

Notifiable risks or hazards discussion document



Te Whakatauākī a Taumata Arowai

Ko te wai ahau
Ko ahau te wai
He whakaaturanga tātou nō te wai
Ko te ora te wai ko te ora o te tangata
He taonga te wai me tiaki
Ko wai tātou
Ko wai tātou

I am water, water is me
We are reflections of our water
The health of water is the health of the people
Water is a treasure that must be protected
We are water
Water is us



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Introduction

Taumata Arowai is the water services regulator for Aotearoa New Zealand, working to ensure everyone has access to a safe and reliable supply of drinking water every day. To help realise this goal, it is important that Taumata Arowai is aware of issues that could affect the safety of drinking water being supplied to people and communities, its sufficiency, and its acceptability in terms of its aesthetic properties (such as taste, clarity and odour).

The Water Services Act 2021 (the Act), includes several notification requirements. Drinking water suppliers must notify Taumata Arowai when:

- the drinking water they supply is or may be unsafe (s 21(2)(b))
- the drinking water they're supplying does not comply with the Drinking Water Standards (s 22(2)(b))
- they can't provide a sufficient quantity of drinking water (s 26(1)(a)).

The Act also requires drinking water suppliers to immediately notify Taumata Arowai when they become aware of a 'notifiable risk or hazard' (s 35(2)(b)). These are declared by Taumata Arowai and identify risks or hazards that relate to or affect the supply of drinking water. Taumata Arowai is yet to declare any notifiable risks or hazards. The purpose of this consultation is to seek feedback on a proposed list of notifiable risks or hazards.

What are notifiable risks or hazards?

Notifiable risks or hazards are events that have the potential to affect the safety, sufficiency, compliance and/or acceptability (aesthetic values – like taste, clarity, and odour) of drinking water.

Examples of this might be where an absence of monitoring results means a breach of the Drinking Water Standards has gone undetected, or when there is some uncertainty regarding the impact of an incident or event on drinking water safety (i.e., the drinking water supplier is legitimately unsure whether the impact is so severe as to make the drinking water unsafe).

Notifiable risks or hazards are another mechanism to ensure Taumata Arowai and public health authorities are informed of events that can affect the supply of safe drinking water.

The notifiable risks or hazards proposed in Table 1 (below) are intended to achieve one or more of the following objectives:

1. To support a risk management approach by requiring suppliers to identify, notify, and respond to a wide range of risks or hazards that could affect their drinking water supply. The key existing notification requirements within the Act are focused on selected aspects of drinking water rather than broader factors that have the potential to affect or relate to the supply of drinking water.
2. To ensure that Taumata Arowai and medical officers of health are aware of current and emerging risks that have the potential to impact drinking water safety, compliance or sufficiency.
3. To ensure Te Mana o te Wai is given effect to when certain risks or hazards are identified.
4. To ensure that Taumata Arowai is aware of changes which may have a negative impact on the health and wellbeing of source waters.
5. To ensure that Taumata Arowai can collect data on risks or hazards with the potential to impact drinking water supplies.
6. To ensure drinking water suppliers notify Taumata Arowai of the most serious risks or hazards.
7. To highlight to drinking water suppliers the importance of certain risks or hazards.

Principles of drinking water safety

A key recommendation from the Government's Havelock North Drinking Water Inquiry was that drinking water suppliers should apply the six principles for drinking water safety. In order, these are:

- Principle 1: A high standard of care should be embraced.
- Principle 2: Protection of source water is of paramount importance.
- Principle 3: Maintain multiple barriers to contamination.
- Principle 4: Change precedes contamination.
- Principle 5: Suppliers must own the safety of drinking water.
- Principle 6: Apply a preventative risk management approach.

The proposed list of notifiable risks or hazards in Table 1 (below) has been developed with these principles, and the objectives identified above, in mind.

Responding to notifiable risks or hazards

Drinking water suppliers must undertake certain actions when they become aware of a notifiable risk or hazard. Specifically, drinking water suppliers must:

- take immediate action to ensure that public health is protected
- notify Taumata Arowai of the notifiable risk or hazard in an approved form
- investigate the source or the cause of the notifiable risk or hazard
- take action to prevent, reduce, or eliminate the risk or hazard
- take all practicable steps, to the satisfaction of Taumata Arowai, to advise affected consumers and drinking water suppliers about the notifiable risk or hazard (e.g., issue a boil water notice), and
- identify and implement measures required to ensure that the notifiable risk or hazard does not reoccur.

When Taumata Arowai receives a notification from a drinking water supplier, it must notify the relevant medical officer of health.

Te Mana o te Wai

Te Mana o te Wai is a concept all New Zealanders can adopt. Section 14(2) of the Act requires Taumata Arowai and drinking water suppliers performing a function, duty or power under the Act must give effect to Te Mana o te Wai to the extent it applies. Te Mana o te Wai requires us to provide for and protect the health and mauri of water as the first priority, followed secondly by providing for human health needs (such as safe drinking water) and thirdly providing for other uses so long as these do not degrade the mauri of the water. We have considered Te Mana o te Wai in the development of the proposed list of notifiable risks or hazards and it is one of the objectives identified above. We may refine the list in the future if there are opportunities to further ensure all relevant aspects of Te Mana o te Wai are identified and addressed appropriately. Any future changes will be subject to engagement and consultation with relevant stakeholders, in accordance with the Act.

Proposed notifiable risks or hazards

Taumata Arowai proposes to declare nine notifiable risks or hazards. These proposed notifiable risks or hazards are listed in Table 1, along with the rationale for their inclusion, examples of each, and notes.

Relationships between the proposed notifiable risks or hazards, the relevant drinking water safety principles, and the objectives identified above, are shown in the right-hand column of the table.

Table 1: Proposed notifiable risks or hazards

Proposed notifiable risk or hazard	Rationale, examples, and notes
<p>1. Changes to source water risks or hazards</p> <p>Monitoring results, or other observations, relating to source water(s) that indicate there has been an unexpected change and/or that identify a risk or hazard that could affect the safety, compliance or sufficiency of drinking water supplied to consumers.</p> <p>These monitoring results and observations may relate to a single point in time or relate to changes happening over a period of time.</p> <p>Though there is an existing obligation to notify Taumata Arowai when there is an imminent risk of supplying insufficient quantities of drinking water, Taumata Arowai is also interested in longer term impacts on source waters that may jeopardise a drinking water supplier's ability to provide sufficient drinking water (e.g., a drought).</p>	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> • Relates to objectives 1, 2, 3, 4, 5 and 7. • Relates to the fundamental principles of drinking water safety 2 and 4. <p>Examples</p> <p>Examples include, but are not limited to:</p> <ul style="list-style-type: none"> • any chemical or radiological determinand in source or raw water equivalent to or greater than 100% of the MAV. • salination of a source water as indicated by the detection of chloride at greater than 250mg/L, total dissolved solids greater than 500mg/L or conductivity greater than 2500µS/cm. • insufficient source water available to allow for the extraction of normal quantities from that source. • unexpected change in turbidity, pH or other physicochemical determinand that can have an impact on drinking water treatment. • identification of a pathogenic microorganism or hazardous chemical which is not covered by the Water Services (Drinking Water Standards for New Zealand) Regulations 2022. • detection of cyanobacteria when no controls for cyanobacteria/cyanotoxins have been identified in a Drinking Water Safety Plan, or detection of cyanobacterial mats or blooms, in sources of drinking water, that have not been notified to Taumata Arowai previously. • where the supplier becomes aware of an incident or event with the potential to impact treatment processes or the quality of drinking water e.g., spill or release of chemicals or organic material (leachate, milk), increase in turbidity or change in pH. • where trend analysis indicates that source water quality is changing over time in a manner likely to: <ul style="list-style-type: none"> • adversely impact a treatment process which may result in insufficient, non-compliant, and/or unsafe water being supplied to customers within the next six-months or

Proposed notifiable risk or hazard	Rationale, examples, and notes
	<ul style="list-style-type: none"> • cause the source to become unsuitable for drinking water purposes within five years. • Where trend analysis indicates a drinking water supplier won't be able provide sufficient drinking water within the next six months. <p>Notes</p> <ul style="list-style-type: none"> • These notifications may also highlight risks to other suppliers or domestic self-supplies extracting from the same source. • Changes to source water quality are not notifiable under s 21 or s 22 in and of themselves, as these relate to drinking water. • Sudden changes in source water can make source water unsuitable for treatment plants. An example would be increased turbidity due to tree-felling in the catchment, which can impact on water supplies for prolonged periods. • Changes to source water quality will have implications for Te Mana o te Wai.
<p>2. Failure to comply with an assurance or monitoring rule or an Acceptable Solution requirement</p> <p>Failure to comply with an assurance rule or a monitoring rule in the Drinking Water Quality Assurance Rules, or an Acceptable Solution requirement.</p>	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> • Relates to objectives 1, 2, 3, 4, 5 and 7. • Relates to fundamental principles of drinking water safety 1, 4 and 6. <p>Notes</p> <p>These failures could mean that drinking water is or may be unsafe and are therefore notifiable under s 21.</p> <p>To remove any doubt, this notifiable risk includes rules where the target must be achieved for at least 95% of each day, and requirements relating to the calibration and verification of monitoring equipment.</p>
<p>3. Microbiological contamination of drinking water</p> <p>Microbiological testing of drinking water confirms:</p> <ul style="list-style-type: none"> • the exceedance of a maximum allowable value (MAV) for a microbiological determinand • the presence of pathogenic microorganisms or • total coliforms detected at above 10MPN/100mL or 10cfu/100mL. 	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> • Relates to objectives 1, 2, 3, 4, 6 and 7. • Relates to fundamental principles of drinking water safety 1 and 4. <p>Notes</p> <p>Microbial contamination of a drinking water supply is almost always the most serious concern as it can result in a rapid outbreak of illness among consumers. The presence of <i>E. coli</i> indicates the possible presence of pathogenic microorganisms.</p>

Proposed notifiable risk or hazard	Rationale, examples, and notes
	<p>While it is acknowledged there is some overlap with the requirements to notify when unsafe drinking water is being supplied and when a drinking water standard has been exceeded, as required under sections 21(2) and 22(2) respectively, this notifiable hazard has been included to reflect the seriousness of these types of events.</p> <p>Making high total coliform detections notifiable will help ensure that suppliers investigate the source of the contamination and take appropriate corrective actions and also provide data on the frequency of high level total coliform contamination events across the country.</p>
<p>4. Deliberate or reckless actions that may adversely impact the safety or sufficiency of drinking water</p> <p>Any deliberate or reckless action by any person that may adversely impact the safety and sufficiency of drinking water.</p>	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> • Relates to objectives 1, 2, 3, 4, 5 and 7. • Relates to fundamental principles of drinking water safety 1, 3 and 4. <p>Examples</p> <p>Examples include, but are not limited to:</p> <ul style="list-style-type: none"> • unauthorised addition of substances or materials to source water, raw water or drinking water within a drinking water supply system. • unauthorised access to treated water storage tanks or reservoirs. • unauthorised access to a drinking water supply using a standpipe or other method, which could result in contamination of drinking water. • unauthorised by-passing of backflow prevention devices designed to protect a drinking water distribution system. • physical vandalism of drinking water supply infrastructure. • cyberattacks intended to damage, destroy, or interfere with computer systems that control treatment processes, drinking water distribution systems, data management systems or any other aspect of drinking water service delivery. <p>Notes</p> <p>It is important that Taumata Arowai is notified of these events in a timely manner for three reasons. The first is to help ensure any public health risks associated with the action(s) are managed appropriately and that supply is maintained. The second is to enable Taumata Arowai to exercise compliance and enforcement powers in relation to people who contaminate either raw water (water abstracted from a source water) or drinking water in appropriate circumstances. Finally, where there has been deliberate action by third party, e.g., a cyberattack, Taumata Arowai may want to ensure that other suppliers are aware of the increased threat and have suitable controls in place.</p>

Proposed notifiable risk or hazard	Rationale, examples, and notes
	<p>Contamination or loss of water would also have a negative impact on the health and wellbeing of source waters, from a Te Mana o te Wai perspective.</p>
<p>5. Infrastructure failure</p> <p>Any significant infrastructure failure affecting any part of the supply that, within the following 48 hours, is likely to affect the safety, compliance or the sufficiency of drinking water being supplied.</p>	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> • Relates to objectives 1, 2, 3, 4, 5 and 7. • Relates to fundamental principles of drinking water safety 4 and 6. <p>Examples</p> <p>Examples include, but are not limited to:</p> <ul style="list-style-type: none"> • loss of access to source water (e.g., because of a pump failure, pipe failure, intake collapse, etc.). pump failure or damage to mains that results in loss of pressure in the distribution system. • failure of chemical dosing system(s). • catastrophic failure of a programmable logic controller (PLC). • failure of an information management system which affects the ability to monitor, collect or store water system performance data. • loss of raw or drinking water from a reservoir or storage tank. <p>Notes</p> <p>The purpose of this notifiable risk is to capture significant infrastructure issues at water treatment plants, reservoirs, or distribution systems.</p> <p>In addition to ensuring public health risks are managed appropriately, and supply is maintained, this notifiable risk will help Taumata Arowai identify infrastructure issues that may have relevance nationally.</p>
<p>6. Lack of capacity or capability</p> <p>Where the safety, compliance, or sufficiency of a supply (or supplies) may be at risk due to insufficient staff with the appropriate skills, knowledge, and experience.</p>	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> • Relates to objectives 1, 2, 3, 4, 5 and 7. • Relates to fundamental principles of drinking water safety 1 and 5. <p>Notes</p> <p>Having an appropriate number of suitably qualified operators is a critical aspect of producing safe drinking water. Therefore, drinking water suppliers who have deficiencies in operator capability or capacity, for any reason, are at an increased risk of supplying unsafe drinking water to their consumers.</p>

Proposed notifiable risk or hazard	Rationale, examples, and notes
<p>7. Change to a drinking water supply</p> <p>A change to a drinking water supply that does not reflect its registration details or planned mode of operation or when a mitigation measure, implemented in response to an incident or event, is removed or discontinued.</p>	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> • Relates to objectives 1, 2, 3, 4, 5 and 7. • Relates to fundamental principle of drinking water safety 4. <p>Example</p> <p>Examples include but are not limited to:</p> <ul style="list-style-type: none"> • by-passing a treatment process • supplementing a supply with drinking water transported in from another supply • providing drinking water from a tanker or tank rather than through the distribution system • changes implemented in response to a rāhui being declared • when a mitigation measure is removed or discontinued after an incident or event, such as: <ul style="list-style-type: none"> • a drinking water advisory • chlorination of a supply that has been granted an exemption from the requirement to provide residual disinfection • increased sampling or monitoring. <p>Notes</p> <p>Information about changes to supplies, including temporary changes, is important in building a picture of water services across the country. For example, some drinking water suppliers were affected by drought in early 2020, with some having to augment their drinking water supplies. However, since there was no notification requirement, there was only limited data to help quantify the impact on drinking water supplies or the associated risks.</p> <p>Changes to a drinking water supply are important. However, in the past the regulator was often not aware of these changes unless they were in response to incident that suppliers were required to notify.</p> <p>There is currently no express requirement for suppliers to notify Taumata Arowai when a mitigation measure implemented in response to an incident is removed. This means that Taumata Arowai may not have an accurate understanding of the ongoing risk.</p> <p>Changes are likely to have implications for Te Mana o te Wai, including the transportation of water from one region to another.</p>

Proposed notifiable risk or hazard	Rationale, examples, and notes
<p>8. Unexpected aesthetic changes</p> <p>Where there is an unexpected change in the taste, odour or appearance of drinking water.</p>	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> Relates to objectives 1, 2, 3, 4 and 7. Relates to fundamental principle of drinking water safety 4. <p>Examples</p> <p>Examples include but are not limited to:</p> <ul style="list-style-type: none"> Taste and odour issues associated with geosmin and 2-Methylisoborneol (2-MIB). Discolouration and possible staining associated with manganese <p>Notes</p> <p>People will often not drink water with significant aesthetic issues, even when it is safe and may instead source their drinking water from less-safe sources (e.g., untreated rainwater). A new aesthetic issue may be indicative of other issues in the drinking water supply system.</p> <p>Aesthetic issues are often identified by consumers and are likely to generate complaints and media attention.</p> <p>Some determinands, such as manganese and iron, can make drinking water unacceptable to consumers and may not be notifiable as the Maximum Acceptable Value (MAV) is significantly higher than the Aesthetic Value (AV) (e.g., for manganese) or there is no MAV (e.g., for iron).</p>
<p>9. Supply issues affecting critical equipment and consumables</p> <p>Where a drinking water supplier anticipates or experiences an unexpected shortage, or unexpected delay in the delivery of equipment, chemicals or other consumables critical to the operation of their drinking water supply/supplies due to a supply chain issue.</p>	<p>Relationships with objectives and fundamental principles of drinking water safety</p> <ul style="list-style-type: none"> Relates to objectives 1, 2, 3 and 6. Relates to fundamental principle of drinking water safety 1. <p>Notes</p> <p>Drinking water supplies rely on equipment, treatment chemicals and other consumables to ensure a sufficient supply of safe, compliant drinking water. Recent global events have demonstrated weaknesses in a number of supply chains. More locally, the closure of the Marsden Point refinery has contributed to a national shortage of food grade carbon dioxide.</p> <p>The purpose of including this notifiable risk is to ensure that Taumata Arowai can respond early and work with relevant agencies to help mitigate any supply chain issues. This notifiable risk would not apply to one-off, local delivery delays.</p>

How will Taumata Arowai receive notifications?

Our web-based portal Hinekōrako will be modified to receive notifications of notifiable risks or hazards from drinking water suppliers.

This means that drinking water suppliers will be able to notify Taumata Arowai of a notifiable risk or hazard in the same way as they notify Taumata Arowai when a Maximum Acceptable Value (MAV) in the Drinking Water Standards has been exceeded.

Notifying Taumata Arowai of a notifiable risk or hazard will not discharge drinking water suppliers other notification obligations.

There may be instances where an event triggers more than one notification requirement (e.g., if the event is associated with a breach of a drinking water standard, this must also be notified to Taumata Arowai). When notifying us via Hinekōrako, drinking water suppliers will need to select each notification requirement that applies.

Drinking water suppliers should also note that the duty to supply safe drinking water at a sufficient quantity will remain with the drinking water supplier.

Next steps

Taumata Arowai will consider the feedback received in relation to the proposed notifiable risks or hazards and the consultation questions below.

We will then determine whether to declare a final list of notifiable risks and hazards by notice, or whether further consultation on revised notifiable risks and hazards is required.

Drinking water suppliers will be advised of any final list of notifiable risks and hazards.

We will also provide guidance material and the opportunity for suppliers to attend webinars before declared notifiable risks or hazards come into effect, so suppliers have time to advise their staff and to establish appropriate procedures for notifying Taumata Arowai when required.

Appendix 1: Consultation questions

1. Do you agree with including 'Changes to source water risks or hazards' in the list of notifiable risks or hazards? If not, why not?
2. Do you agree with including 'Failure to comply with an assurance or monitoring rule or an Acceptable Solution requirement' in the list of notifiable risks or hazards? If not, why not?
3. Do you agree with including 'Microbiological contamination of drinking water' in the list of notifiable risks or hazards? If not, why not?
4. Do you agree with including 'Deliberate or reckless actions that may adversely impact the safety or sufficiency of drinking water' in the list of notifiable risks or hazards? If not, why not?
5. Do you agree with including 'Infrastructure failure' in the list of notifiable risks and hazards? If not, why not?
6. Do you agree with including 'Lack of capacity or capability' in the list of notifiable risks and hazards? If not, why not?
7. Do you agree with including 'Temporary change to a supply' in the list of notifiable risks and hazards? If not, why not?
8. Do you agree with including 'Unexpected aesthetic changes' in the list of notifiable risks and hazards? If not, why not?
9. Do you agree with including 'Supply issues affecting critical equipment and consumables' in the list of notifiable risks and hazards? If not, why not?
10. Do you think there are other ways for Te Mana o te Wai to be considered or given effect to in the proposed list of notifiable risks or hazards?
11. Are there any other events or scenarios you think should be included as notifiable risks or hazards? If so, what are they and what is the rationale for their inclusion?
12. Do you have any views on the number of proposed notifiable risks or hazards?
13. Do you have any further comments on the proposed list of notifiable risks or hazards?