas. Michael has since developed a passion for working together in partnership with regional councils to improve treatment plant performance and water safety for the benefit of local communities by providing technical advice and operational support.

Michael has developed a wide range of operational and troubleshooting skills through extensive pilot plant and desktop jar testing, executing more than five pilot plant studies and over 27 jar testing and desktop level investigations, involving clarification, filtration, dissolved air floatation, organics removal, manganese oxidation, chlorine demand, disinfection by-product formation (and formation potential) and soluble metals removal. Michael established, commissioned and operated the Dungog WTP DAF Filtration pilot plant for over 12 months in NSW and the Huia WTP DAF Ozone/BAC pilot plant for over five months in New Zealand.

Michael has also gained extensive experience having successfully completed options assessments, feasibility investigations, concept and detailed designs for a variety of projects for clients across Australia and New Zealand. For these projects he applied his knowledge and experience in developing and undertaking mass and solids balances, process unit sizing, general site arrangements, process design, P&ID development and drafting, plant control philosophy's and functional descriptions, HACCP and HAZOP studies, risk based cost estimating, technical specifications, tender documents, construction technical support and commissioning.

## About Hunter H2O

Hunter H2O is a specialist water and wastewater services company. We operate throughout Australia supporting water authorities, local government and industries as well as servicing major clients in New Zealand, Papua New Guinea and Fiji and undertaking regular assignments throughout the Asia Pacific region and North America.

Our people work alongside regional and metropolitan water authorities, government departments, private sector companies and international water and wastewater agencies on all components of the water industry.

Unique in Australia, Hunter H2O draws on decades of frontline experience in management, process and operations, engineering planning, design and delivery, SCADA, telemetry and electrical engineering and maintenance to deliver highly practical, proven solutions to any water challenge. Our broad operational background is backed by our highly experienced specialist consultants.

When you talk to Hunter H2O we connect you with the people most experienced and skilled to meet your individual project needs. Our clients benefit from our in-depth knowledge and long term thinking that only comes with an active, integral role in supporting the water industry.

To: NSW Government  
Department of Planning and  
Environment

From: Michael Carter, Bruce Atkinson,  
Mark Dawson and Paul Thompson  
of Hunter H2O

Date: 3/05/2022

---

Subject: Hunter H2O Submission on the DPE Consultation draft of the regulatory framework for local water utilities.

---

## 1 Introduction

Hunter H2O's vision is to work together with our clients to realise our purpose:

*Together we create the right water solutions to improve lives and support sustainable and health communities.*

Hunter H2O works in partnership with many regional Australian water suppliers and with a rich operational heritage gained through operation of Hunter Water's 18 water and wastewater treatment plants for over 18 years, we have a unique practical perspective to offer councils. Hunter H2O loves working in partnership to upskill operators and council engineers, and improving systems to realise the most out of existing or new infrastructure.

With a strong focus on improving lives and supporting sustainable and health communities, one key focus for Hunter H2O is creating the right water solutions to improve water safety, wastewater services and the reliability of these services. A key barrier to achieving these outcomes appears to be the regulatory process that has been used for many years in regional NSW. Hence Hunter H2O are keen to contribute to a new and refreshed regulatory framework and approach that shall aim to partner with local water utilities and support them rather than dictate and direct what they do.

## 2 Responses to other than Key Questions

### 2.1 Foreword

There are many barriers to effective local planning and delivery of reliable and safe water supplies, wastewater services and water reuse schemes to regional communities. In terms of drinking water quality, broadly speaking, there is a vast inequality between the reliability and safety of drinking water in regional communities compared to Australian cities. This is not due to a lack of regional communities' commitment to delivery of safe and secure water, however, mainly appears to be attributed to the fact that drinking water catchments can vary significantly and do not discriminate by the socioeconomic status of their users. Essentially regional local water utilities (LWUs) need to address the same or more complex water safety risks compared to those challenges experienced by metropolitan water utilities albeit with far fewer resources and funding. These same challenges apply to provision of wastewater treatment and reuse schemes.

Currently in the NSW context the existing system in place appears to be driven primarily by 'lowest capital cost' where 'fit for purpose' solutions are encouraged for LWUs to adopt which are limited by that which the community can afford or be funded by periodic infrastructure programs. Due to the small populations of some service areas which are impacted by the same challenges, these 'fit for purpose' solutions are often not achieving the required outcomes sought by the relevant guidelines, such as the Australian Drinking Water Guidelines in terms of implementing a multi barrier approach to water safety or the Australian Guidelines for Water Recycling for wastewater reuse applications. Indeed often the lowest capital cost solution imparts an ongoing and larger operational cost burden that LWUs have to maintain. This is resulting in a vast disparity between the reliability, robustness and ultimately the water safety or environmental performance between regional and metropolitan areas.

Therefore there needs to be acknowledgement that the economics of delivering water, wastewater and reuse services by local water utilities in regional areas are vastly different to those for metropolitan water authorities, with each case being specific. For example:

- The capital cost of delivering infrastructure to regional areas is higher.
- The ongoing cost of supplying specialist support to regional areas is higher.
- The ongoing cost of supplying consumables to regional areas is higher.
- Unit amortisation costs (\$/kL) are substantially higher due to smaller-scale operations.
- The rate of staff turnover is generally much greater in regional areas which increases the complexity of maintaining ongoing operations and efficient project delivery.

In the example of the supply of potable water, water treatment and supply are not equivalent to road services or any other service that local councils are responsible for. Where parks and gardens, road and bridges and waste services are similar across regional council boundaries and regions, water supply is inherently a complex site-specific endeavour due to the varied water sources used and the complexity of treatment requirements to make the water safe to drink. In addition, the risk is applied to the whole community, whereas a dangerous road may only impact those who use it, and the user has the ability to course-correct and reduce their risk. When water supply is concerned the risk is most often invisible and the supply of safe water is taken for granted, therefore the potential consequence vast outweighs any other service regional councils provide to the community. It is therefore vital that adequate systems are in place and dedicated appropriately trained resources are used to ensure water safety for a community. The same applies to wastewater services and reuse schemes where the complexity is decided by the specific inputs from each community which can vary significantly especially when certain industries can account for a significant portion and characterisation of the sewage received by the treatment plants. Hence adding additional complexity compared to larger metropolitan counterparts.

In essence a significant amount of ongoing support, both financial and more importantly non-financial support, is required to bolster the capability and business sustainability of delivering safe, reliable and robust water, wastewater and reuse services by local water utilities in regional areas.

## 2.2 Section 3.2 - Strategic planning outcomes

Understanding water security and understanding water quality needs to expressly recognise the added issue of salinity. Consider the following minor modification:

S3 p17 second dot point. replace “water quality” with “water quality and salinity impacts”

## 2.3 Section 5 - Assessing and approving proposed works

The department should consider how they shall ensure there is a clear and transparent separation of the regulatory and advisory roles. This has in the past been unclear and often projects have been found to be delayed for many years due to advice being taken or perceived as a direction from a regulator rather than advice. Completely separate teams within the department with separate roles (regulation team and advisory only team) may aid in ensuring that there is no confusion in this area while also freeing up resources to reduce review and approval times.

## 2.4 Section 5.2 - Section 60 approvals will follow a clear, documented, and timely process

‘Stop the clock’ – following the completion of a few successful submissions from councils that have also involved other stakeholders who requested additional information, it would be efficient if a list of common additional information request examples are provided to LWU’s so that they can incorporate those prior learnings where appropriate to reduce the risk of ‘stopping the clock’ and holding up the process.

## 2.5 Section 5.4 - Information to be submitted with an application

There is not a lot of clarity around what the department wants to see in terms of cost estimates. What does 'costed' mean in Table 4?

In Table 4 move the last point early design for works to the first point.

We consider that it is premature to ask for single line diagrams at this early stage of a design. Hence, we recommend removal of "Single Line Diagrams" and just ask for some consideration of the maximum power demand for the site. The maximum power demand for a site (if relevant and applicable) is important to check as it can result in a time and cost impact if upgrades are required.

## 2.6 Section 7.1 Concurrence for approvals to discharge liquid trade waste

In the context of regional water utilities, the concept of "full cost recovery" will frequently not be feasible, especially where advanced water treatment is required to facilitate industrial development, regional development and decentralisation. The limited economies of scale for small regional communities can often prevent "full cost recovery" being achieved or result in the cost becoming unfavourable to the local community that can often expect similar service standards of larger metropolitan centres.

## 3 Responses to Key Questions

Hunter H2O have only provided responses to those key questions where we feel that as a consultant and on behalf of our long-term clients, we feel it is suitable to respond.

### 3.1 Section 3 – Strategic planning oversight:

#### 3.1.1 Question 1

#### **Q1. Do the identified strategic planning outcomes address the key risks?**

*The draft regulatory framework proposes 12 strategic planning outcomes that utilities are expected to achieve to a reasonable standard*

- *Do the identified outcomes address the key risks? Why? Why not?*
- *Are these outcomes sufficiently specific and clear? Why? Why not?*

S3.2 p19 fourth dot point (4<sup>th</sup> of 12 outcomes) "Understanding environmental impacts": add extra element:

"- How will the local water utility manage salinity, whether that affects reuse (soil quality impacts via irrigation) or recycling schemes (brine residual), or treated effluent discharge/disposal?"

In a general sense the required outcomes within the draft are not detailed to allow LWU to determine how to undertake their own strategic planning without further guidance documentation created. The approach to publicly identify LWUs which may not be able to meet the loosely defined outcomes could be viewed as punitive and may disadvantage those that do not have the resources to undertake the required detailed assessments. How is DPE going to support LWU to meet the requirements for strategic planning? A truly supportive relationship would see DPE significantly resources to assist LWUs to achieve the desired outcomes through regular and frequent communications during the strategy planning process.

### 3.1.2 Question 5

#### Q5. What tools should the department use for compliance?

*Publishing the result of assessments is the main compliance tool available to the department. In addition, the department will write to general managers, councils, or boards about the result.*

- *Should the department make available in its public register the assessment results for individual outcome areas?*
- *Are there other compliance tools or strategies the department should consider for those local water utilities who do not have a strategic planning assessed to a reasonable standard?*

It is important that the department does not create a “name and shame” culture by the use of the public register. It may be advantageous to firstly allow review and recommendations made by the department on the draft submissions to be considered by the LWU and allow the LWU to respond and update the submission prior to public notification. There is a risk the public could misinterpret assessment results that could negatively impact on the LWU. For example if raw review comments and recommendations made by the department in regards to a LWUs submission were interpreted by the community in a way that makes the LWU appear incompetent, this could negatively impact the communities perception of the LWU. When it may be the case that the LWU has invested a significant amount of time, resources and effort in the submission and they just need a bit more support to align the submission to the departments specified outcomes and viewpoints.

### 3.1.3 Question 6

#### Q6. What are the priority areas for additional guidance for strategic planning, that should be delivered by the department as early as possible?

*In addition to the regulatory framework, the department intends to produce clear, concise, and accessible guidance providing more detail about the department’s regulatory requirements (within the boundaries of its regulatory objectives and principles – for example outcomes-focussed, and risk-based), as well as ‘how to’ guidance, templates, case studies and tools that help local water utilities to understand and meet expectations.*

A burning issue for regional NSW is salinity management. Inland operations do not have the option of ocean discharge. “How to’ guidance needs to be provided urgently to:

1. Deal with brine and resultant salt from desalination processes. (“Disposal to a licensed landfill” is not a preferred solution and can often not be a feasible option).
2. Identify sources of salt in municipal effluent (including liquid trade waste) and identify best practice (upstream) options to minimise salt entry to effluent streams.

### 3.1.4 Question 7

#### Q7. What requirements or guidance do local water utilities need for the ‘understanding water security’ outcome?

*Local water utilities’ strategic planning for water security contributes to the water security of their region and the state. The department will work in partnership with local water utilities to support integration of state, regional and local water utility strategic planning. We know the local water utility sector is looking for leadership from the department and to access our resources (including models and data).*



---

Water security (supply of fresh environmental water) is only one part of the equation. Integrated Water Cycle Management inherently also requires management of salinity for inland areas.

## 3.1.5 Question 9

---

### **Q9. How should the department transition utilities that have or are preparing an 'IWCM strategy' under the existing regulatory framework?**

*The department is interested in hearing from local water utilities that have or are preparing an IWCM strategy about how to transition to the new regulatory framework for strategic planning. Where a utility has a valid 'concurrence' from the department on its IWCM strategy, we consider it would automatically be assessed as achieving strategic planning outcomes to a reasonable standard.*

- *Do you agree with this position?*
- *How should the department transition local water utilities that are currently developing an IWCM strategy under the existing framework?*
- *How should the department identify and deal with local water utilities who need more time to strategic planning in place?*

*The department will also need to consider the resourcing impacts for the transition period.*

---

The department should consider being flexible and allowing the LWU to choose whether to continue with the old IWCM framework and checklist process or adopt a new strategic planning process if they deem necessary.

## 3.2 Section 5 – The department assesses and approves proposed works

### 3.2.1 Question 11

---

### **Q11. Is it appropriate to assess the proposed works at an early design phase for approval?**

*The department proposes to encourage (but not require) local water utilities to submit materials for approval at an early stage of project development.*

- *Is this an appropriate point for proposed works to be assessed for approval? Why? Why not?*
  - *What other points in time would be appropriate?*
- 

Assessment at an early stage is imperative to avoid wasted detailed design and project development costs.

Subsequent review should only be triggered if the conditions of the initial Approval cannot, or have not, been complied with.

A formalised approach needs to be created for “Phase 1 - Initial engagement prior to making a submission” which is expected to occur at the critically important options study/options assessment stage of a project. It is important for a LWU to be confident in the preferred option chosen by the LWU and that it will be supported and approved by the department before outlaying hundreds of thousands

of dollars completing a concept design or progressing the design to the level required for the Section 60 approval. LWUs ultimately are responsible for the operation and maintenance of water and wastewater infrastructure, and therefore should have a voice that is supported by the department in choosing the LWU's preferred technology or option. The department should be focusing on overall outcomes rather than design specifics. This approach should be formalised through templates provided that summarise the options assessment key information pertinent for the department to know to provide confidence that the outcomes will be achieved and to expedite the review. The endorsement or letter of support to the LWU should also be used as a template to expedite the process.

### 3.2.2 Question 12

#### **Q12. What are the priority areas for additional guidance for section 60 assessment and approval, that should be delivered by the department as early as possible?**

*In addition to the regulatory framework, the department intends to produce clear, concise, and accessible guidance providing more detail about the its regulatory requirements (within the boundaries of its regulatory objectives and principles, for example, outcomes-focussed, and risk-based), as well as 'how to' guidance, templates, case studies and tools that help local water utilities understand and meet expectations.*

The department should establish clear guidelines for management of brine and salt, especially that resulting from desalination processes.

Our current experience is that DPE defers to the EPA, and the EPA advises that any resultant salt is to be "collected and taken offsite to a licensed disposal facility.", which is unhelpful, since no such disposal avenue is available.

The Regulatory Framework needs to pro-actively provide options that may include:

1. Initial practical advice to promote upstream minimisation of salts in wastewater streams discharging to sewer;
2. Permanent or semi-permanent salt accumulation (safe storage/encapsulation);
3. Beneficial reuse options (advice regarding extraction options for valuable components);
4. Pipeline or truck transfer guidelines for transfer to coastal centres with ocean outfall facilities.

### 3.2.3 Question 13

#### **Q13. Are the proposed standard conditions for section 60 appropriate?**

*The department proposes to apply standard conditions to all approvals.*

- *Are the proposed standard conditions appropriate? Why? Why Not?*
- *What other standard conditions could or should be set?*
- *How should the department monitor standard conditions?*

The proposed standard conditions appear appropriate with the exception of clarifying the first standard condition "Consistency with design." Consistency with design that is broadly consistent with those approved may limit innovation through a typical design and construct procurement approach, where the procurement approach is designed to allow for innovative solution to be proposed by the open market. We suggest changing this standard condition to one that seeks to ensure there is "Consistency with the design concept." Hence there would be much less focus on individual process units or treatment processes used other than ensuring that the proposed treatment process would be capable of achieving the agreed outcomes and treatment targets. The assessment really needs to be outcomes focused and there to be extremely limited assessment of the detail in the design for the

regulatory role and approval. The separate function of the department providing advisory services can be sought for this detailed review. It could be that a condition is that LWUs considered in most need have a condition that a review is undertaken by the department's advisory role. However adoption of review comments or recommendations must not be mandatory for approval to be given. This approach is considered a much more 'outcomes focused' and supportive approach rather than dictating requirements as has occurred in the past.

## 3.3 Section 6 – Inspecting water and sewerage works

### 3.3.1 Question 14

#### **Q14. How should the department communicate the result of inspections, including any improvement actions, with individual local water utilities?**

*The department is seeking feedback to design the most effective and appropriate way to communicate the result of inspections. The department's existing approach is to communicate the result of inspections to council's General Manager. Usually, the local water utility manager and/or engineer is also included in the communication.*

- *Should the department change this approach? Why? Why not?*

A written letter or report to the general manager, LWU water manager and lead operator should be followed up with a meeting if there are any key matters to discuss. This is a good opportunity to ensure that the voice and concerns of the operator concerning issues at the treatment plants are heard by upper levels management and supported by the department.

### 3.3.2 Question 16

#### **Q16. Should the department publish information about the results of inspections?**

*The department does not currently publish information about the results of inspections.*

- *Should the department change this approach? Why? Why not?*

Water and wastewater terminology and concepts are quite complex and therefore if results are to be published online for public consumption there should be a consideration of how this may be viewed. Avoidance of a 'name and shame' process is a must. Any publication of information should be undertaken in a constructive manner that supports a LWUs people and systems. The department needs to be careful to ensure it strikes a healthy balance between raising awareness in Councils around key identified issues with the likely resultant increased pressure that would then be applied to LWUs engineers and operates who are already often stretched and overworked.

## 3.4 Section 8 – Performance monitoring and reporting

### 3.4.1 Question 20

#### **Q20. What performance outputs would be most useful for local water utilities and other stakeholders?**

*The department proposes to analyse the data it collects and, where appropriate, provide the outputs of that analysis to local water utilities.*

- *What outputs would be appropriate to produce and release? What would be most valuable?*

- *Would it be valuable for the department to provide a 'one-stop-shop' for local water utility performance information? Would there be any costs to this approach?*
- *At what frequency should outputs be updated? For example, would a small set of indicators (e.g. 8 to 15 key indicators) collected on a more frequent basis (monthly or quarterly) be useful for local water utilities or other stakeholders?*

---

Reagent consumption values (mg/L) to assist wider-scale benchmarking.

## 3.5 Section 9 – Review of departmental decisions:

### 3.5.1 Question 21

---

#### **Q21. Is the internal review approach appropriate?**

*The department proposes to conduct all reviews of decisions (other than formal administrative reviews) in-house and using department staff (including internal technical experts).*

- *Is this appropriate? Why? Why not?*
- *In what circumstances might external technical input be required?*

---

Initial internal review may be reasonable as long as the internal staff are adequately able to provide sound reasons for their decisions and there is an internal peer review process, so the views of individuals are cross checked by the department. However where the department rejects a particular technical approach by a proponent, and the proponent disagrees, review by an agreed independent ('arm's length') Expert would be appropriate rather than having to instigate judicial review.