



Regulation - Update

Charles Barker – Director Regulatory System



Our water, our future.

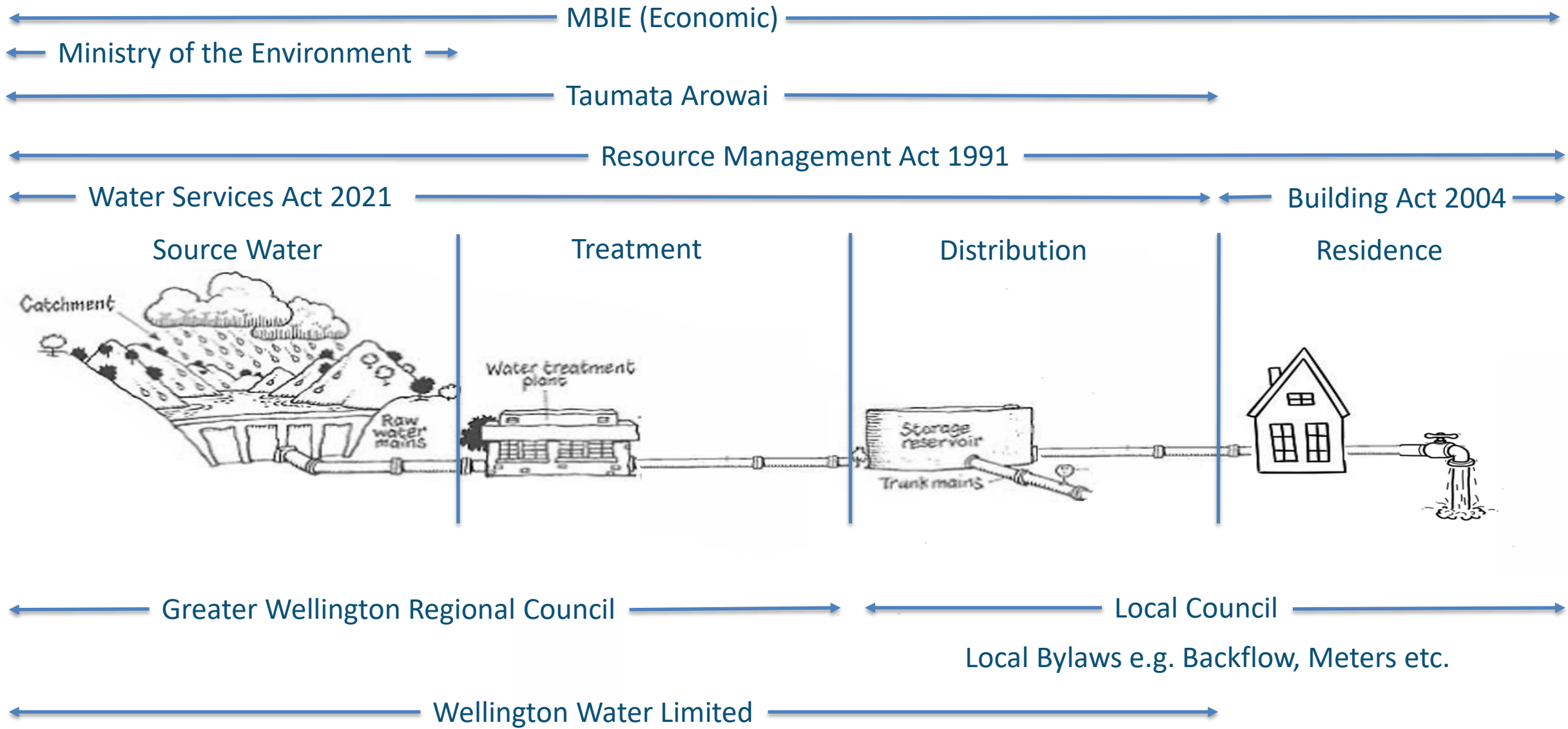
Council update – Regulation Program



- Show the developing regulation landscape.
- Clarify what agencies have policy/regulations out for consultation.
- Highlight to Councils aspects that may impact them or pose risk.
- Demonstrate how WWL is preparing to meet the regulatory requirements.

Purpose

- A shared understanding of the changing regulation landscape



Our water, our future.



Source Water – Ministry for the Environment



- Has responsibility under RMA for National Environmental Standards for Sources of Human Drinking Water (NES-DW).
- Out for consultation – strengthen ability to protect sources, standardising definitions, strengthening regulation of activities within Source Water Risk Management Areas (SWRMA).
- [NES-DW Consultation Document](#)

- Impact on Regional Councils
 - Mapping SWRMA
 - Ensuring NES-DW is being applied in consenting process
 - Ensuring all new and old activities in within SWRMA are consented.

- Impact on Territorial Authorities
 - Ensuring NES-DW is being applied to applicable consenting decisions

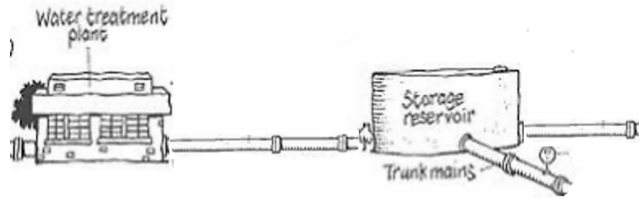
- Impact on Wellington Water Limited
 - Greater responsibility as a Water Supplier to engage with Councils regarding consents within SWRMA and articulating risks to the supply through Source Water Risk Management Plans (SWRMP) as required by Taumata Arowai.



Source Water – Taumata Arowai



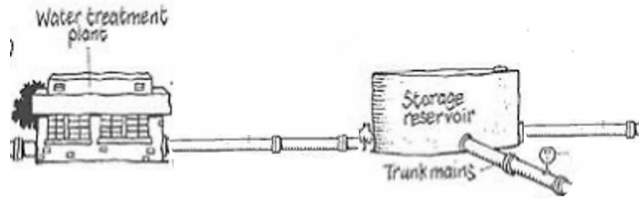
- Has responsibility under Water Services Act 2021 to ensure that Water Suppliers have Source Water Risk Management Plans (SWRMP) for all their water sources (these replace Catchment Plans etc.).
- Water Suppliers are required to submit SWRMP in conjunction with their Drinking Water Safety Plans (DWSP) in Nov 22.
- Source water documents out for consultation - Spring and Bore Supplies, Roof Water Supplies, Agricultural Supplies. [Taumata Consultation Documents](#)
- Impact on Wellington Water Limited
 - WWL has engaged Tonkin and Taylor to generate SWRMP for all eight of WWL's water sources (Confident in a resulting high level of compliance).
 - Part of this process will involve engagement with councils and Iwi to give full effect to te Mana o te Wai.
 - Intention to make submission on Spring and Bore consultation document as relevant to community aquifer taps.



Treatment and Distribution– Taumata Arowai



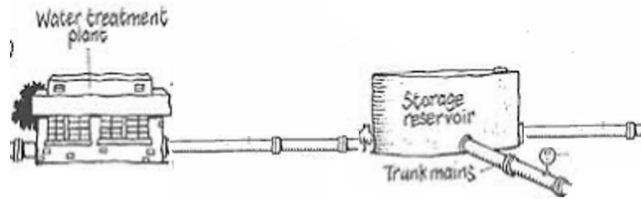
- Taumata Arowai
 - Has responsibility to ensure that drinking water suppliers fulfill their duty to supply safe drinking water. Fundamental to this is that drinking water suppliers have effective ways to identify and manage risks to ensure drinking water is safe and supply is secure.
 - The key regulatory requirement of water suppliers is the production and implementation of Drinking Water Safety Plans (DWSP) in line with best practice – this covers all the operational level requirements including audit and risk etc.
 - Water suppliers must also demonstratively prove their water is safe through requisite testing and monitoring.
 - Documents Taumata Arowai has out for consultation - Drinking Water Standards, Drinking Water Quality Assurance, Drinking Water Aesthetic Values and Drinking Water Network Environmental Performance. [Taumata Consultation Documents](#)
- Impact on Wellington Water Limited
 - Wellington Water requires three DWSP – currently has one that covers the urban areas as one region and another is being drafted for SWDC. Both are/will be only partially compliant with best practice by Nov 22 and major areas of shortfall are audit, investigation, and risk have been identified to demonstrate progress on.
 - The vitalization of the Safe Water Drinking Committee within Wellington Water will become the home of the Drinking Water Safety Plans and empower the required audit, investigation and risk activities.



Treatment and Distribution– Taumata Arowai (continued)



- Impact on Wellington Water Limited
 - Testing and Monitoring activities are more clearly laid out in the consultation papers. There is the forecasted increase in the requirement to collect data and ensure its quality. Within the Network Performance Group there has been good progress in understanding the data requirements and improving its integrity (there is over a 1000 measures to collect data on).
 - Of note – Some of the Drinking Water Network Environmental Performance measures are unexpected and are to be phased in over three years. They require a mix of data some of which is not held or generated by WWL (An example is in the next slide). This data is a departure from the expected remit of Taumata Arowai.

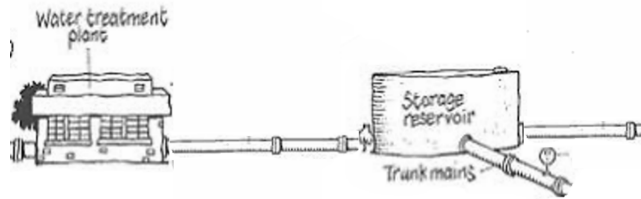


Environmental Performance Measures (Phase 1 2022)



Insight	Performance Measure	Data
Is environmental health protected?	Drinking water service coverage	% of residential properties connected to drinking water network
	Water abstractions within environmental limits	Water supply source type
		Volume of water abstracted (m ³ /year)
		Water abstractions for non-residential use (m ³ /year)
	Resource consent compliance	Resources consents are held for drinking water networks (e.g., water take consent, discharge consents, etc)
Expiry dates for resource consents		
Permitted activity rules the network is operating under		
Are services economically sustainable?	Affordability	\$/year for a residential household using 200m ³ of water
		\$/m ³ for a non-residential customer
		Average hours on a minimum wage to pay water bill
	Revenue covers costs	Revenue/Operating costs, or Operating Surplus (+ve) or deficit (-ve) / Operating Income
	Asset depreciation funded	Capital renewal delivered/annual depreciation for the period
	Debt at serviceable levels	Net Financial Liabilities/Operating Income
		Borrowing costs/revenue

	Actual expenditure aligns with budgeted expenditure	Capital Renewal Planned Budget for a period / Capital Renewal Forecast Outlays warranted for the period
	Water supply capital investment projects	Details (Name, Location, Start Date, End Date, Status, Budget, % Complete) of any investment projects over \$100,000 or a significant change in the network
Are services reliable?	Customer water use	% of residential customers with water meters
		% of non-residential customers with water meters
	Fault attendance and resolution	Average hours to attend to an urgent water supply fault
		Average hours to attend to a non-urgent water supply fault
		Average hours to resolve to an urgent water supply fault
		Average hours to resolve to a non-urgent water supply fault
	Systems interruption	Planned interruptions (Number)
		Third party incidents (Number)
	Asset condition ⁴	% of pipelines that have received a condition grading
		% of pipelines in poor or very poor condition
% of above ground assets that have received a condition assessment		
% of above ground assets in poor or very poor condition		
Water pressure	Average system pressure	
Water restrictions ⁵	Water restriction days (properties*days)	
Are resources used efficiently?	Network water losses	Estimated total network water loss (m3/year)
		Percentage Estimated Total Network Water Loss (%)
		CARL (current annual real loss) (m3/year)
		CARL (current annual real loss) (L/connection/day)



Drinking Water Quality Assurance Rules – example.

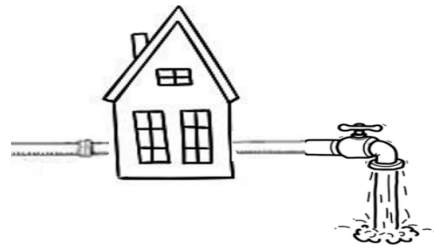


T3 Rules for Water Disinfected with Ultraviolet Light

Rule Number	Requirement	Monitoring/Assurance	Compliance period
T3.14	All water must pass through the UV reactor(s) and must be monitored in accordance with Table 19.	Monitoring	1 day
T3.15	A reduction equivalent dose of not less than 40 mJ/cm ² (or equivalent) must be achieved for not less than 95 % of the day.	Monitoring	1 day
T3.16	UVI is not less than 80% of the value (established by validation) required to achieve reduction equivalent dose of not less than 40 mJ/cm ² (or equivalent) any consecutive 15-minute period.	Monitoring	1 day
T3.17	Turbidity does not exceed 5.0 NTU for the duration of any consecutive 15-minute period.	Monitoring	1 day
T3.18	UVT is not less than 95% of the lowest UVT for which the reactor has been validated for more than 5% of the day. ²⁸	Monitoring	1 day
T3.19	UVT is not less than 80% of the lowest UVT for which the reactor has been validated for the duration of any consecutive 15-minute period. ²⁹	Monitoring	1 day
T3.20	The equipment is operated within the flow range for which it was validated for at least 95% of the day.	Monitoring	1 day

Table 19. T3 Requirements for UV disinfection

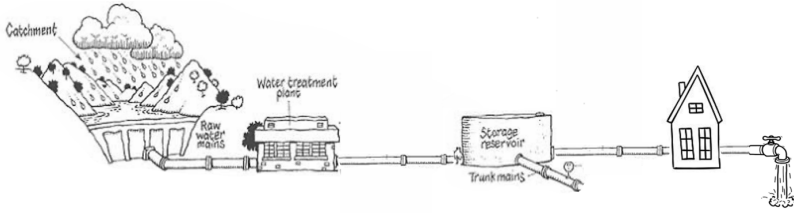
Parameters that need to be continuously monitored and where they need to be monitored:	<p><i>Parameters: UV Transmittance</i></p> <p><i>Where it needs to be monitored: Water entering or leaving the UV reactor(s).</i></p>
	<p><i>Parameters: Turbidity</i></p> <p><i>Where it needs to be monitored: Water entering or leaving the UV reactor(s).</i></p>
	<p><i>Parameters: UV Intensity</i></p> <p><i>Where it needs to be monitored: The same point in the reactor as that used for validation.</i></p>
	<p><i>Parameters: Flow</i></p> <p><i>Where it needs to be monitored: Water entering or leaving the reactor(s).</i></p>
UVT monitor calibration/verification:	<p>UVT monitors used to demonstrate compliance with this rule must be:</p> <ul style="list-style-type: none"> • Calibrated in accordance with the instrument manufacturer's specified procedures and frequency or weekly whichever is more frequent. <p>Duty UVI sensors must be checked at least monthly against the reference sensor. If the difference between the two readings exceeds the manufacturer's specified limits, then the Duty UVI sensor shall be replaced.</p> <p>Reference UVI sensor must be standardised at least annually in accordance with Ultraviolet Disinfection Guidance Manual (USEPA 2006b) or other traceable procedure. Alternatively, after 12 months the supplier can use the reference sensor as a duty sensor and purchase a new standardised sensor for use as a reference sensor.</p>
UV validation:	<p>The equipment must be validated to meet the required reduction equivalent dose of 40 mJ/cm² using at least one of the:</p> <ul style="list-style-type: none"> • <i>Ultraviolet Disinfection Guidance Manual (USEPA 2006b).</i> • <i>DVGW Technical Standard W294 (DVGW 2006)</i> • <i>ÖNORM M5873 (Osterreichisches Normungsinstitut 2001).</i> • <i>NSF/ANSI 55 (NSF, ANSI nd) for Class A systems (for populations of up to 5000) – 3-log.</i>



Residence



- Traditionally the responsibility of the water supplier finished at the toby. Taumata Arowai are endeavoring to resolve two long term issues – Backflow devices and water meters.
- Backflow devices are specifically mentioned in the Water Services Act 2021 as backflow is the main drinking water killer in developed countries. There is a requirement for water supplier to have a backflow plan and Wellington Water has progressed this and sharing our progress with Taumata Arowai to inform their policy.
- Water Meters – Taumata Arowai has introduced ‘% of residence with meters’ as a measure of environmental performance as meters provide the best method for detecting network leakage. Wellington Water is conducting a ‘smart’ water meter study (supported by the Wellington Water Committee) to demonstrate these benefits.



Looking forward.



- While Taumata Arowai keeps themselves distant from the Three Waters Reform reform uncertainty is still reflected in documents out for consultation.
- Inter-regulator conflict may slow final versions of measures - MBIE (proxy economic regulatory) may voice an alternative opinion on economic measures being included in Taumata Arowai measures.
- Wellington Water is well placed to meet the increasing regulatory requirements.
- Areas of regulatory exposure are data quality assurance, internal operational audit, investigations, and assurance programs that inform risk.