

Promoting a national approach to water operations training materials

October 2022





Acknowledgement of Country

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

Published by NSW Department of Planning and Environment

dpie.nsw.gov.au

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First published: October 2022

Department reference number: PUB22/853

Acknowledgements

Thalassa Consulting is acknowledged for its recent project on a national approach to water operations training materials, which has informed this paper.

The Town Water Risk Reduction Program's Water Industry Skills and Training Focus Group is also acknowledged for its input.

Front cover photograph

Supplied by Goldenfields Water County Council

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Barriers to training supply

There is a critical shortage of formally trained water operators in NSW. Water operators are those staff in water utilities who operate, maintain and construct water supply and sewerage assets to ensure the safe and efficient provision of water and wastewater services to the community. Water operator roles include water treatment, sewage treatment and network management.

The shortage of formally trained water operators has several causes, which together result in a poorly functioning water operations industry training market (see Table 1). The limited supply of water operations training in NSW is largely the result of low participation by registered training organisations (RTOs). There are only 2 accredited RTOs offering water operations industry training in NSW. Moreover, these RTOs only offer a limited number of units of competency and qualifications in a limited number of training locations.

Table 1: Causes of the poorly functioning water operations industry training market in NSW and resulting shortage of formally trained water operators.

Causes of low DEMAND for water operator training	Causes of low SUPPLY of water operator training
<ul style="list-style-type: none"> The lack of any requirement for water operators to complete essential training or hold qualifications 	<ul style="list-style-type: none"> Few RTOs offering water operations industry training
<ul style="list-style-type: none"> Low uptake of the accredited water operations industry training that is available 	<ul style="list-style-type: none"> Shortage of accredited trainers, and lack of a pathway for existing trainers to maintain training and technical skills
<ul style="list-style-type: none"> Difficulty attracting new staff to local water utilities, and retaining existing staff 	

A major impediment to RTOs entering the training market or expanding their training offerings is the cost of entry, particularly the high cost of developing teaching, learning and assessment materials aligned with the National Water Training Package. Due to the relatively small size of the NSW water operator workforce (about 2,500 individuals) and its unpredictable demand for training, RTOs have been reluctant to invest in developing and maintaining these materials.

A [recent analysis](#) of the NSW water operations workforce and its access to training estimated it costs between \$20,000 and \$30,000 on average to develop these resources per unit of competency. An RTO would therefore need to spend up to \$1.2 million to develop teaching, learning and assessment materials for the estimated 40 units of competency required to meet the needs of NSW local water utilities or up to \$5 million to develop materials for all 160 units of the National Water Training Package. These levels of investment are not financially viable for RTOs.

NSW Department of Planning and Environment, in partnership with Training Services NSW and the training and local water utility sectors, is implementing a water industry skills and training action

plan. The action plan aims to establish a sustainable water operations training market in the state. A key proposal in the action plan is to reduce cost barriers to RTO participation in the market by helping the training sector develop a common, high-quality set of training resources.

A national approach to training materials

National challenge, national approach

NSW is not alone in its shortage of formally trained water operators and constrained supply of water operator training. Water utility workforce, skills and training deficits exist nationally. This was underscored recently in a national industry engagement process the department commissioned from Thalassa Consulting. Thalassa found that in each of the other Australian states, there is only one RTO delivering water operations industry training, and in most cases only limited units of competency and qualifications are on offer. The cost of developing and maintaining training materials consistent with the National Water Training Package was confirmed as a major obstacle to broader training offerings across these jurisdictions.

This shared challenge supports a case for a nationally coordinated approach to the development of water operations training resources. The industry stakeholders engaged by Thalassa (see 'Appendix A – Scope of industry engagement') universally advocated for national collaboration to develop a set of teaching, learning and assessment materials that could be made available to RTOs across Australia. They cited the need for a national approach to the pooling of training resources compliant with the National Water Training Package in order to overcome cost barriers. Stakeholders also saw a national approach as an opportunity to ensure the quality, consistency and currency of training materials in use across the country.

The Productivity Commission's Inquiry Report [National Water Reform 2020](#) also identified collaboration in the water utility and training sectors as key to overcoming scale challenges and maintaining a skilled workforce. The report further noted that, given the importance of water service provision to community wellbeing, governments have a responsibility to facilitate collaboration and ensure appropriate systems are in place to maintain workforce capability.

The department's water industry skills and training action plan recognises the potential for a national approach to the development of water operations training materials. A national approach would not only help meet the needs of water utilities and operators in individual jurisdictions but also contribute to job and skill development and employment mobility across regional Australia.

Elements of a national approach

A key outcome of Thalassa's industry research and engagement process was a proposal for an industry-supported business model for nationally coordinated water operations training materials. This model features an independent, industry-led governance structure, which would be self-funded following an initial phase of government and industry seed funding (see 'Box 1' and 'Appendix B – Industry model for national approach to water operations training materials'). The industry model is

a specific option for a national approach that warrants further consideration as part of a broader interjurisdictional discussion.

At a higher level, the proposed industry-supported business model highlights several essential elements of a sustainable national approach to the development, maintenance and distribution of water operations training materials. These include:

- clear alignment with the National Water Training Package
- governance arrangements that:
 - are transparent, resilient and responsive to changing national contexts and needs
 - directly involve the water utility and training sectors, governments and regulators, and education specialists
 - establish clear accountabilities and mechanisms for the development, ownership, maintenance and augmentation of teaching, learning and assessment materials
 - include a scheme for equitable RTO access to the training materials (e.g., purchase, subscription, levy, fee-for-service)
- financial sustainability
- arrangements to recognise the training materials already developed by RTOs while they remain relevant.

These elements should be included in further discussion of a national approach. They offer a starting point for the development of any additional detailed options or models.

Box 1: Proposed industry-supported business model for nationally coordinated water operations training materials

The industry stakeholders engaged by Thalassa Consulting emphasised the importance of an approach independent of government, based on collaborative industry leadership, with sustainable self-funding arrangements.

The model developed is based on the essential elements described above but includes preferences for the detailed design of those elements. In particular, the model includes:

- industry-led governance through a multi-stakeholder advisory committee (including government and education representatives) and a smaller executive subcommittee
- functions for the executive subcommittee relating to teaching, learning and assessment materials and industry training advocacy, strategy, policy and risk management
- the engagement of independent experts to develop and update training materials
- self-funding arrangements achieved through revenue raising (from the provision of training materials) and industry cost sharing, preceded by 3 to 5 years of government and industry seed funding.

Appendix B provides a schematic of the industry-supported model.

Next steps: a national conversation

There is a case and industry support for a national approach to water operations training materials to overcome barriers to training supply. The department is interested in initiating a wider national conversation on coordinated development of shared teaching, learning and assessment resources.

We will be approaching other states and territories for their support to progress this work and to jointly approach the Australian Government about its potential role. There may be avenues for national coordination through a possible renewal of the National Water Initiative. There may also be opportunities for national collaboration through the new industry clusters being established as part of the Australia Government's Vocational Education and Training system reforms.

The department, on behalf of the NSW water and training sectors, will propose an initial focus on the rationale and aims of a national approach to water operations training materials, design principles and options. We will initiate these discussions before the end of 2022.

Appendix A – Scope of industry engagement

Thalassa engaged with the following organisations:

- Australian Water Association
- Beca HunterH2O
- Fusion Training
- Griffith University (Queensland)
- Local Government NSW
- Murray Thompson Training
- NSW Department of Education – Training Services NSW
- NSW Public Sector Industry Training Advisory Body
- NSW Utilities and Electrotechnology Industry Training Advisory Body
- NSW Water Directorate
- qldwater (Queensland Water Directorate)
- Riverina Water County Council
- Sydney Water Corporation
- TAFE NSW
- TAFE SA (South Australia)
- Tamworth Community College
- TRILITY
- Tweed Shire Council
- VicWater (Victoria)
- Water Corporation (Western Australia)
- Water Industry Operators Association
- Water Services Association of Australia

Appendix B – Industry model for national approach to water operations training materials

See Figure 1 on the following page.

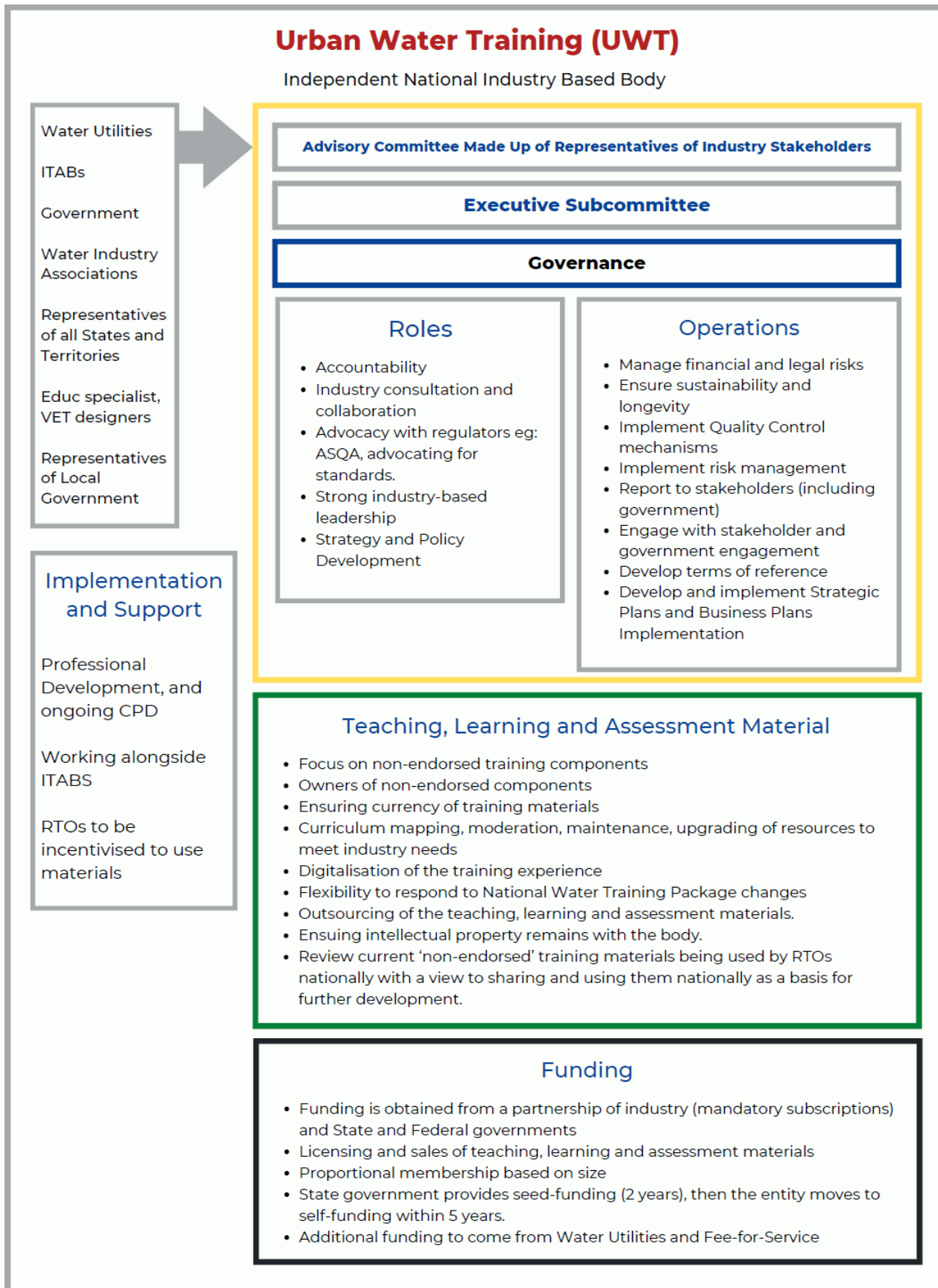


Figure 1. Thalassa Consulting’s schematic of the industry-supported business model for a national approach to training materials that emerged from its industry engagement process. (Acronym notes: ITABS = industry training advisory bodies; VET = vocational education and training; ASQA = Australian Skills Quality Authority; CPD = continuing professional development)