

31.03.2025

To: Waihanga Ara Rau – **Attention** - Stewart Brougham

Re- Submissions on proposal for Backflow Micro Credential

The below feedback is provided by the Association of Hydraulic Services Consultants Australia – New Zealand Branch (AHSCA-NZ)

Hydraulic services consulting is a specialised discipline concerned with the flow and conveyance of, water, sewer, stormwater and gas services.

Hydraulic Services, and the design of these services, help maintain a minimum level of public health standards throughout the developed world, and it helps prevent the spread of disease.

Just like builders need architectural plans to construct a building, Plumbers, Drainlayers and Gasfitters need a set of hydraulic drawings to ensure liquids safely go where they need to.

The World Health Organisation (WHO) has produced a document, Health Aspects of Plumbing, which “examines the microbiological, chemical, physical and financial risks associated with plumbing”. If minimum standards are not followed, there can be dramatic effects on worldwide health. The WHO estimates that approximately 3.1 million people die per year because they do not have access to safe drinking water and sanitary systems.

Hydraulic Services in New Zealand is the design and documentation of plumbing, drainage and gas services including, but not limited to:

Sanitary/Sewer plumbing and drainage.

Onsite wastewater treatment including grey water and black water treatment systems.

Trade waste.

Pumpstations, sewer and stormwater.

Backflow prevention.

Stormwater systems, including downpipes (excludes water proofing).

Syphonic rainwater systems.

Stormwater treatment systems.

Rainwater and stormwater reuse.

Potable Hot, cold, and warm water supply.

Hot water generation plant.

Non -potable water supplies.

Natural gas and liquefied petroleum gas (LPG) supply.

Laboratory Gases (not all Hydraulic consultants cover this).

Medical gases (not all Hydraulic consultants cover this).

Fire protection (not all Hydraulic consultants cover this).

Expert Witness services (not all Hydraulic consultants provide this)

Peer reviews and Site Observations

The New Zealand Association is made up of members based in different parts of New Zealand, almost all the members have come from a plumbing, drainlaying and/or gasfitting background where they have eventually moved away from day-to-day hands on work and into Hydraulic Consulting, Design and backflow prevention, some of whom have also been testers on the tools, therefore have a wide and varied range of skills, knowledge and experience to be able to comment on the proposed micro credential for Backflow prevention.

Members have provided feedback; this has been summarised as below.

The level of credits is not weighted according to the complexity

Previously, US 23848 and US 23847 were Level 3 with 4 credits each, the proposed Units moved up a level from Level 3 to 4, however the credit totals remain the same.

If we look at the knowledge and skills a student must show to achieve a qualification **or credential**, we can see a difference in what is required from L3 to L4, it becomes more complex with a greater knowledge base requirement.

This table shows the knowledge and skills students must show to achieve a qualification or credential.

3	4
Knowledge Some operational and theoretical knowledge in a field of work or study Skills Select and apply from a range of known solutions to familiar problems Apply a range of standard processes relevant to the field of work or study Application Limited supervision Requiring major responsibility for own learning and performance Adapting own behaviour when interacting with others Contributing to group performance	Knowledge Broad operational and theoretical knowledge in a field of work or study Skills Select and apply solutions to familiar and sometimes unfamiliar problems Select and apply a range of standard and non-standard processes relevant to the field of work or study Application Self-management of learning and performance under broad guidance Some responsibility for performance of others

Sourced From:

<https://www2.nzqa.govt.nz/qualifications-and-standards/about-new-zealand-qualifications-credentials-framework/level-descriptors-nzqcf/>

The increased complexity of the Level 4-unit standards without a doubt requires a deeper understanding of not just backflow prevention, the installation, testing of the devices but the fundamental science behind hydraulic principles and also not forgetting compliance requirements, which can become complex depending which acts you are working under.

We have specifically mentioned Hydraulic principles given one of the PC's in 30598 states underpinning concepts and principles must be explained. To explain that competently then the candidate will need to be familiar with hydraulic principles and calculations and the course material will be required to cover this off as a core component of the training.

2.3	Explain the application of underpinning concepts and principles to the installation, testing, and maintenance of water supply backflow prevention devices.
Range	includes but is not limited to – back pressure, back siphonage, differential pressure, testing equipment, test procedures, fault identification and possible means of rectification, reporting results of water supply backflow prevention device testing.

So, to reflect the increase in level and complexity, we believe the credit values should be raised to match the additional learning and competency required.

We believe the unit standards should be 10 – 12 credits each.

Missing Pre-Requisites

Both proposed unit standards appear to be open to anyone, yet it appears maintenance is covered off in these units, maintenance can also mean removing and replacing a device, this is deemed sanitary plumbing if working under the jurisdiction of the Plumbers Gasfitters and Drainlayers Act 2006.

These units, on the face of it, appear to promote unauthorized work, this is ultimately public health at stake.

Consistency across all Providers

We have concerns about the final delivery and assessment of the tester's courses based on the proposed Unit Standards.

Given these are Unit Standards to be achieved, the primary focus from the overseeing moderators will be just on the assessments, provided they can tick box each of the PC's then it'll be a tick and flick situation and everyone is happy, doesn't matter if 1 x provider did it over 6 days and the other 1 day, as long as those assessment moderation tick boxes are done, all is good in the world.

These Unit standards are no doubt designed to raise the bar given it is public health, however raising the level has not raised the credit values, they remain the same as the previous L3 versions, so what changes in the delivery and assessments?

If we take 80 hours of learning time, some providers simply embed 'self-directed learning' into the programme syllabus to tick most of that requirement off, many of our Hydraulic consultants witnessed this seen when they slashed the apprenticeship system from 18 weeks down to 10.

Ultimately, we are concerned about consistency of delivery and assessment, a formal short course programme document stating the requirements would be a good start from Waihanga Ara Rau.

That will help keep the playing field level, why would you pay for a decent 4-day course when the shed down the road can smash it out in 2 days.

In closing The Association can see the benefits of trying to implement this new micro credential, however any identified or perceived risks to public health need to be broken down further to ensure a robust decision-making process has been evidenced.

We must always remember that Backflow prevention ultimately involves the entire plumbing system, not just individual devices in isolation, IQPs need a whole system understanding in backflow training to assess risks accurately and ensure compliance, this includes the fire industry.

Training and assessment needs to be at the right level and a consistent approach to delivery country wide.

Ultimately the Association firmly believes the health and safety of the public should always be the driver for all public health related training and assessment, not cost or box ticking.

Plumbing is public health, backflow forms part of that, get it wrong and it can lead to potentially poor sanitary conditions leading to disease and sickness in respect to Plumbing systems.

The Association will watch with interest to see how this micro credential progresses.

31.03.2025

Regards



Nick Fleckney
President AHSCANZ



Website: [Home - AHSCA](#)