



Proposed national wastewater environmental performance standard

Discharge to water

The opportunity

Much of New Zealand's public wastewater infrastructure is 30 to 40 years old and needs to be upgraded or replaced.

To do this critical work, a resource consent is generally required. Approximately 60% of public wastewater treatment plants will need to renew a wastewater consent over the next decade. So, now is the time to establish nationally consistent standards to lift wastewater performance across the country and make consenting less complicated and costly.

At the moment, the wastewater consenting process is expensive and time consuming for the local councils that apply for consents, the regional councils that analyse applications and issue consents, and the communities that fund this essential infrastructure.

Based on case studies, it's estimated that councils could save up to 40% in consenting costs under the proposed standards – potentially saving them hundreds of thousands of dollars – while protecting the health of the public and the environment.

Focus on 'discharge to water' consents

Proposed standards cover the most common wastewater management activities, so that they're focused on the areas where they'll bring the biggest benefits.

There are currently 202 wastewater treatment plants that have resource consents allowing them to discharge to water.

The proposed national standard for discharge to water establishes consistent levels of common contaminants permitted in treated wastewater that's discharged into specific waterbodies and consistent monitoring and reporting requirements.

This consistency gives infrastructure owners, such as councils and the communities they serve, certainty about requirements. This helps to make it easier, faster and more cost-effective for them to plan, design and operate wastewater infrastructure.

What this proposed standard covers

This proposed standard:

- categorises waterbodies (e.g. lakes, rivers, ocean) based on their sensitivity
- proposes treatment requirements for key contaminants found in treated wastewater, tailored to the category of waterbody, set at a level to protect the health of communities and the environment
- proposes requirements for monitoring to ensure treatment requirements are met, and reporting to regional councils, the public and the Water Services Authority takes place
- includes tailored treatment requirements for small wastewater treatment plants, which have simpler systems and a smaller impact on the environment
- will link to a requirement in the Resource Management Act 1991 for a 35-year consent to be issued, giving local councils the certainty they need to do long-term wastewater management and investment planning.

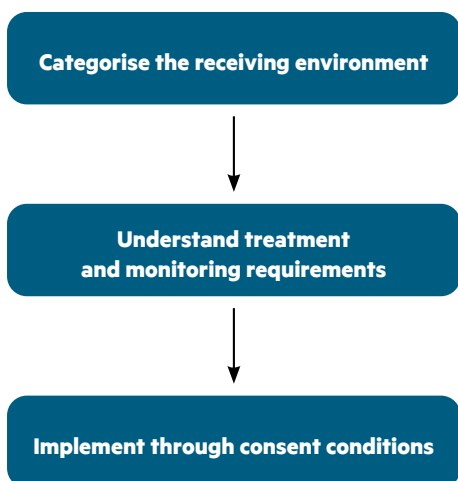
Proposed standards would only apply to public networks, which are primarily owned and operated by local councils. They do not apply to privately-owned wastewater treatment networks or septic tanks.



Water Services Authority
Taumata Arowai

taumataarowai.govt.nz

How this proposed standard works



Step 1: Categorise the receiving environment (aka determine the type of waterbody)

Different receiving environments (waterbodies) have different characteristics. These characteristics (e.g. salt or fresh water, how fast the water moves) affect the sensitivity of the water body, together with the environmental impact of any treated wastewater that's discharged into it and any related public health risks.

Under this proposed standard, treated wastewater discharged in places with higher sensitivity need to have a higher treatment level to appropriately manage any potential risks to the environment or public health. Where there is very low environmental or public health risk, the requirements would be lower, reducing the cost of wastewater treatment.

This standard proposes tailored treatment requirements for seven categories of waterbody.

1. Lakes
2. River or stream with high sensitivity
3. River or stream with moderate sensitivity
4. River or stream with low sensitivity
5. Estuaries
6. In-shore coastal waters
7. Open ocean

More information on these categories, and the science that informs them, is available in the full consultation discussion document.

Step 2: Understand treatment and monitoring requirements

This standard proposes limits for the contaminants most commonly found in treated wastewater. They are set out below.

Contaminant/measure	Why treatment limits are proposed
Carbonaceous biochemical oxygen demand (cBOD₅)	<p>This is a measure of how much oxygen is needed to break down any organic material in wastewater. It's important for determining how effective wastewater treatment processes are.</p> <p>High levels of cBOD₅ can limit the oxygen available in a waterbody. Low oxygen levels can harm aquatic life.</p>
Total suspended solids (TSS)	<p>TSS are particles floating in the water. They're an important, visible indicator of water quality.</p> <p>Suspended solids can absorb light. Reduced light can increase water temperature and decrease oxygen levels, negatively impacting aquatic life.</p>
Nutrients (total nitrogen and total phosphorous)	<p>Nitrogen and phosphorus help plants grow. But if levels of these nutrients in water are too high, they can increase plant and/or algae growth, over time reducing water clarity and oxygen levels.</p> <p>This lack of oxygen can reduce the numbers of aquatic animals (e.g. shellfish and other invertebrates, as well as fish).</p> <p>In a scientific context, nitrogen can be measured in different ways. So can phosphorous. This proposed standard intentionally includes 'total nitrogen' and 'total phosphorous', so that it's clear that the measure includes all forms of nitrogen or phosphorous in treated wastewater. This makes measurement consistent and straightforward.</p>
Ammonia	<p>Ammonia can reduce oxygen levels in water, resulting in reduced biodiversity and declining fish populations.</p>
Enterococci	<p>Enterococci is bacteria that occur naturally in the intestines of humans and animals. It's a useful indicator of faecal contamination in salt water.</p>
E. coli	<p><i>E. coli</i> is a type of bacteria commonly found in the intestines of warm-blooded animals, including people.</p> <p>They're a useful indicator of whether bacteria, viruses or protozoa (single-celled parasites, like cryptosporidium and giardia) that can make people sick are present in soil and freshwater.</p>

Proposed limits for each of these depends on the category of waterbody that treated wastewater is discharged to:

Contaminant/measure	Measurement approach	Lakes and wetlands	Rivers and streams (low dilution)	Rivers and streams (moderate dilution)	Rivers and streams (high dilution)	Estuaries	Low energy coastal	Open ocean
Carbonaceous Biochemical Oxygen Demand (CBOD₅)	Annual median	15 mg/L	10 mg/L	15 mg/L	20 mg/L	20 mg/L	50 mg/L	Not applicable
Total Suspended Solids (TSS)	Annual median	15 mg/L	10 mg/L	15 mg/L	30 mg/L	25 mg/L	50 mg/L	Not applicable
Total Nitrogen	Annual median	10 mgN/L	5 mgN/L	10 mgN/L	35 mgN/L	10 mgN/L	10 mgN/L	Not applicable
Total Phosphorus	Annual median	3 mgP/L	1 mgP/L	3 mgP/L	10 mgP/L	10 mgP/L	10 mgP/L	Not applicable
Ammoniacal-nitrogen (ammonia)	Annual 90th percentile	3 mgN/L	1 mgN/L	3 mgN/L	25 mgN/L	15 mgN/L	20 mgN/L	50 mgN/L
E. coli	Annual 90th percentile	6,500 cfu/100mL	1,300 cfu/100mL	6,500 cfu/100mL	32,500 cfu/100mL	Not applicable	Not applicable	Not applicable
Enterococci	Annual 90th percentile	Not applicable	Not applicable	Not applicable	Not applicable	2,000 cfu/100mL	4,000 cfu/100mL	40,000 cfu/100mL

- Contaminants are listed as 'not applicable' when they don't apply, or impacts are expected to be very low, for a specific category of waterbody.
- cfu = colony forming unit. It estimates the number of bacteria that have the potential to reproduce and increase overall levels of bacteria that could make people sick.
- Annual median: In statistics, the median is the middle number when a group of numbers are sorted in ascending or descending order. So to calculate an annual median: you would take data collected over a year, arrange the numbers in order from lowest to highest (or vice versa – the results would be the same) and the annual median would be the number in the very middle of that list.
- Annual 90th percentile: a value in a dataset that's greater than 90% of the other values. It means that 90% of the data falls below this point, while 10% is above it.

Consistent monitoring and reporting requirements are also proposed as part of this standard. This would ensure that data is available to identify what's working and opportunities to improve.

Step 3: Implement requirements through resource consent conditions

The requirements in this standard will be reflected in wastewater consent conditions. For the contaminants listed in this standard, the regional councils that regulate wastewater would not be able to require higher or lower levels of treatment.

The list above covers the most common contaminants in treated wastewater. Those that aren't included may be less common or sufficient evidence is currently unavailable to inform limit setting. For contaminants that aren't covered by this proposed standard (e.g. PFAS or heavy metals like iron and aluminium), the existing resource management consenting process will apply.

We will develop guidance to support the implementation of all four standards.

Tailored approach for small wastewater treatment plants

About half of New Zealand's wastewater plants serve communities of 1,000 people or fewer. These smaller plants often have oxidation ponds that use passive treatment methods and/or are located in isolated places that do not have power.

This standard proposes simplified treatment requirements for plants that meet the definition of a 'small wastewater treatment plant', as they have less complex systems and a lower impact on the environment than treatment plants that serve larger towns and cities.

This is consistent with the tailored approach taken when developing all wastewater standards.

How 'small wastewater treatment plant' is defined under this proposed standard

Under the proposed standard a 'small wastewater treatment plant' is defined using the carbonaceous biochemical oxygen demand (cBOD₅) measure of untreated wastewater that flows into the treatment plant (cBOD₅ is a measure of how much oxygen is needed to break down any organic material in wastewater).

If wastewater entering an existing plant has a mean annual cBOD₅ measure of 85 kilograms per day or less, it would meet the definition of a small wastewater treatment plant and simplified requirements would apply.

We've proposed defining small plants using this cBOD₅ measure, rather than number of people served, because the population served by a plant can change due to things like seasonal tourism.

Proposals for treatment limits for small wastewater treatment plants

- There are no treatment requirements proposed for total nitrogen or phosphorous. The impact small wastewater treatment plants have on nitrogen and phosphorous load in catchments tends to be small.
- This consultation seeks feedback on whether treatment requirements for other contaminants could be less stringent.
- Specific operational requirements could apply to small plants as part of consent conditions e.g. regular oxidation pond desludging.

Find out more, and have your say

Visit korero.taumataarowai.govt.nz/regulatory/wastewater-standards to find out more and provide feedback.

There you'll find:

- more resources like this
- the full consultation discussion document, which contains detailed information on what's proposed

- the technical reports and research that helped to inform proposed standards
- how to submit your feedback online, via email, or via post.

Consultation closes at **5pm on Thursday, 24 April 2025** (note that Friday 25 April is Anzac Day).

If you have questions about the proposed standards, please contact us at: korero@taumataarowai.govt.nz