

# WATER SERVICES INDUSTRY

### **SKILLS FRAMEWORK FOR WATER SERVICES INDUSTRY**

DISCUSSION DOCUMENT | 2025

© Waihanga Ara Rau 2025

### CONTENTS

1. Introduction	3
2. Skills framework	4
3. Skill blocks	8
A. HEALTH AND SAFETY	8
B. LEGISLATION, REGULATIONS, AND COMPLIANCE	11
C. STEWARDSHIP AND ENVIRONMENTAL SUSTAINABILITY	4
D. MATHS AND SCIENCES	6
E. SAMPLING AND TESTING	8
F. WASTEWATER TREATMENT	0
G. DRINKING WATER TREATMENT	4
H. SYSTEM DESIGN	8
I. MAINTENANCE AND OPTIMISATION	9
J. TRADE WASTE MONITORING AND COMPLIANCE	31
K. PEOPLE SKILLS	4
4. Future Qualification Structure (to be tested)	5
5. Existng Qualifications and Standards (under review)	6



### **1. INTRODUCTION**

We are currently reviewing the water services qualifications and standards to ensure they reflect industry's needs moving forward.

#### STAGE 1 INVESTIGATIVE PHASE (COMPLETED OCTOBER 2024)

Stage 1 was an opportunity for the sector and providers to share their views on the current suite of qualifications and standards, as well as the broader development needs across the water services sector.

Several recommendations emerged from this phase, including the need to hold 'discovery workshops' to help develop a comprehensive forward-thinking skills framework for the industry. Read the full Stage 1 report <u>here.</u>

#### DISCOVERY WORKSHOPS (COMPLETED MARCH 2025)

Two discovery workshops were held in late 2024, and early 2025, focussing on the following sub-sectors:

#### 1. DRINKING WATER

#### 2. WASTEWATER AND TRADE WASTE

The workshops provided an initial opportunity to wānanga skill interest areas, kanohi ki te kanohi (face to face). We would like to acknowledge and thank all workshop attendees for their valuable insights and contributions in support of this project.

#### SKILLS FRAMEWORK FOR WATER SERVICES INDUSTRY - DISCUSSION DOCUMENT

Drawing on sights from both Stage 1 and the discovery workshops, we are pleased to share a discussion paper outlining a proposed **skills framework** (the Framework) for the water services sector.

The Framework presents early thinking around which skills should be recognised and how.

It offers a high-level description of skills identified by industry across the **drinking water**, **wastewater**, and **trade waste**\_sub-sectors. Work to define required skills for **stormwater** and **water network reticulation** will follow in future stages.

The Framework identifies skills that are both specific to, and shared across, the sub-sectors. We refer to these as "**skill progression blocks**" – each block contains relevant learning and assessment information that supports understanding and recognition of skill.

Working alongside subject matter experts, we will further develop these blocks into **skill standards**, which can then be grouped to form new or updated qualification/s and/or micro-credentials. This will support clear pathways into and through the water services sector. Each block or a group of blocks may contribute to one or more skill standards.

This document is intended to serve as a foundation for further discussion with subject matter experts, operators, training providers, the Water Industry Operations Group, WaterNZ, and the Water Services Authority | Taumata Arowai.

#### WE INVITE YOUR FEEDBACK

We welcome feedback from tangata whai mana (stakeholders) to help shape the continued development of this Framework.

### **2. SKILLS FRAMEWORK**

The Framework (see Table 1 overleaf) identifies a range of skill categories (A-K), each comprising a series of 'skill blocks. Often these skill blocks reflect increasing levels of responsibility and capability.

For example, in the **Health and Safety** category (Skill Category A), progression starts with core skills like "following instructions to work safely in a water services environment" and advances to more complex abilities such as "evaluating processes to improve safety."

The right-hand column in Table 1 provides a quick reference showing which skill blocks apply to each water services sub-sector.

Further detail is provided in section 3. **SKILL BLOCKS (A PROPOSAL)**, where each skill progression block includes a defined **learning outcome** along with examples of **indicative learning**. This format provides context, supports understanding of each skill, and illustrates how the skills can be recognised and assessed in practice.

Definitions	
Definitions	
Skill	The ability to apply knowledge effectively to achieve proficiency in performance.
Skill Block	Skill blocks are skills and learning that will be used as building blocks to develop a qualification and/or micro-credential.
Skill progression	Skill Progressions use the Skill Blocks to establish a development pathway for a learner. The skills have been sequenced to show
	skill/knowledge development pathway.
Learning outcome	The learning outcomes describe the skills that ākonga will gain.
Assessment information	The assessment information includes the elements that will form assessment of the skills.
Indicative learning	Indicative learning refers to the skills and knowledge that informs the learning for a skill.
	Where a skill block is applicable to multiple water services industries, indicative learning may include information for each
	industry. Actual learning and assessment will reflect only the relevant learning environment.



#### Table 1: Water Services Skills Framework – Draft proposal

SKILL CATEGORY	SKILL PROGRESSION BLOCKS	Drinking water	Wastewater (WW)	Trade Waste
		(DW)		(TW)
	1. Follow instructions to work safely in a water services environment	$\checkmark$	$\checkmark$	$\checkmark$
	2. Contribute to a healthy and safe water services environment	$\checkmark$	$\checkmark$	
	3. Apply hygiene requirements in water operations	$\checkmark$	$\checkmark$	
A. HEALTH AND	4. Prepare essential components of a Water Safety Plan	$\checkmark$		
SAFETY	5. Apply the Water Safety Plan to supply	$\checkmark$		
	6. Manage the use of hazardous substances in water operations	$\checkmark$	$\checkmark$	
	7. Manage risk in water services operations	$\checkmark$	$\checkmark$	$\checkmark$
	8. Evaluate processes to improve safety	$\checkmark$	$\checkmark$	$\checkmark$
	1. Identify legislation and regulations relevant to water services	$\checkmark$	$\checkmark$	$\checkmark$
	2. Identify legislation and regulations relevant to trade waste			$\checkmark$
	3. Apply legislative and standard requirements to water operations	$\checkmark$	$\checkmark$	
B. LEGISLATIONS,	4. Manage compliance for water services	$\checkmark$	$\checkmark$	
COMPLIANCE	5. Identify chain of custody requirements	$\checkmark$	$\checkmark$	$\checkmark$
	6. Identify consent/permit conditions and compliance	$\checkmark$	$\checkmark$	$\checkmark$
	7. Enforce trade waste permits			$\checkmark$
	8. Issue compliance notices			$\checkmark$
C. KAITIAKITANGA	1. Describe kaitiakitanga in the management and care of water	$\checkmark$	$\checkmark$	$\checkmark$
AND	2. Protect water and environment in water services	$\checkmark$	$\checkmark$	$\checkmark$
ENVIRONMENTAL	3. Lead the development of sustainable practices in water system design to protect	$\checkmark$	$\checkmark$	
SUSTAINABILITY	water sources			
	1. Apply calculations	$\checkmark$	$\checkmark$	$\checkmark$
D. MATHS AND	2. Apply mathematical principles	$\checkmark$	$\checkmark$	$\checkmark$
SCIENCE	3. Apply physics	$\checkmark$	$\checkmark$	$\checkmark$
	4. Apply microbiological and contaminant science to water	$\checkmark$	$\checkmark$	$\checkmark$

SKILL CATEGORY	SKILL PROGRESSION BLOCKS	Drinking water (DW)	Wastewater (WW)	Trade Waste (TW)
	5. Apply chemistry to water supply	$\checkmark$		$\checkmark$
	6. Apply chemistry to wastewater		$\checkmark$	$\checkmark$
	Not in OG framework: Material science			
	1. Knowledge of sampling	$\checkmark$	$\checkmark$	$\checkmark$
	2. Carry out sampling and testing	$\checkmark$	$\checkmark$	$\checkmark$
	3. Compliance sampling and testing for trade waste			$\checkmark$
TESTINO	4. Implement sampling programme for water supply	$\checkmark$		
	5. Evaluate trade waste consent and bylaw			$\checkmark$
	1. Explain wastewater?		$\checkmark$	
	2. Describe wastewater treatment process		$\checkmark$	$\checkmark$
F. WASTEWATER	3. Identify wastewater storage requirements		$\checkmark$	
TREATMENT	4. Identify critical control points for wastewater treatments		$\checkmark$	
	5. Operate a wastewater treatment process		$\checkmark$	
	6. Operate odour control systems		$\checkmark$	
	1. Recognise water sources and suitability for water supply	$\checkmark$		
	2. Source water abstraction process	$\checkmark$		
	3. Manage source water abstraction for water supply	$\checkmark$		
G. DRINKING	4. Recognise water quality principles	$\checkmark$		
WATER TREATIVIENTS	5. Drinking water treatment process	$\checkmark$		
	6. Apply process to treat drinking water	$\checkmark$		
	7. Operate a drinking water treatment system	$\checkmark$		
	1. System design plan and specification	$\checkmark$	$\checkmark$	
H SYSTEM DESIGN	2. Design water system	$\checkmark$	$\checkmark$	
	1. Carry out maintenance	$\checkmark$	$\checkmark$	
I. MAINTENANCE AND	2. Carry out plant inspections	$\checkmark$	$\checkmark$	
OPTMISATION	3. Plan preventative maintenance schedule	$\checkmark$	$\checkmark$	
	4. Optimise performance of plant and equipment	$\checkmark$	$\checkmark$	
J. TRADEWASTE	1. Apply monitoring compliance programme			$\checkmark$

Discussion Document – Skills Framework for Water Services Industry

Waihanga Ara Rau

SKILL CATEGORY	SKILL PROGRESSION BLOCKS	Drinking water (DW)	Wastewater (WW)	Trade Waste (TW)
	2. Describe trade waste		$\checkmark$	$\checkmark$
	3. Identify trade waste pollutants		$\checkmark$	$\checkmark$
	4. Advise on trade waste permits			$\checkmark$
	5. Audit trade waste discharge points			$\checkmark$
	6. Issue trade waste permits			$\checkmark$
	7. Review trade waste policy			$\checkmark$
K. PEOPLE SKILLS	1. Apply communication techniques	$\checkmark$	$\checkmark$	$\checkmark$
	2. Situational engagement behaviours	$\checkmark$	$\checkmark$	$\checkmark$



## 3. SKILL BLOCKS (A PROPOSAL)

At the heart of the Framework are "skill progression blocks" (the Blocks). In this section, the Blocks have been further defined by including learning outcomes, assessment information, along with examples of **indicative learning**.

Where there appears to be duplication of learning content in and across skill blocks, this is due to the content being approached from a different perspective, situated in a different context, or building on earlier learning.

The Blocks have also been attributed to a water services sub-sector. Some blocks are unique to a subsector, while others are shared across multiple sub-sectors.

#### **A. HEALTH AND SAFETY**

1. FOLLOW SAFETY INS	RONMENT DW WW TW	
Learning outcome	Assessment Information	Indicative Learning
Follow instructions to work safely in a water services environment	Identify common hazards Comply with site safety plans Safety reporting processes	<ul> <li>Safe environments</li> <li>Hazard ID and risk assessment</li> <li>Role of the PCBU and worker</li> <li>Manual handling</li> <li>Mitigating potential risks</li> <li>Contamination</li> <li>Hygiene</li> </ul>

2. CONTRIBUTE TO A HEALTHY AND SAFE WATER SERVICES ENVIRONMENT				
Learning outcome	Assessment Information	Indicative Learning		
Contribute to a healthy and safe water services environment	Input to workplace health and safety practices Follow hazard management procedures. Follow site-specific safety requirements. Promote physical safety and wellbeing of self and others Create a review Standard operating procedure	<ul> <li>Health and safety responsibil PCBUs and workers</li> <li>Health and safety terminolog</li> <li>Hazard management proces</li> <li>Health and safety document</li> <li>Physical demands</li> <li>Personal safety</li> <li>Develop and review SOPs</li> <li>How to engage others in H&amp;S wellbeing</li> </ul>	ities fo ly ses ation and	١٢

3. APPLY HYGIENE REQU	JIREMENTS		DW	ww
Learning outcome	Assessment Information	Indicative Learning		
Apply hygiene requirements in water operations	Identification of contamination sources and appropriate remedies	<ul> <li>Sources of contamination</li> <li>Personal hygiene</li> <li>Implications of contamination</li> <li>Good practice guide</li> <li>Isolation requirements</li> <li>Sampling for bacteriological</li> </ul>	n testinç	9

4. PREPARE ESSENTIAL COMPONENTS OF A WATER SAFETY PLAN (AWAITING DIRECTION ON WASTEWATER SAFETY PLANS)			
Learning outcome	Assessment Information	Indicative Learning	
Prepare essential components of a water safety plan	Prepare essential components of a water safety plan Communicate the essential components Apply risk assessment principles Identify responses to events and emergencies	<ul> <li>Role of drinking water standards ar requirements (including guidelines standards) when developing water safety plans</li> <li>Principles of water safety planning source water risk, protection of sou water, appropriate treatment proce critical control points in water syster risk assessment principles</li> <li>Monitoring the distribution network</li> <li>Relevant resources for water safety planning</li> <li>Essential components of a water so plan</li> <li>Event and emergency responses an duty of care</li> </ul>	nd and rce ess, em, afety nd

5. APPLY THE DRINKING	WATER SAFETY PLAN	DW
Learning outcome	Assessment Information	Indicative Learning
Apply the Water Safety Plan to supply	Verify performance of water treatment	<ul> <li>Concentration of determinants</li> <li>Critical control points</li> <li>Compliance - sampling, standardising,</li> </ul>
	Activate an incident and emergency response	<ul><li>testing and reporting</li><li>Investigations and remedies</li><li>Incident and emergency response</li></ul>

6. MANAGE THE USE OF HAZARDOUS SUBSTANCES IN WATER OPERATIONS				ww
Learning outcome	Assessment Information	Indicative Learning		
Manage the use of hazardous substances in water operations	Control measures for hazardous substances from storage to application Common uses of hazardous substances Process continuity and hazardous substance	<ul> <li>Planning for use</li> <li>Control measures for use</li> <li>Role and responsibilities</li> <li>Disposal</li> <li>Storage</li> <li>Handling</li> <li>Common hazardous substar</li> <li>Controls for storage of hazardous</li> </ul>	nces dous	

7. MANAGE RISK IN WA	TER SERVICES OPERATIONS		DW	ww	тw
Learning outcome	Assessment Information	Indicative Learning			
Manage risk in water services operations	What is a Risk matrix Risk identification Risk analysis Risk management	<ul> <li>Environmental risk</li> <li>Consequences of incorrect op</li> <li>Problem solving</li> <li>Control measures</li> <li>What are emergency powers</li> </ul>		operation rs	

8. EVALUATE PROCESSE	ES TO IMPROVE SAFETY		DW	ww
Learning outcome	Assessment Information	Indicative Learning		
Evaluate processes to improve safety	Evaluation of health and safety processes Identification of safety improvements Implementation of process improvements	<ul> <li>Process evaluation</li> <li>Process development</li> <li>Safety improvements</li> <li>Communication with stakeho</li> <li>Communication with organis</li> </ul>	olders ation	

#### **B. LEGISLATION, REGULATIONS, AND COMPLIANCE**

1. IDENTIFY LEGISLATION AND REGULATIONS RELEVANT TO WATER SERVICES			DW	ww	тw
Learning outcome	Assessment Information	Indicative Learning			
Identify legislation and regulations relevant to water services operations	Identify legislations, regulations, and standards Identify information sources Identify agencies and responsibilities relevant to the water industry Breach of consent	<ul> <li>Legislative and regulat</li> <li>Water services delivery</li> <li>Relevant agencies - th</li> <li>Agency resources / gu</li> <li>Roles, responsibilities, or</li> <li>operators (Water Service</li> <li>Drinking Water Safety IDischarge)</li> <li>Resource Management</li> <li>Quality assurance rule</li> <li>Where to find information</li> </ul>	tory fro y mode neir pur lides duty of ices De Plan, C nt Act ( s and ion	amewo els pose care d elivery onsen RMA) stando	rks Plan, t to ards

2. IDENTIFY LEGISLATIO	N AND REGULATIONS RELEVANT TO TRAI	DE WASTE	тw
Learning outcome	Assessment Information	Indicative Learning	
Identify relevant provisions of legislation and standards for compliance and enforcement	Identify legislations, regulations, and standards Identify responsibilities and accountabilities for trade waste enforcement	<ul> <li>Legislative and regulatory framework and definitions</li> <li>Warranted officers</li> <li>Inter-relationships – building conset planners, water operators/authorititienvironmental agencies</li> <li>Water services delivery models</li> <li>Relevant agencies – their purpose</li> <li>Agency resources / guides</li> <li>Quality assurance rules and standor (with respect to Bylaws and Consert</li> <li>Where to find information</li> </ul>	ents, es, ards nts)

3. APPLY LEGISLATIVE A OPERATIONS	ND STANDARD REQUIREMENTS TO WATE	ER	ww
Learning outcome	Assessment Information	Indicative Learning	
Apply legislative requirements to everyday water operations	Explain why relevant legislations, regulations, and standards exist Complete reporting for compliance and legislative requirements Describe legal responsibilities for water operations	<ul> <li>Relationship between acts, legs, regs rules, standards</li> <li>Connections between legislation and operations</li> <li>Reporting requirements</li> <li>Escalation</li> <li>Hygiene requirements</li> <li>Consents, abstracting, discharges</li> </ul>	s, d

тw

4. MANAGE COMPLIAN	CE FOR WATER SERVICES		DW	ww
Learning outcome	Assessment Information	Indicative Learning		
Manage compliance water services	Optimise treatment to meet compliance requirements Manage consents Manage compliance requirements	<ul> <li>Compliance with regulations standards</li> <li>Management to ensure requ are met</li> </ul>	and iremer	าtร

#### 5. IDENTIFY CHAIN OF CUSTODY REQUIREMENTS

Learning outcome	Assessment Information	Indicative Learning
Identify chain of custody and evidential proof requirements	Identify compliance notice requirements Identify evidential proof as part of chain of custody requirement and documentation of discharges	<ul> <li>Prohibited/conditions/permitted discharges conditions</li> <li>Legal process - civil and criminal</li> <li>Business consent / permit discharge conditions</li> <li>Inspection and monitoring of trade waste</li> <li>Chain of custody requirements and documentations of breaches of discharge provisions</li> </ul>

6. IDENTIFY CONSENT/F	PERMIT CONDITIONS AND COMPLIANCE		тw
Learning outcome	Assessment Information	Indicative Learning	
Identify consent/permit conditions and compliance	Considers enforcement measures that may be required Identifies requirements and process of issuing of compliance notices	<ul> <li>Enforcement: conditions, controls a monitoring</li> <li>Trade waste notices</li> <li>Evidential proof</li> <li>Data management</li> <li>Appropriate data types: sampling, photo, video, tape recording</li> <li>Penalties</li> </ul>	nd

7. ENFORCE TRADE WA	STE PERMITS		тw
Learning outcome	Assessment Information	Indicative Learning	
Enforcement of trade waste permits	Maintain records of inspections, compliance reports, and enforcement actions. Apply chain of custody requirements (marshalling evidence) Recommend corrective actions and, if necessary, escalate enforcement measures.	<ul> <li>Understanding why and how samp are taken correctly to ensure integr the sample</li> <li>Collection and analysis of wastework samples for compliance with disch limits</li> <li>Investigation of discharges that mod damage wastewater infrastructure harm the environment</li> <li>Corrective actions and escalation of enforcement measures</li> <li>Record management and documentation – inspections, breat of discharge provisions, compliance reports, notices and enforcement actions</li> </ul>	les ity of arge ay or of ches e

#### 7. ENFORCE TRADE WASTE PERMITS

8. ISSUE COMPLIANCE	NOTICES	тw
Learning outcome	Assessment Information	Indicative Learning
Issue compliance notice for non- compliance	Reporting non-compliance Identify process of escalation for enforcement	<ul> <li>Self-monitoring compliance and audit monitoring</li> <li>Compliance approaches - motivational compliance (Braithwaite)</li> <li>Investigate illegal or excessive discharges that may damage sewer infrastructure or harm the environment.</li> </ul>

#### C. STEWARDSHIP AND ENVIRONMENTAL SUSTAINABILITY

1. RESPONSIBILITIES IN THE MANAGEMENT AND CARE OF WATER			/ TW
Learning outcome	Assessment Information	Indicative Learning	
Describe kaitiakitanga in the management and care of water	Knowledge of kaitiakitanga of wai in water services Knowledge of importance of kaitiakitanga Knowledge of the impact of supply and treatment on awa and moana Knowledge of local moana and awa	<ul> <li>Wai and a te ao Māori world view Water in te ao Māori, Whakapapa wai, Te mauri o te wai me te iwi, M whenua</li> <li>Local mātauranga, relationships</li> <li>Te Mana o te Wai - What is it and is its purpose, six principles, and to of community and regional cour considering and recognising Te M Te Wai</li> <li>Importance of kaitiakitanga for fu and sustainability</li> <li>Other frameworks to determine w quality</li> </ul>	- I o te Iana What he role cil in Iana o Iture

2. PROTECTION OF WA	TER AND ENVIRONMENT		DW	ww	тw
Learning outcome	Assessment Information	Indicative Learning			
Protect water and environment in water services	Consent requirements on treatment operations Protection of te wai – the awa, the tai, and other waterways Protection of te taiao/environment Environmental emergency responses and escalation	<ul> <li>Te hauora o te taiao – environment (sustaini sources)</li> <li>Te hauora o te wai – p waterbodies (monitori consents)</li> <li>Te Hauora o te Tangat health of people (thro Services Plans and Dri Safety Plan for the sup Wastewater Risk Mance</li> <li>Cultural overlay on wo operations (Māori moo sustainable practices, sources and water pro microbiology mahinge significance)</li> <li>Fluctuations and seas (e.g. weather events, s people, trade waste vo Local mechanisms for involvement</li> </ul>	protecting wat rotecting and a - Pro- ugh the hking V ply) ar igeme ter ser dels of preser btection a kai, si onal de eason blume) mana	cting th rer bod ng d resou tecting e Wate Vater nd nt Plan vices vices ving w n, tes of emand al influx whenu	e y rce g the r s ater ater

DESIGN TO PROTECT WATER SOURCES				ww
Learning outcome	Assessment Information	Indicative Learning		
Lead the development of sustainable practices in water system design to protect water sources	Sustainable practices are developed with mana whenua Benefits and limitations of sustainable design features are considered Water system is designed to meet enhance sustainability	<ul> <li>Improving water use efficient technologies e.g. water usage detection, efficient extraction and use of water/being water</li> <li>Sustainable water use (e.g. pwater, water treatments and technologies, water recycling reuse, urban developments)</li> <li>Community involvement and public awareness campaige study)</li> <li>Te Aranga Design Principles</li> <li>Climate change adaptation, system environmental start the (e.g. land proximity to water to source materials, building to drought and floods)</li> <li>Pollutions and contamination (nutrient pollution, untreated stormwater pollution)</li> </ul>	ey (ne e and o of wa er sens reserv g and d educ gns (co eco- io finisi vays, e resisto n -	w leak ter itive) ing ation ase n se sy ance ge,

## 3. LEAD THE DEVELOPMENT OF SUSTAINABLE PRACTICES IN WATER SYSTEM

#### **D. MATHS AND SCIENCES**

1. APPLY CALCULATIONS			DW	ww	тw	
Learning outcome	Assessment Information	Ind	icative Learning			
Apply calculations to water operations	Formulate to solve calculations for water services Explain results correctly	•	Water services calcula volumes, levels, flow ra and pressures. Fundamental numera	ations - ates, ve cy	- area, elocitie	S
	Explain relevance to Treatment processes	• • •	Ratios Units of measurement Unit conversions Basic calculus Connect to treatment	s proces	sses	

2. APPLY MATHEMATICAL PRINCIPLES			DW	ww	тw
Learning outcome	Assessment Information	Indicative Learning			
Apply mathematical principles to solve problems in water services operations	Select appropriate methods Apply advanced methods to solve problems for water services	<ul><li>Calculus</li><li>Statistics</li></ul>			

3. APPLY PHYSICS			DW	ww	тw
Learning outcome	Assessment Information	Indicative Learning			
Apply physics to water operations	Knowledge of fluid dynamics	Principles of physics to control hydraulics	operc	ite anc	1
	Knowledge of hydraulics	Understanding electric	city		
	Knowledge of electricity				

DW

тw

4. APPLY MICROBIOLOGICAL AND CONTAMINANT SCIENCE TO WATER				ww	TW
Learning outcome	Assessment Information	Indicative Learning			
Apply microbiological and contaminant science to water	Knowledge of microbiology and contaminants in water Processes to reduce microbiological and contaminant risk Hydrogen, Nitrogen, carbon and Phosphorus cycle	<ul> <li>Organisms: pathogens coli, bacteria, disease</li> <li>Chemicals</li> <li>Metals</li> <li>Emerging contaminant</li> <li>Microplastics</li> <li>Endocrine disruptors</li> <li>PFAs (per- and polyflue)</li> </ul>	s; Enter ts oroalk	rococc yls)	ίΕ.

#### 5. APPLY CHEMISTRY TO WATER SUPPLY

Learning outcome	Assessment Information	Indicative Learning
Apply fundamental chemistry in drinking water supply	Knowledge of chemicals' effect on water Knowledge of chemical dosing	<ul> <li>The chemistry of water</li> <li>Periodic table</li> <li>Chlorine demand, freely available chlorine, disinfection by-produces</li> <li>Chlorine, UV, pH balancing, alkalinity</li> <li>What to add and why</li> </ul>

6. APPLY CHEMISTRY TO WASTEWATER				тw
Learning outcome	Assessment Information	Indicative Learning		
Apply fundamental chemistry in wastewater treatment	Knowledge of chemicals' effect on water Knowledge of chemical dosing Knowledge of pH and alkalinity in water environment Knowledge of atomic mass of an element in a compound Knowledge of differences between organic and inorganic chemistry Redox reactions	<ul> <li>Basics of Inorganic chemistry</li> <li>Basics of organic chemistry</li> <li>The chemistry of wastewater</li> <li>Nitrogen in all forms: nitrate, ammonia, organic nitrogen</li> <li>Sulphur, phosphorus, heavy r</li> <li>Periodic table</li> <li>Atomic mass</li> <li>What to add and why</li> </ul>	nitrite, netals	

DW WW TW

#### **E. SAMPLING AND TESTING**

#### 1. KNOWLEDGE OF SAMPLING

Learning outcome	Assessment Information	Indicative Learning
Describe testing and sampling for water services	Knowledge of different kinds of sampling When to use each sampling process Why each method is used Take samples Develop an operational Sampling programme	<ul> <li>Importance of water monitoring</li> <li>Water sampling methodology</li> <li>What to sample and when</li> <li>Hygiene</li> <li>Sampling methodology</li> <li>What each water services industry samples and tests</li> </ul>

2. CARRY OUT SAMPLIN	IG AND TESTING	DW WW TW
Learning outcome	Assessment Information	Indicative Learning
Carry out sampling and testing for water services operations	Appropriate sampling method identified and used	<ul> <li>What is being tested and sampled – chemical and biological contaminants and required values</li> </ul>
	Sample type is appropriate for purpose	<ul> <li>Indicators of water treatment on drinking water supply</li> <li>Meeting DWSNZ standards - sampling,</li> </ul>
	Sample is collected	<ul><li>standardising, testing and reporting</li><li>Inline, grab, composite sampling</li></ul>
	Sample is tested	<ul> <li>Process Sampling (e.g., real events, reaction speed to changes)</li> </ul>
	Interpret test results	Compliance Sampling (e.g., environmental analysis)
	Report findings from site testing	<ul> <li>Bacteria Sampling (e.g., sludge production analysis, microbial counting, setting tests)</li> <li>Discharge limit compliance</li> <li>Equipment use - e.g. microscopes, spectrophotometers, dissolved oxygen probes</li> <li>Health and safety - e.g. PPE</li> <li>Hygiene and sterilisation</li> </ul>

тw

Learning outcome	Assessment Information	Indicative Learning
Carry out compliance sampling and testing	Appropriate sampling protocol applied to business operationsAppropriate sampling method identified and usedSample type is appropriate for purposeSample is collectedSample is tested	<ul> <li>Collection and analysis of trade waste pollutants compliance</li> <li>What is being tested and sampled chemical and biological contaminants and required values</li> <li>Compliance sampling - schedule, location, type, testing parameters, sample integrity</li> <li>Process Sampling (e.g., real events, reaction speed to changes)</li> <li>Sample requirements - lab, storage and preservation and transit logistics</li> </ul>
	Interpret test results Report findings from site testing Site trade waste sample collected	<ul> <li>Business site access protocols</li> <li>Hazard and PPE requirements</li> <li>Discharge limit compliance</li> <li>Equipment use - e.g. microscopes, spectrophotometers, dissolved oxygen probes</li> </ul>
	requirements	

#### 3. COMPLIANCE SAMPLING AND TESTING FOR TRADE WASTE

4. IMPLEMENT SAMPLIN	G PROGRAMME FOR WATER SUPPLY		DW
Learning outcome	Assessment Information	Indicative Learning	
Plan and implement a sampling programme for water supply	Plan testing, sampling and monitoring programme Apply plan to water supply	<ul> <li>Manage and prevent water contamination</li> <li>Waterborne disease</li> <li>Risks to drinking water quality</li> <li>Communication with businesses</li> <li>Communication with suppliers</li> <li>Communication with stakeholders</li> </ul>	

5. TRADE WASTE CONS	ENT AND BYLAW	тw
Learning outcome	Assessment Information	Indicative Learning
Evaluate sampling and testing findings against trade waste consent and bylaw	Interpret test results Report findings from site testing	<ul> <li>Analysing and Interpreting test results against consent requirements</li> <li>Importance of sample requirements - lab, storage and preservation Reporting findings</li> </ul>

WW TW

#### **F. WASTEWATER TREATMENT**

1. EXPLAIN WASTEWATER			
Learning outcome	Assessment Information	Indicative Learning	
Explain wastewater	Sources of wastewater	Difference between industrial and residential wastewater	
	Understanding organic and	• Why we need to treat	
	inorganic components of	Catchment awareness	
	wastewater	Discharge catchment	
		Components of wastewater	
	Performance standards for	• Infiltration and flow and its effects	
	discharge catchment	Environmental performance stande	ards

#### 2. DESCRIBE WASTEWATER TREATMENT PROCESS

Learning outcome	Assessment Information	Indicative Learning
Describe the stages of the wastewater treatment process	Different treatment processes Limitations of methods Key stages identified Consequences of poor performance The end goal for treatment processes	<ul> <li>Explanation of processes</li> <li>Different wastewater treatment plants, ponds, other methodology</li> <li>Stages of treatment</li> <li>Analysis of the benefits and limitations of processes and plant</li> <li>Result of sub-optimal performance</li> <li>Key stages of wastewater treatment</li> </ul>
	Chemical application and handling	

3. IDENTIFY WASTEWAT	ER STORAGE REQUIREMENTS	ww
Learning outcome	Assessment Information	Indicative Learning
Identify wastewater storage needs	Storage of wastewater Evaluation of storage needs	<ul> <li>Storage and intertidal basins</li> <li>Types of storage</li> <li>Raw wastewater storage/buffer tanks</li> <li>Treated wastewater storage/ stormwater buffer tanks</li> </ul>

4. IDENTIFY CRITICAL C	ICAL CONTROL POINTS FOR WASTEWATER TREATMENT		ww
Learning outcome	Assessment Information	Indicative Learning	
Identify critical control points for the wastewater treatment plant	Identify critical control points Understanding of corrective actions for critical control points Understanding of operational monitoring and inspection requirements of critical control points Verification and Calibration Use of Laboratory equipment. Maintenance of probes	<ul> <li>Critical control points</li> <li>Monitoring and inspection</li> <li>Escalation</li> <li>SCADA</li> <li>Monitoring and inspection instrumentation</li> <li>How verification and calibration is a</li> </ul>	done



ww

Learning outcome	Assessment Information	Indicative Learning
Apply treatment processes to wastewater	Preliminary-treatment processes are undertaken to prepare water for further treatment H&S How different systems work Downstream effects Bypass	<ul> <li>Inlet works</li> <li>Grit removal</li> <li>Screening</li> <li>Disposal</li> <li>Flow measurement</li> <li>Management and sizing of Stormwater tanks</li> <li>Limitations</li> <li>FOG</li> </ul>
	Primary treatment processes are undertaken to remove solids	<ul><li>Sedimentation tanks</li><li>Clarification</li><li>SCADA (Sim-plant)</li></ul>
	Secondary treatment processes are undertaken to remove biodegradable organic matter from wastewater	<ul> <li>Ponds, Aerated lagoons, and oxidation ponds, facultative ponds and anaerobic lagoons</li> <li>Activated sludge</li> <li>Fixed growth biological treatment process</li> <li>Waste stabilisation ponds</li> <li>Discharge waste activated sludge</li> <li>Scada (Sim-plant)</li> </ul>
	Tertiary treatment processes are undertaken to prepare water for discharge	<ul> <li>Membrane</li> <li>Disk filters</li> <li>Disinfection: UV, Chlorine, ozone</li> <li>Environmental impacts</li> <li>Resource consent compliance</li> <li>Nutrient removal</li> <li>Scada Sim-plant</li> </ul>
	Sludge and Solids management	<ul> <li>Screenings and grit</li> <li>Bio solids</li> <li>Digesters</li> <li>Dewatering</li> <li>Thickening</li> <li>Receiving environment</li> </ul>

#### 5. OPERATE A WASTEWATER TREATMENT PROCESS

6. OPERATE ODOUR CONTROL SYSTEMS		ww	
Learning outcome	Assessment Information	Indicative Learning	
Operate odour treatment plant/system	Odour control processes and systems are operated Instruments are calibrated Odour is monitored Impact of poor odour control	<ul> <li>Ventilation systems</li> <li>Odour control systems and process</li> <li>Calibration of instruments</li> <li>Acceptable levels of odour</li> <li>Resource consent</li> </ul>	ses



#### **G. DRINKING WATER TREATMENT**

1. RECOGNISE WATER S	RECOGNISE WATER SOURCES AND SUITABILITY FOR WATER SUPPLY		DW
Learning outcome	Assessment Information	Indicative Learning	
Recognise water sources and suitability for water supply	Identify different water sources Describe how water is sourced	<ul> <li>Source water characteristics</li> <li>Source water supply and manager</li> <li>Springs, dams, Impounding reserved bore holes</li> <li>Potential risks</li> <li>Environmental factors impacting sources</li> <li>Catchment management and sour protection</li> <li>The types and qualities of raw water available</li> <li>The strategies for managing raw w quality and maximising yields</li> <li>Local knowledge water supply sour</li> <li>Flow principles</li> <li>Bore hydraulics, consent requirement</li> </ul>	nent irs, rce ater ater rce

2. SOURCE WATER ABS	TRACTION PROCESS	D	w
Learning outcome	Assessment Information	Indicative Learning	
Describe strategies for source water abstraction	Understanding of source water quality and volume Description of strategies	<ul> <li>Determining suitability of source water supply</li> <li>Abstraction processes</li> </ul>	•

3. MANAGE SOURCE W	AGE SOURCE WATER ABSTRACTION FOR WATER SUPPLY		DW
Learning outcome	Assessment Information	Indicative Learning	
Manage source water abstraction for water supply	Monitor water levels to ensure quality and quantity Manage supply to ensure water	<ul> <li>Ongoing supply management</li> <li>Sustainability and source water management</li> <li>Quantity and quality</li> </ul>	
	levels remain acceptable	<ul><li>Monitoring water levels in aquifers</li><li>Characteristics and volume of water</li></ul>	ər
	Control rates of abstraction	Select sources for optimum raw wa quality	iter
	Describe abstraction and pre- treatment method	<ul> <li>Control water abstraction at rates t meet the quality and quantity requirements</li> </ul>	hat
	Monitor and adjust abstraction and pre-treatment process	<ul> <li>Water Take Consent</li> <li>Drinking Water Safety Plan - abstra and pretreatment method</li> </ul>	ction
		<ul> <li>Source-water Risk Management Pla</li> <li>Cyanobacteria / Cyanotoxin Respo Plan</li> </ul>	an nse

#### 4. RECOGNISE WATER QUALITY PRINCIPLES

Learning outcome	Assessment Information	Indicative Learning
Recognise water quality principles	Explanation of key principles Evaluation of the role of each principle, risks and consequences	<ul> <li>Six principles of safe drinking water</li> <li>Water quality standards (DWQAR etc)</li> <li>Purpose of treatment</li> <li>What risks may occur (change to sources, malfunction)</li> <li>Adverse occurrences and consequences incorrect operation</li> </ul>

5. DRINKING WATER TR	EATMENT PROCESS		DW
Learning outcome	Assessment Information	Indicative Learning	
Describe the stages of the drinking water treatment process	Key stages identified Treatment process goals	<ul> <li>Stages of treatment</li> <li>Explanation of processes</li> <li>Analysis of the benefits and limitati of processes and plant</li> </ul>	ons
	Limitations of methods Consequences of poor performance	<ul> <li>Result of sub-optimal performance</li> <li>Key stages of drinking water treatment</li> </ul>	nent

DW

6. APPLY PROCESSES TO TREAT DRINKING WATER     D		DW	
Learning outcome	Assessment Information	Indicative Learning	
Apply processes to treat water	Evaluation of benefits and limitations of different processes	<ul><li>Limitations of different processes</li><li>Risks</li></ul>	
	Monitoring and calibration of equipment and machinery	Consequences of sub-optimal     performance	
	Maintenance of equipment and components	Proactive maintenance	
	Knowledge of relevant regulations and standards	<ul><li>Where to find information</li><li>DWSNZ</li><li>DWSNZ</li></ul>	
	Chemical conditioning	<ul> <li>Coagulation</li> <li>Flocculation</li> <li>pH correction</li> <li>Fluoridation</li> </ul>	
	Clarification	<ul> <li>Clarifiers</li> <li>Settlers</li> <li>Dissolved air flotation</li> <li>Hybrids</li> </ul>	
	Filtration	<ul><li>Cartridge filters</li><li>Sand</li><li>Membranes</li></ul>	
	Absorption	<ul> <li>PAC (Powdered Activated Carbon)</li> <li>GAC (Granular Activated Carbon)</li> <li>BCAC (Biological activated carbon)</li> <li>Mn (Manganese) contactors</li> </ul>	)
	Disinfection	<ul> <li>Chlorine (liquid, solid, gas)</li> <li>Calcium hypochlorite</li> <li>Electrolysis</li> <li>UV, protozoal</li> <li>Chloramines</li> <li>ClO2</li> <li>Compliance requirements</li> <li>Equipment used</li> <li>Regulations and drinking water standards</li> </ul>	
	Pumps and pumping	<ul> <li>Distribution systems</li> <li>Styles of pumps</li> <li>Head pressures</li> <li>Chemical dosing pumps</li> <li>Sludge pumps</li> </ul>	
	Novel Processes	<ul> <li>AOP (advanced oxidation processe</li> <li>O3 (Ozone-based treatment system</li> <li>Ion exchange</li> <li>RO (Reverse Osmosis)</li> </ul>	≥s) ms)

Sludge	<ul> <li>Cakes</li> <li>Centrifuges</li> <li>Belt presses</li> <li>Refuse/landfill</li> </ul>
Backflow	<ul> <li>Q/A rules</li> <li>Boundary devices</li> <li>Approved methods of testing</li> <li>Risk assessment</li> </ul>
Water distribution	<ul> <li>ASNZ standards</li> <li>SR</li> <li>DMAs (District metered areas)</li> <li>Pipes</li> <li>Water Source Areas</li> <li>Pressure</li> <li>Leaks</li> </ul>
Wash water	<ul> <li>Recycle rates</li> <li>Water quality</li> <li>Thickening processes</li> <li>Separations processes</li> <li>Polymer systems</li> <li>Sewer connections</li> <li>Discharges</li> <li>Consents</li> </ul>

#### 7. OPERATE A DRINKING-WATER TREATMENT SYSTEM

Learning outcome	Assessment Information	Indicative Learning
Operate a drinking- water treatment	Operate a drinking water treatment system	<ul> <li>Maintenance of components – filters, UV</li> <li>Hygiene</li> </ul>
plant/system	Meet compliance requirements	<ul> <li>System understanding (such as whether reticulation or electrical)</li> </ul>
	Respond to emergencies	Distribution of drinking-water from     source to point of supply
	Isolation, shut down, recommission	Consequences of incorrect operation
	water treatment plant	Local bylaws
		Water storage assets
		Pumping systems
		Emergency power supplies.

DW

#### **H. SYSTEM DESIGN**

1. SYSTEM DESIGN PLAN AND SPECIFICATION				ww
Learning outcome	Assessment Information	Indicative Learning		
Interpret system design plans and material specifications for installation and maintenance	Interpret dimensions, materials and installation methods from plans Commission system	<ul> <li>System understanding (retirelectrical)</li> <li>Features of plans</li> <li>Terminology, abbreviations symbols</li> <li>System design sequencing</li> <li>Commissioning processes</li> </ul>	and	on or

2. DESIGN WATE	R SYSTEMS	DW WW
Learning outcome	Assessment Information	Indicative Learning
Evaluate information to design water systems	Determining of system requirements Evaluation of information to recommend system design, variations, and/ variations/improvements Implementation of system Identify sustainable solutions	<ul> <li>Common errors (e.g over-engineered and not fit-for-purpose)</li> <li>Impact of variations on implementation</li> <li>Analytics to inform systems design (including understanding water quality tests)</li> <li>Understanding community resources and availability</li> <li>Understanding different networks - costs, water and safety plans</li> <li>Approved material</li> <li>Good practice</li> <li>WRAS / DWI approvals for items in contact with water</li> <li>Design, variations, improvements</li> <li>Capital expenditure allowances</li> <li>Realistic system design – scale, number of people and buildings, water sources, ongoing costs</li> <li>Well-functioning system</li> <li>Correct sizing/process control (small and council)</li> </ul>

DW WW

#### I. MAINTENANCE AND OPTIMISATION

#### 1. CARRY OUT MAINTENANCE

Learning outcome	Assessment Information	Indicative Learning
Carry out maintenance for water services operations	Communicate with other contractors Respond to maintenance requests Co-ordinate maintenance activities Carry out maintenance Troubleshooting Record keeping and Reporting	<ul> <li>Appropriate procedures.</li> <li>Planned maintenance</li> <li>Breakdown, isolation and repairs</li> <li>Working with other teams.</li> <li>Assess and record the condition of assets and performance information.</li> <li>Respond to control room calls</li> <li>Attend site within scheduled timeframes.</li> <li>Input into operational system changes.</li> <li>How to respond to a variety of call-out and emergency situations.</li> </ul>

2. CARRY OUT PLANT INSPECTIONS			DW	ww
Learning outcome	Assessment Information	Indicative Learning		
Carry out plant inspections	Inspection for anomalies and functionality Compliance requirements are met Reporting is undertaken	<ul><li>Routine operational checks</li><li>Inspection schedules</li></ul>		
	Able to explain upstream and downstream effects on processes			

#### 3. PLAN PREVENTATIVE MAINTENANCE

3. PLAN PREVENTATIVE MAINTENANCE			DW	ww
Learning outcome	Assessment Information	Indicative Learning		
Plan preventative maintenance requirements of treatment infrastructure	Identify preventative mechanical maintenance requirements of treatment infrastructure	<ul> <li>Deterioration of treatment infrastructure</li> <li>Maintenance requirements</li> <li>Optimising asset lifespan</li> <li>Audio and visual checks</li> <li>Routine maintenance</li> </ul>		

4. OPTIMISE PERFORMANCE OF PLANT AND EQUIPMENT				ww
Learning outcome	Assessment Information	Indicative Learning		
Analyse operations to optimise performance of treatment plant and equipment	Evaluate operations Implement improvements and enhancements Communicate with stakeholders Asset inspections Record keeping and Reporting Analysing data	<ul> <li>Opportunities for enhanceme</li> <li>Performance indicators</li> <li>Operating parameters</li> <li>Asset condition inspections</li> <li>Performance against health quality, time, cost and innova</li> <li>Reliability measures</li> <li>Availability targets</li> <li>Systems implementation</li> <li>Maintenance and improvem</li> <li>Work order</li> <li>Document procedures</li> <li>Implement training</li> <li>Equipment certification and in</li> </ul>	ents. and so ition. ent	afety, als.

#### J. TRADE WASTE MONITORING AND COMPLIANCE

1. APPLY MONITORING	COMPLIANCE PROGRAMME		тw
Learning outcome	Assessment Information	Indicative Learning	
Apply monitoring programme	Audit of discharge points Sampling data trends	<ul> <li>Motivational compliance</li> <li>Guidance to clients</li> <li>Education to stakeholders</li> <li>Compliance approaches and strate</li> </ul>	эду

2. DESCRIBE TRADE WA	STE		ww	TW
Learning outcome	Assessment Information	Indicative Learning		
Describe why the management of trade waste is essential	Definition of what trade waste is, its source, and how it differs from domestic wastewater	<ul> <li>What is trade waste - definition (food services, manufacturing automotive workshops, chern processing, healthcare facilities</li> <li>Substances in trade waste de (solid and suspended particle oils/fats/grease, heavy meter chemicals and hazardous sur nutrients (nitrogen and phose pathogens and microorganic organic matter / biochemical demand (BOD), toxic or flam substances)</li> <li>Prohibited substances</li> <li>Impact of peak discharges a shutdown periods of trade w operators on wastewater system concern, spill management and pre-treat</li> </ul>	ion, origing, nical cies). ischargies, ils, ibstand phorou sms, al oxyge mable nd aste tems ment	gin ge us), en

#### 3. IDENTIFY TRADE WASTE POLLUTANTS

WW TW

Identifies trade waste pollutants and associated harmIdentification of contaminants that harm wastewater infrastructure, environment, and public health.•Contaminants that can harm sewer and wastewater system, health hazards to people, harm to the environment, or public health if not properly managed.••	Learning outcome	Assessment Information	Indicative Learning
	Identifies trade waste pollutants and associated harm	Identification of contaminants that harm wastewater infrastructure, environment, and public health.	<ul> <li>Contaminants that can harm sewer and wastewater system, health hazards to people, harm to the environment, or public health if not properly managed.</li> <li>Impact of peak discharges and shutdown periods of trade waste operators on wastewater systems</li> <li>Constituents of concern, spill management and pre-treatment</li> </ul>

4. ADVISE ON TRADE W	ASTE PERMITS		TW
Learning outcome	Assessment Information	Indicative Learning	
Advise businesses on best practices pre-	Identify appropriate pre- treatment to apply to operations	<ul><li>Pretreatment options and applicati</li><li>Benefits to industry</li></ul>	on
treatment	Identify trade waste compliance benefits		

5. AUDIT TRADE WASTE DISCHARGE POINTS			тw
Learning outcome	Assessment Information	Indicative Learning	
Conduct site inspections and audits of trade waste discharge points	Develop trade waste discharge programme and schedule Undertakes investigations	<ul> <li>Monitoring trade waste discharge - programme and schedule of inspections- TW bylaw and consen conditions</li> <li>Conducting site inspections and au of trade waste discharge points</li> <li>Investigating trade waste discharge</li> <li>Reporting on findings of the audits, inspections and investigations.</li> </ul>	t Idits es site

6. ISSUE TRADE WASTE	ISSUE TRADE WASTE PERMITS		
Learning outcome	Assessment Information	Indicative Learning	
Issue permits with specific conditions based on waste composition and risk assessment	Assess applications for trade waste discharge approvals. Develop monitoring programme and schedule	<ul> <li>Applications</li> <li>What's in them, nature of business operations/customer risk profile, or of trade waste, site plans or drawine</li> <li>Constituents of concern, spill management and pre-treatment (including harms - discharges, environmental impacts, wastewate system)</li> <li>Waste reduction and pre-treatment - grease traps, oil separators, and treatment systems</li> <li>Contingency plans</li> <li>Flow controls and stormwater protection</li> <li>Classification of trade waste opera - flow and contaminant loading</li> <li>Consent approval requirements</li> <li>Permit / Consents Management</li> <li>Permits and specific conditions bas on waste composition and risk assessment</li> <li>Issuing consents</li> <li>Client guidance/education - knowl level and motivational compliance (Braithwaite)</li> <li>Monitoring plan - concentrations, n flow limits, prohibited</li> <li>Sampling requirements and testing parameters</li> <li>Review and renew trade waste agreements</li> </ul>	igin gs r ht(s) tors sed edge hass,

#### 6. ISSUE TRADE WASTE PERMITS

7. REVIEW TRADE WASTE POLICY			
Learning outcome	Assessment Information	Indicative Learning	
Prepare report on trade waste trends and policy effectiveness	Analyse data and trends Evaluate policy Prepare a report	<ul> <li>Segmenting "clients"</li> <li>Data for assessing regularly progress/issues - what data - what does it mean</li> </ul>	

Train and teach staff

#### **K. PEOPLE SKILLS**

outcomes in

water services

8. COMMUNICATION SKILLS/TECHNIQUES			DW	ww	тw
Learning outcome	Assessment Information	Indicative Learning			
Use communication skills/technique s in water services	Working collaboratively Communicating with team and stakeholders Problem solving with others Adapting communications	<ul> <li>Different communications</li> <li>Engagement with constakeholders</li> <li>Communications with agencies</li> <li>Communications with departments.</li> </ul>	ntion m mmun h exter h inter	nethod ity and rnal nal	s for
9. COMMUNICATION SKILLS/TECHNIQUES			DW	ww	тw
Learning outcome	Assessment Information	Indicative Learning			
Engagement behaviours that optimise	Recognising and responding to emotions Conflict resolution and diffusion	Different communications –     escalation strategies     Engagement with co	ation m for exc s	nethod ample,	s for de-

	•	Engagement with community
Managing relationships		stakeholders
	•	Communications with externa
Effective delegation		agencies



### 4. FUTURE QUALIFICATION STRUCTURE (TO BE TESTED)



### **5. EXISTNG QUALIFICATIONS AND STANDARDS (UNDER REVIEW)**

The qualifications included in the review include:

- New Zealand Certificate in Water Treatment (Small Scale Systems) (Level 3) [<u>Ref: 2240</u>]
- New Zealand Certificate in Drinking-water Treatment (Level 4) [Ref: 4138]
- New Zealand Diploma in Drinking-water Treatment (Level 5) [Ref: 4139]
- New Zealand Certificate in Wastewater Treatment (Level 4) [Ref: 4142]
- New Zealand Diploma in Wastewater Treatment (Level 5) [Ref: 4143]
- New Zealand Certificate in On-site Wastewater Management Systems Design (Level 4) [Ref: 4216]
- New Zealand Certificate in Drinking-water Supply (Assessment) (Level 5) [Ref: 4223]

The unit standards included in the review include:

- Drinking Water
- Drinking Water Assessment
- <u>Wastewater Treatment</u>
- <u>Water Generic</u>
- Water Reticulation
- Water Treatment

