Submission by

to the

HEALTH COMMITTEE

on the

WATER SERVICES BILL

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NZTECH SUBMISSION ON THE WATER SERVICES BILL – 2 March 2021

NZTech wishes to appear before the Select Committee.

INTRODUCTION

The New Zealand Technology Industry Association (NZTech) welcomes the opportunity to make a submission to the Health Committee on the Water Services Bill.

BACKGROUND

NZTech is the peak body for New Zealand's technology ecosystem and is a not-for-profit membership-based organisation.

Members are drawn from the private and public sector where we connect technology ecosystems, organisations and people to create a coordinated national voice for technology. NZTech also supports the New Zealand Tech Alliance, which comprises not-for-profit organisations representing 20 technology associations across the public and private sectors. Collectively, this represents over 1,500 organisations employing more than 100,000 New Zealanders.

Our unifying goal is to stimulate an environment whereby technology contributes to the economic, social, cultural and environmental wellbeing of New Zealanders.

DISCUSSION

NZTech supports the Water Services Bill with amendment.

The Bill is the second part of the most significant overhaul to the delivery of potable water in New Zealand and follows on from the 2020 Taumata Arowai - the Water Services Regulator Act. This Bill, furthermore, steps out of the Havelock North Drinking Water Inquiry, which found systemic failure across service provision, regulation and source protection.

The Bill, however, does little to assist up to one million New Zealanders dependent upon domestic self-supply. According to Massey University's Environmental Heath Intelligence New Zealand[1]:

- 83% of New Zealanders (4.1 million) received water from registered drinking-water supplies;
- 76% of New Zealanders (3.1 million) on registered supplies received drinking water that met all bacteriological, protozoal and chemical requirements;
- Small drinking-water supplies were less likely to meet protozoal and bacteriological standards than larger supplies; and
- 32 supplies issued permanent boil-water notices during the 2018–2019 reporting period, affecting 9,073 people.

Water is where technology could and should be playing a key role in reporting to and informing New Zealanders. NZTech's submission focusses deliberately on how the holistic use of technology could make a marked difference to informing water consumers; especially real time monitoring. The Stage 2 Report of the Havelock North Drinking Water Inquiry (2017) noted that larger organisations are better at deploying remote automated equipment using modern

[1] Massey University (2020). Access to safe drinking-water factsheet, Environmental Heath Indicators New Zealand (ehinz), Massey University.

communications technology[2]. In the past three years, there has been considerable technological advancement bringing this within the reach of domestic self-supply, matched with greater penetration of broadband.

While understandable that Bill drafters do not wish to be prescriptive, failing to signal technology misses whole of government policy synthesis while creating technological expectation. During the Havelock North Inquiry, Dr Dan Deere said at Paragraph 491, that even the most remote water source in Western Australia is continuously monitored by its water corporation. Real-time telemetry, smart sensor networks, the Internet of Things (IoT) and satellite technology is happening now. In New Zealand, Citycare, via Spark and Tussock Innovation, is using IoT to monitor its reservoirs 24/7 in real-time. Internationally, Wireless Sensor Network and IoT technology enables real time monitoring for water quality markers including Escherichia coli (E. coli).

This policy synthesis is made possible by Rural Broadband Initiative Phase Two and the Mobile Black Spots Fund (RBI2/MBSF). By the end of 2023, 99.8% of the population will have access to the Internet at speeds capable of supporting real-time telemetry. This represents greater reach than those who know the quality of water they consume. This is augmented by existing satellite broadband with SpaceX's Starlink Satellite service launching in New Zealand in late 2021. Starlink will offer data speeds from 50Mb/s to 150Mb/s; high-definition Netflix as a point of comparison requires 25Mb/s. The remaining population defined urban, some 87%, are covered by Ultra-fast broadband (UFB). It is also worth noting that in 2015, Havelock North became the first urban UFB centre in Hawke's Bay.

Another point NZTech wishes to make is in relation to land-use activities (s42) and its impact upon potable water supplies.

NZTech welcomes the government's continued investment in Landcare Research's Soil Mapping or digital S-Maps. In December 2020, $6.25 million was made available by the Ministry of Primary Industries to expand 1:50000 scale S-map by a further 1.5 million hectares. NZTech raises this in the context of this Bill because it forms part of conjunctive water management where agricultural technology (Agritech) will play a vital role in improved water outcomes. While S-map coverage stood at 36.6% of New Zealand and over two-thirds (67.3%) of New Zealand's multiple use land (LUC 1-4: horticulture, cropping, and intensive pasture systems), as of August 2020, it was less than a quarter[3] for all other land use classes (LUC 5-8: extensive pasture/forestry and conservation land); a large percentage of New Zealand's landcover. Even here, coverage is variable between regions so the purpose of this Bill would be enhanced if key knowledge gaps were to be bridged.

NZTech also asks the Committee to look to the horizon to make the Bill as forward-looking as possible. Given recent high profile network failures, this includes Subpart 7—Monitoring and reporting on environmental performance of wastewater and stormwater networks. NZTech believes technology combined with Artificial Intelligence could play a major role in locating, mapping and consistent condition scoring of assets, which are fundamental to the operation of society.

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[2] DIA (December, 2017). Report of the Havelock North Drinking Water Inquiry: Stage 2, Department of Internal Affairs, Wellington pp 23, 119, 187, 212 and 214.

[3] Landcare Research (2020). S-map and S-map Online.

RECOMENDATIONS

1. **Include the following in the Interpretation (Section 5):**

   iot means the internet of things as defined by ISO/IEC 20924:2018.
   wsn means wireless or wired services and interfaces supporting collaborative information processing in intelligent sensor networks as defined by ISO/IEC 20005:2013.
   s-map means S-Map Online by Manaaki Whenua - Landcare Research.

2. **Amend Duty to ensure end-point treatment (Section 28), by inserting "real-time" into subsection 2(b) after the word "verifiable" to read:**

   (b) require the owner of the premises to install, maintain, and test an end-point treatment device that incorporates a verifiable real-time monitoring system that complies with an acceptable solution or verification method under **section 49**.

3. **Incorporate Landcare Research S-Maps as part of Source water risk management plans (Section 42), by inserting "including s-map information" after activities in section 4, subclause a(i) to read:**

   (i) land-use activities including s-map information, potential sources of contamination, and other water users that could directly or indirectly affect the quality or quantity of the source of a drinking water supply; and

4. **Enhance reporting requirements at Suppliers to monitor source water quality (Section 43), by inserting "in real time" after Taumata Arowai in subsection 3:**

   (3) A drinking water supplier must report the results of the supplier's source water quality monitoring to Taumata Arowai in real time, and Taumata Arowai must provide regional councils with monitoring results annually.

5. **Enhance public confidence in potable water by amending Information sharing with local authorities (Section 44) to instead read "Information sharing with local authorities and consumers" and by inserting new subsection 5:**

   Information sharing with consumers

   (5) Taumata Arowai must provide consumers with accessible water quality information by publishing to an internet site and to mobile device applications, water quality and quantity information in real time or as near to real time as is practicable.

6. **Emphasise the role of technology by amending Taumata Arowai consultation requirements (Section 52), to include intelligent sensor networks while making provision for future technologies by inserting new clause (e) into subsection 1:**

   (e) standards for real-time water quality monitoring comprising WSN, IoT and future technologies.

7. **Improve public confidence in the reliability of wastewater and stormwater infrastructure by inserting new clause a(iv) into the Monitoring and reporting on environmental performance of wastewater and stormwater networks (Section 136)):**

   (iv) the extent, location and condition of wastewater and stormwater networks; and

8. **Facilitate the use of technology by amending the Publication of instruments (Section 195) to include intelligent sensor networks and providing for future technologies, by inserting new clause (e) and reordering existing clauses e, f and g, as clauses f, g and h:**

   (e) standards for real-time water quality monitoring comprising WSN, IoT and future technologies.