Water Services Authority
Taumata Arowai

Consultation on proposed wastewater environmental performance standards

Discussion document

Minor clarifications made on pages 18 and 21 – 11 March 2025 update

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1. How to make a submission

The Water Services Authority – Taumata Arowai (**the Authority**), on behalf of the Minister of Local Government, is consulting on a set of proposed wastewater environmental performance standards ('wastewater standards') under section 138 of the Water Services Act 2021. We welcome feedback on the proposals to inform the first set of national wastewater standards and how they are implemented.

This discussion paper includes some questions (set out in boxes) you may like to respond to in your submission. **Appendix Three** contains the full list of questions. You are invited to answer any or all the questions included. Where possible, please include evidence to support your views (for example, references to facts and figures, or relevant examples).

Timeframes

The consultation is open for 2 months from 25 February 2025. It closes at **5.00pm on 24 April 2025**. You can make a submission via:

- our online survey form, or
- sending your responses to kōrero@taumataarowai.govt.nz or mailed to Level 2, 10 Brandon Street, PO Box 628, Wellington 6140, New Zealand.

Please include your name, or the name of your organisation and contact details in your submission.

You will find all the information on this consultation at: korero.taumataarowai.govt.nz/regulatory/wastewater-standards

Please direct any questions you may have in relation to the submission process to: kōrero@taumataarowai.govt.nz.

Your feedback will inform the final wastewater standards and how they are implemented

The Authority welcomes feedback on the proposals in this document. This consultation document outlines the first set of proposed wastewater standards. Once submissions have been received, a final proposal will be developed for the Minister of Local Government's consideration. The final wastewater standards will be set in regulations made by the Governor-General by Order in Council, on the advice of the Minister.

The wastewater standards are expected to be set in mid- to late-2025. This will follow enactment of the Local Government (Water Services) Bill.

2. Executive summary

New Zealand's publicly-owned wastewater infrastructure is facing a significant challenge. A significant proportion was built around 30-40 years ago, and upgrades or renewals are required for many wastewater treatment plants and networks. Population growth and urban development is driving the need for infrastructure renewals, with larger communities and housing areas requiring treatment plants and networks with significantly greater capacity than they currently have.

In the next decade, 57 percent of public wastewater network plant infrastructure will require reconsenting, and of this number, approximately 20 percent of plants are currently operating on expired resource consents. The resource management system can be challenging for network owners and communities. Across the country, resource consents are developed, assessed and monitored largely on a case-by-case basis. This means the consenting process can be lengthy, uncertain and information intensive. Upgrading wastewater infrastructure is resource intensive and a significant investment for councils, particularly with many facing affordability challenges and competing demands on how rates should be spent. This directly affects communities throughout New Zealand in terms of higher rates, increased public health risks and the impact on the environment.

National or state-level wastewater environmental performance standards ('**wastewater standards**') combined with transparent public reporting, are a common feature in many jurisdictions that New Zealand commonly compares itself to, such as the United Kingdom, the European Union, Australia and Canada.

This discussion document proposes New Zealand's first set of wastewater standards. These standards will set nationally consistent requirements for all wastewater networks and operators through resource consents as these are renewed or issued for new wastewater infrastructure. Wastewater standards will:

- support environmental outcomes,
- drive cost and time efficiencies,
- support owners of networks to better plan for the cost of infrastructure, and
- save time for territorial authorities as owners of the public infrastructure, and regional councils as regulators.

The proposed wastewater standards are expected to deliver significant cost-efficiencies that may include reduced consenting costs of up to 40 percent based on case study examples. This includes reductions in costs associated with the consenting process such as staff time, technical assessments, feasibility assessments, legal costs and consultation and engagement costs.

Reductions to capital upgrade costs and ongoing operating costs such as staff training and maintenance can also be expected. The costs savings on an individual plant will depend on specific circumstances, such as the type or size of the plant, treatment processes, and options for where the plant discharges. However, over time, further costs savings are expected as materials are standardised, and modular plant options are available that comply with wastewater standards.

Wastewater standards will provide increased certainty to territorial authorities as owners of networks so they can better plan for the cost of infrastructure, and leverage cost efficiencies in designing, procuring and operating wastewater treatment plants. This will support territorial authorities in developing long-term plans in future.

The Local Government (Water Services) Bill proposes 'infrastructure design solutions' that will be used as part of the second implementation phase for wastewater standards. These instruments will support network operators to meet wastewater standards and provide design and operating requirements for modular wastewater treatment plants.

Infrastructure design solutions will result in faster consenting processes and potentially significant cost savings, and over time will enable network operators to standardise the design and procurement of infrastructure, and enable modular, off-the-shelf solutions to be installed.

What does this package of wastewater standards cover?

The initial package of proposed standards covers areas where resource consents are commonly sought for wastewater treatment plants, specifically:

- discharges to water for a range of parameters and receiving environments, alongside a tailored standard for small wastewater treatment plants,
- discharges to land,
- beneficial reuse of biosolids, and
- arrangements for wastewater network overflows and bypasses of wastewater treatment plants.

The proposed standards do not cover the following matters:

- discharges to air from wastewater treatment plants,
- recycled treated wastewater for non-potable use,
- contaminants of emerging concern such as endocrine disruptors, PFAS (per- and polyfluoroalkyl substances) and heavy metals, and

- arrangements for onsite wastewater treatment systems (such as septic tanks) or community owned and operated schemes.

These areas will continue to be regulated through the existing resource consenting process, pending future wastewater standards that address them. To ensure standards remain fit-for-purpose, the Authority will establish an ongoing work programme to evaluate how standards have been implemented and to consider where additional standards may be appropriate or whether amendments are necessary.

How will wastewater standards be implemented?

Wastewater standards will primarily be implemented through future resource consents for public wastewater treatment plants and networks as they come up for renewal. Wastewater standards must be implemented as part of any new resource consent for existing plants and networks, as well as consents for new wastewater infrastructure. The certainty generated by wastewater standards will streamline these consent processes and decisions. Any matters not covered by wastewater standards will continue to be set through the existing resource consent process as they are now.

Regional councils remain the regulator for catchments, including wastewater treatment plants, networks and their discharges, and will have a critical role in implementing and ensuring compliance with wastewater standards through resource consents. Consistent with this role, regional councils will implement the wastewater standards through consent conditions. The Authority will collect information through regular network environmental performance reporting and summarise it annually in a public-facing report, to provide a further layer of transparency about plant and network environmental performance.

Decisions about wastewater arrangements, such as where plants are located and discharge to, will continue to sit with territorial authorities and their communities. Territorial authorities will, for example, continue to consult with their communities about their preferences under local government legislation, and apply to regional councils for new consents for wastewater treatment plants or networks in a way that reflects community preferences.

Relationship with Local Water Done Well

Wastewater standards are a core aspect of Local Water Done Well, the Government's approach to address long-standing water infrastructure challenges. Wastewater standards are intended to reduce the regulatory burden relating to consenting, and lead to greater standardisation in plant design, performance and operation, while providing councils with greater certainty of costs for their wastewater network investments.

The Local Government (Water Services) Bill (**the Bill**), which is currently before a Parliamentary select committee, proposes changes that impact how wastewater standards are made and implemented. These amendments are designed to ensure regional councils must implement any requirements imposed as part of a wastewater standard in a new consent, and cannot include any conditions in a consent which are any more or less restrictive. The Bill also proposes that, where the infrastructure proposed in a new consent meets the relevant wastewater standard, a 35-year consent must be issued, to maximise the benefit of public investment in the wastewater treatment infrastructure. The Bill also proposes changes to the consultation that applies when wastewater standards are made.

Many councils have wastewater treatment plants with resource consents that will expire in the first two years following the implementation of wastewater standards. The Bill proposes an automatic extension of these consents, so they expire two years following the commencement of the Bill.

Appendix Two outlines the proposals in the Bill that, if enacted, will impact how wastewater standards are created and implemented. The proposals in this discussion document are based on the new arrangements set out in this Bill. The Government proposes to make the first set of wastewater standards once this Bill is enacted later this year.

You can find more information about the Local Government (Water Services) Bill here.

Proposal *on-a-page*

The Water Services Authority—Taumata Arowai (the Authority), on behalf of the Minister of Local Government, is consulting on a set of proposed national wastewater environmental performance standards ('wastewater standards') under section 138 of the Water Services Act 2021.

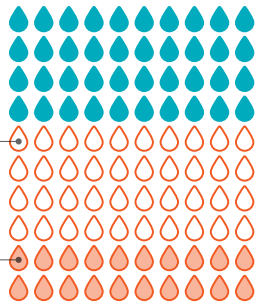
A What is the rationale for change?

A significant proportion of Council and Crown-owned wastewater infrastructure was built 30-40 years ago. These now require upgrades or renewals.

Population growth and urban development also drive the need for infrastructure renewals, with larger communities and housing areas requiring treatment plants and networks with much greater capacity than they currently have.

Around 60% of public wastewater infrastructure will require reconsenting in the next decade.

Of this number, 20% of plants are currently operating on expired resource consents.



KEY:
- Valid
- Due to expire
- Expired

The resource management system can be challenging for network owners and communities across the country.

Resource consents are developed, assessed, and monitored largely on a case-by-case basis. The current process can be lengthy, uncertain, and information intensive as a result.

B What does this package of wastewater standards cover?

The Water Services Act 2021 (the Act) (section 138) enables the Authority to make wastewater standards following public consultation.

Standards only apply to Council and Crown-owned infrastructure, and may include requirements, limits, conditions, or prohibitions related to activities associated with wastewater treatment plants and networks, including:

- **Discharges to land, air or water**
- **Biosolids** and other **by-products** from wastewater
- **Energy use**
- **Waste** introduced by a third party into a wastewater network (such as trade waste).

The initial package of proposed standards covers areas where resource consents are commonly sought for wastewater treatment plants and networks, specifically:

Discharges to water

THIS STANDARD PROPOSES:

- Treatment requirements for the main contaminants discharged from a treatment plant, varying by the risk and sensitivity of the receiving environment.

Discharges to land

THIS STANDARD PROPOSES:

- A framework for identifying suitable land for discharge application, based on a site-specific risk assessment.
- Treatment requirements for nutrients and pathogens discharged to land.

Beneficial reuse of biosolids

THIS STANDARD PROPOSES:

- A grading system for processing biosolids from wastewater treatment plants, with corresponding activity status for how and when biosolids can be reused based on Water NZ guidelines.

Wastewater network overflow and bypass arrangements

THIS STANDARD PROPOSES:

- Risk-based planning, monitoring and reporting requirements for overflows from networks and bypasses of plants.
- All existing overflow points must be consented.

- Monitoring and reporting requirements will apply across all the standards.

Small plant standard (SPS)

The discharge to water standard will impose different treatment requirements for wastewater treatment plants that service very small communities. These plants are significantly different to those that service larger towns and cities. They are usually oxidation ponds that rely on passive treatment arrangements that require little operation, at isolated sites and often without access to electricity. These small plants often have a minimal impact on the receiving environment because of their small size, particularly in comparison to contaminants like nutrients from surrounding land. Due to this, no nutrient treatment is proposed as part of the small plant standard, and other treatment requirements are tailored to suit infrastructure of this nature.

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C How will territorial authorities (TAs) and regional councils (RCs) use the standards?

Territorial authorities (TAs) who have wastewater treatment plants due for upgrade or renewal will consult with their communities under the Local Government Act 2002 to determine the best arrangement for their circumstances.

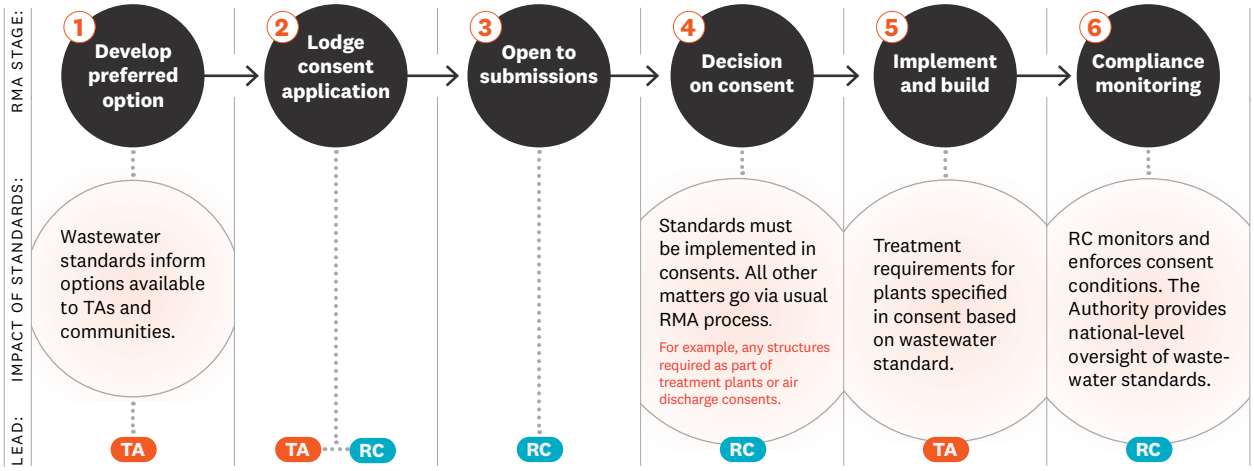
The standards will set treatment requirements based on the type of water body or land the plant discharges to.

These standards will guide councils and communities in making decisions, and in the design, planning, and funding once a decision is made.

Examples of what this might look like:

Communities and TAs may choose to either:

- Decommission and replace an old plant with one that discharges to land in the summer, and water in the winter, or
- Upgrade an existing plant or combine multiple plants into one centralised arrangement.



D What are the expected benefits of the proposed standards?

Wastewater standards will:

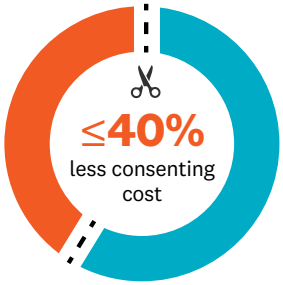
- Support environmental outcomes.
- Drive cost and time efficiencies.
- Support owners of networks to better plan and fund infrastructure.
- Provide clear expectations about treatment quality to communities.

Expected cost efficiencies:

Based on case studies, we expect up to 40% reduction in consenting costs.

This includes cost reductions in staff time, technical and feasibility assessments, legal costs, and consultation/engagement expenses.

Over time, further savings will come from standardising infrastructure and operations to comply with the proposed wastewater standards.



The standards will provide certainty to TAs, helping them to better:

- Plan
- Design
- Engage with communities
- Fund infrastructure upgrades
- Develop long-term plans

E What was the process to develop the standards?

The Authority developed these proposals using evidence, technical advice, testing.

Review of a range of previous work relating to the area.

Commissioning technical reports into potential areas where standards could be made.

Commissioning case studies of wastewater arrangements to understand the perspectives of iwi/Māori, TAs, and RCs.

Commissioning detailed technical advice into the discharge to water and land standards.

A Technical Review Group made up of TAs, RCs, peak industry bodies, and leading industry professionals.

The goal is to create credible standards that balance:

The proposed standards do not cover the following matters:

- ✗ Discharges to air from wastewater treatment plants.
- ✗ Recycled treated wastewater for non-potable use.
- ✗ Other contaminants from treatment plants (such as endocrine disruptors, heavy metals, and PFAS).
- ✗ Arrangements for private networks or onsite wastewater treatment systems (such as septic tanks).

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3. What is covered by the proposed wastewater standards?

Relevant provisions in the Water Services Act 2021

The Water Services Act 2021 (**the Act**) (section 138) enables the Authority to make wastewater standards. The Local Government (Water Services) Bill proposes to change this so that standards are set through regulations made by Order in Council, on the advice of the responsible Minister.

Standards may include (but are not limited to) requirements, limits, conditions, or prohibitions related to activities associated with wastewater networks, including:

- discharges to land, air or water,
- biosolids and any other byproducts from wastewater,
- energy use, and
- waste that is introduced by a third party into a wastewater network (for example, trade waste).

The Local Government (Water Services) Bill also expands and clarifies how standards affect processes and decisions under the Resource Management Act 1991.

The Act enables the Authority to exercise several functions that are relevant to the proposed wastewater environmental standards. These include:

- **Network Environmental Performance Measures:** network operators are required to monitor and report on the environmental performance of their drinking water, wastewater and stormwater networks. Robust data collection and reporting is critical to providing a clear picture about how networks are performing, to minimise potential impacts on the environment and public health over time.
- **Wastewater Network Risk Management Plans:** these plans can be required under section 139 of the Water Services Act (once a timeframe is set by notice in the Gazette) and must meet any relevant wastewater measures, standards or targets.[1] Once made they must be reviewed every 5 years.
- **Wastewater Environmental Performance Targets:** The Authority may also create targets that apply to wastewater network and their operators. These will be introduced at a later date, once there is a clearer picture of how wastewater networks are performing and where targets may be appropriate.

Wastewater standards apply to public wastewater networks

The Act provides that wastewater standards may only apply to public networks (i.e., owned by a territorial authority or its service delivery organisation such as Watercare, or certain Central Government organisations), as defined in the Act:

> ***wastewater network*** means the infrastructure and processes that—
>
> (a) are used to collect, store, transmit through reticulation, treat, or discharge wastewater; and
>
> (b) are operated by, for, or on behalf of one of the following:
>
> *(i) a local authority, council-controlled organisation, or subsidiary of a council-controlled organisation:*
>
> *(ii) a department:*
>
> *(iii) the New Zealand Defence Force*

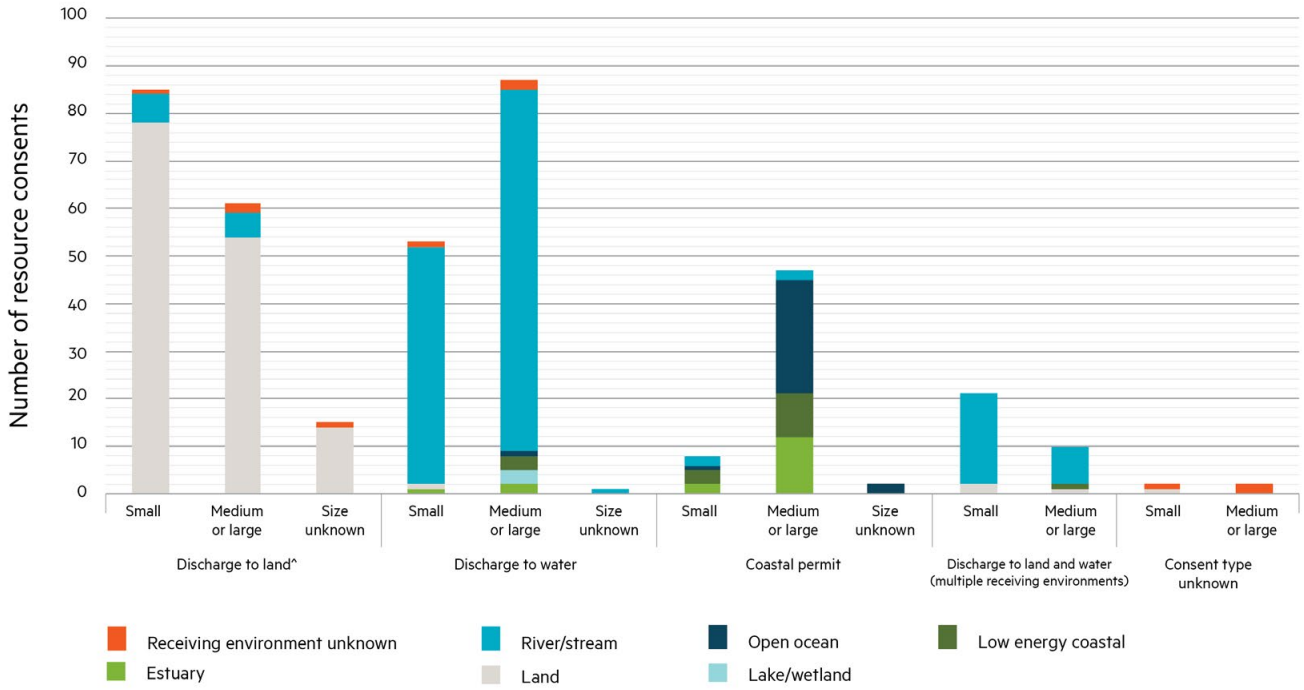
The standards do not apply to privately owned networks, septic tanks or onsite systems for treating wastewater (those captured by AS/NZS 1547:2012). This includes onsite systems with primary, secondary and disinfection wastewater systems – for example, wastewater from campground ablution blocks and amenity public toilets – as well as septic tanks. In these situations, wastewater is generally from one or multiple buildings but within one land area or site. Treatment is typically minimal (compared to a treatment plant with multiple levels of treatment) as is the environmental impact.

What are the proposed wastewater standards in this discussion document?

This document proposes an initial set of wastewater standards for discharges to land and water, and arrangements for applying biosolids to land and managing overflows and bypasses. This initial set of standards targets areas where performance improvements will be most effective for this essential infrastructure and cover the majority of consents for wastewater treatment plants as set out in the graph below.

1 To date, the Water Services Authority hasn't published any requirements or guidance on Wastewater Network Risk Management Plans should cover.

Wastewater discharge consents by consent type, size and receiving environment*



Based on 353 primary discharge consents from Water Services Authority Wastewater Discharge Consents Database
^ Includes discharges to land that may enter water

Discharge to water standard

The proposed standard for discharges to water includes:

- treatment limits for the main contaminants or 'parameters' that are discharged by wastewater treatment plants, and which commonly are subject to limits or monitoring arrangements in resource consents,
- different classes of receiving environment, in relation to which the treatment limits vary,
- 'end of pipe' monitoring and reporting requirements for the treatment limits, and
- sets separate treatment requirements that are tailored to small wastewater treatment plants that service very small populations and have a minimal impact on the receiving environment.

Discharge to land standard

The proposed standard for discharges to land is based on a site-specific risk assessment and includes:

- a framework for identifying areas of land appropriate for land application and classifying its risk,
- treatment requirements for wastewater that is discharged to land, and
- monitoring and reporting requirements, including for soil and water at and around the discharge site.

Beneficial reuse of biosolids standard

The proposed standard for beneficial reuse of biosolids includes:

- a grading system for processing biosolids, with corresponding activity status under the Resource Management Act 1991 for how and where biosolids can be reused,
- additional treatment requirements and mitigation measures where biosolids have a lower grade, and
- monitoring and reporting requirements, which correspond with the grade of biosolids.

Arrangements for wastewater network overflows and bypasses of wastewater treatment plants

The proposed standard for wastewater network overflows and bypasses includes:

- requirements for network operators to develop wastewater risk management plans, to identify where overflows and bypasses are a risk, and how they should be managed,
- monitoring and reporting requirements for overflows and bypasses from wastewater networks, and
- classification of overflows and bypasses as controlled activities under the Resource Management Act 1991.

We would like your feedback on the following questions:

- Do you agree with the areas the first set of standards are proposed to cover?
- What areas should we prioritise to introduce wastewater standards in future?

How will wastewater standards be implemented?

Regional councils remain the regulator for wastewater and stormwater networks and are responsible for land-use planning, resource consent processes, and monitoring, reporting and compliance and enforcement under the Resource Management Act 1991. The proposed standards will be implemented through new resource consents, which for discharges to water and land will be granted for 35-year timeframes.

We are developing guidance to support network owners and operators, as well as consenting authorities, to implement wastewater standards.

We would like your feedback on the following questions:

- What topics should we cover in the guidance material to support implementation of the standards?
- Are there particular groups we should work with to develop guidance and if so, who?
- How should factors such as climate change, population growth, or consumer complaints be addressed when considering a 35-year consent term?

Discharges to land and water

The proposed wastewater standards will determine some of the conditions imposed on discharge consents under the Resource Management Act 1991. For the specific parameters (and corresponding limits) included in the standard, regional councils will not be able to introduce conditions that require either higher or lower levels of treatment. Monitoring and reporting requirements will also be set through consent conditions.

If a matter is not dealt with in wastewater standards – for example, air or odour discharges – the relevant regional council will continue to set consent conditions. Outside of matters covered in the standards, regional councils (and, where relevant, city or district councils) will still need to consider other consenting aspects of wastewater infrastructure and discharges, such as the location and whether any structures for the plant are required. The proposed standards do not remove the requirement for applicants to engage with communities as part of the infrastructure planning and consenting process.

Wastewater overflows and bypasses

This discussion document proposes that risk-based monitoring and reporting arrangements be implemented for wastewater overflows, including for both overflows from networks and bypasses of wastewater treatment plants. It also proposes that overflows and bypasses must have an associated consent (that is, they are a 'controlled activity' under the Resource Management Act 1991).

Regional councils will continue to control how adverse effects of overflows and bypasses on the environment are managed. The specific monitoring and reporting requirements in the proposed standard will be included in the wastewater standard and set through consent conditions.

Beneficial reuse of biosolids

This discussion document proposes a framework for grading biosolids to reflect the level of treatment they have received and the residual levels of contaminants that they contain. The grading framework will also set the consent requirements for different grades of biosolids, with the highest grade not requiring a resource consent to be applied to land (that is, a 'permitted activity' under the Resource Management Act 1991).

This proposal is based on Water New Zealand's draft Beneficial Use of Biosolids and other Organic Materials of Land (Good Practice Guide). This guide has been developed with the sector, and is based on existing guidelines that have been in place since 2002 that have been implemented in some regional plans and consents.

Second phase of wastewater standards: Infrastructure Design Solutions

The Local Government (Water Services) Bill provides for 'infrastructure design solutions' that will be developed as part of the second implementation phase for wastewater standards, with a new provision inserted into the Water Services Act 2021. These voluntary solutions will set out standardised design and operating requirements for modular wastewater treatment plants or components of wastewater treatment plants that are deemed to meet the wastewater standards. This is intended to support network operators to meet wastewater standards in a cost-effective way.

The infrastructure design solutions are initially likely to focus on treatment plants in smaller communities. They are not in scope for this consultation on proposed wastewater standards. They will be developed and publicly consulted on once enabled through legislation as part of the implementation of the standards.

4. Our wastewater environment

By the numbers: Wastewater treatment plants[2]

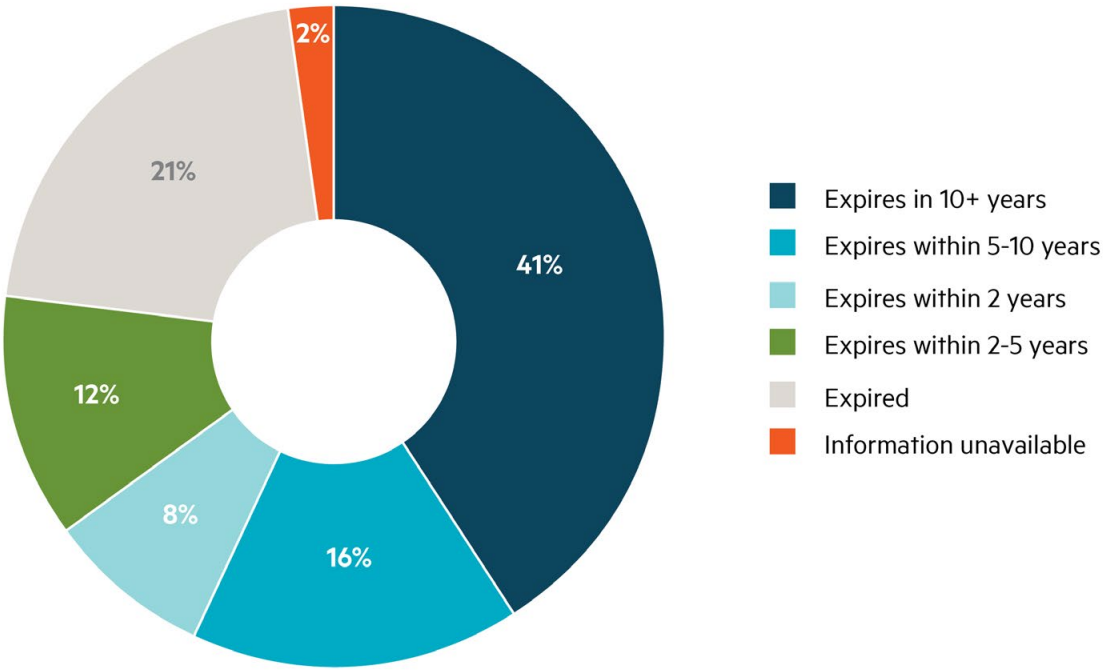
- There are 334 publicly owned wastewater treatment plants across New Zealand, which are owned and/or operated by councils, their council-controlled organisations, or by Crown agencies like the Department of Conservation and the New Zealand Defence Force.
- All 67 local councils operate one or more wastewater treatment plants.
- Approximately 50 percent of wastewater treatment plants serve communities of less than one thousand people.

What are the main challenges?

Over the next 10 years, at least 57 percent of consents for wastewater treatment plants will come up for renewal.[3]

Already, expired consents make up 21 percent of wastewater treatment plant consents.

Wastewater discharge consent expiry timeframes*



**Based on 353 primary discharge consents from Water Services Authority Wastewater Discharge Consents Database*

2 These figures are based on the Water Services Authority Database of Wastewater Resource Consents.

3 The percentage of consents coming up for renewal is based on a Water Services Authority Database of Wastewater Resource Consents. This database was compiled in late-2024 and differs from previously shared numbers of consents coming up for renewal and those that are already expired.

This will place a large consenting burden on councils as well as communities that engage with the consenting process (often on a voluntary basis). There is an opportunity to streamline part of the consenting process, through the introduction of a standardised approach to how wastewater discharges and other wastewater network activities are managed.

The upgrades required to New Zealand's wastewater treatment plants and the associated networks represent a significant infrastructure challenge for councils. A large portion of New Zealand's wastewater plant infrastructure was built around 30-40 years ago, with network infrastructure typically older and in unknown condition. In many cases, significant upgrades are now needed.

Many networks have limited capacity to accommodate population growth, which increases the rate and frequency of overflows and means wastewater treatment plants need to be upgraded to manage increasing demands due to urban development and housing growth. In Auckland, for example, there are current wastewater network constraints limiting development, in areas such as the Hibiscus Coast and Warkworth.

The realities for smaller plants

Approximately 50 percent of wastewater treatment plants serve communities of fewer than one thousand people. The technology used in these small plants tends to be relatively simple (e.g., mostly oxidation pond-based systems).

Oxidation pond-based systems often cannot perform to the same standard as more technologically sophisticated plants. Affordability challenges are particularly felt in smaller communities, with the cost of consenting and upgrading treatment plants falling on limited or declining ratepayer bases in areas such as Southland. Geographic constraints often mean amalgamating smaller treatment plants is not feasible.

Source: The Southland Economic Project (2018)

The effects-based consenting process is complex, costly and varies across the country

Under the Resource Management Act 1991, wastewater treatment plants require several resource consents, including for discharges of treated wastewater to water or land, discharges to air (including odour), certain activities associated with beneficial reuse of biosolids, land use for the treatment plant, and in some regions, overflows.

The resource consenting process follows an effects-based approach, which means managing the effects of activities on the environment, rather than the activities themselves. This approach has led to three main issues:

- there are significant costs in investigating and agreeing on the effects of a proposed activity to inform a consent,
- there is significant variation in wastewater treatment requirements (both across the country and within regions), and this impacts the overall system and its performance in multiple ways, and
- there is a lack of transparency about how the wastewater system is performing.

There is significant variation in wastewater treatment requirements across the country

The existing resource management system is based on the consenting arrangements for wastewater treatment plants and networks being set "at place" based on a particular plant, the associated receiving environment and the specific effects on it, and any community preferences about the arrangements. This approach has led to significant variation in treatment limits, monitoring and reporting requirements from plant to plant, with no consistency based on common areas such the age of a plant, its treatment processes or infrastructure, or impacts on the receiving environment. The approach has also resulted in significant design, operating and consenting costs for plants, long consent processing times and treatment arrangements determined without any clear baseline or expectations for what "good" treatment should be. The bespoke process limits potential efficiencies and cost savings, for example, from standardising how treatment plants are designed, constructed and operated.

Compliance with consents can be particularly challenging due to the varying treatment limits and inconsistencies in consent conditions. Many contaminants have no limits placed on them, or alternatively are articulated in ways that make compliance and enforcement difficult or impossible. Regional councils may experience challenges in taking timely and consistent enforcement action due to a lack of reliable information.

There are significant costs in investigating and determining the effects of a proposed activity for a consent

The consenting process for infrastructure such as wastewater is complex, time-consuming and expensive. Costs are often incurred through:

- engaging technical specialists to assess environmental effects and required plant upgrades,
- consultation with communities and other potentially affected parties,
- peer review by the consenting authority, and
- at times, Environment (or High) Court appeals.

Resource consenting for wastewater has also had to occur in parallel with implementing freshwater policy changes, for example, under the National Policy Statement for Freshwater Management. This has required considerable time and effort from councils and their communities.

The variable cost of wastewater consents

A 2021 report prepared by the New Zealand Infrastructure Commission – Te Waihanga looked at the cost of consenting infrastructure projects in New Zealand. The report found the cost of consenting to be considerably higher in the waste and water sectors (compared to other infrastructure sectors).

This was largely driven by the amount of expert advice and intensive engagement required. The report also found that the most significant indirect costs are those associated with delay. Funding set aside for infrastructure upgrades may be unable to be used due to significant consenting delays. The cost of construction and availability of resources (labour and materials) may change during the consenting processes.

A national stocktake of wastewater treatment plants, undertaken in 2019, found a range of reasons for why treatment plants are operating on expired consents. These reasons include the capacity and capability of small councils to manage the consenting process, lengthy and/or difficult consultation processes, and affordability constraints to meet community expectations.

Source: National stocktake of municipal wastewater treatment plants (2019)

Source: The cost of consenting infrastructure projects in New Zealand (2021)

There is a lack of transparency about wastewater system performance

The general age and condition of wastewater infrastructure has implications for communities, including for public health and environment quality. When wastewater systems are not properly managed, including the collection, treatment, and disposal processes, it can lead to various health issues and risks. A badly maintained wastewater system can expose communities to disease-causing pathogens; and in disaster situations, such as floods, the risk of water-borne diseases travelling through a community can increase.

The impacts of deferred maintenance include an increase in overflows from the broader network. In an overflow, untreated wastewater escapes from a network into environments including streams, rivers, harbours and coastlines. This impacts community members using these environments to swim or gather food, as well as the plants and animals living there.

Despite these impacts on communities, public information about the performance of wastewater networks is hard to find. The lack of transparency and consistent public reporting makes it difficult to understand how environmental and public health risks are being managed. There is an opportunity for the Authority to improve national consistency through its monitoring and reporting functions, which will increase transparency about how wastewater networks are performing. Wastewater standards can also support this work.

Opportunity and benefits of national wastewater standards

To drive cost efficiencies, save time for both those seeking and issuing consents, and make infrastructure design and procurement more efficient, there is an opportunity to put wastewater standards in place ahead of the large number of consents coming up for renewal.

Wastewater standards will drive cost efficiencies in plant design, procurement and operations

The proposed wastewater standards are expected to deliver significant cost-efficiencies relating to consenting costs. The interim regulatory impact statement published with this discussion document (which can be found here) includes case studies that estimate, for example that up to 40 percent of costs on consenting may be saved through application of the proposed standards. This includes reductions in costs associated with the consenting process including staff time, technical assessments, feasibility assessments, legal costs and consultation and engagement costs.

In some cases, there may also be reductions to capital upgrade costs and ongoing operating costs such as staff training and maintenance. The costs savings on an individual plant will depend on specific circumstances, such as the type or size of the plant, treatment processes, and options for where the plant discharges. However, over time, further costs savings are expected as materials are standardised, and modular options that comply with wastewater standards become available.

Wastewater standards will provide certainty to network owners and operators, so they can better plan for the cost of infrastructure – and leverage cost efficiencies in designing, procuring and operating wastewater treatment plants. This will support territorial authorities in developing future long-term plans (including 30-year infrastructure strategies).

The consistency created by national wastewater standards will enable benchmarking of performance and incentivise transparent and consistent compliance and enforcement.

The Authority publishes system-level information about the environmental performance of wastewater networks annually. Nevertheless, public information about individual wastewater network performance can be hard to find. At the same time, community expectations about how wastewater discharges are managed and reported are increasing.

Establishing nationally consistent wastewater standards will help to:

- ensure communities have access to better information, which will enable clearer expectations about the quality and service of wastewater treatment,
- streamline consent processes (design and engagement) to save applicants time and reduce the cost of consultants,
- provide certainty to local councils as network owners, so that they can plan for the cost of upgrading and maintaining wastewater infrastructure,
- provide opportunities for economies of scale in plant design, procurement and operator capability building / training,
- ensure that overflows from networks are better understood by network owners, ensuring that the pipe infrastructure is appropriately managed and maintained, and public health and environmental risks are reported to affected communities,
- make compliance and enforcement for regional councils easier by standardising the main contaminant limits and monitoring and reporting requirements in wastewater discharge consents,
- enable benchmarking of performance, to drive improved efficiencies over time, and
- improve public health and environmental outcomes over time.

Learning from international practices

National or state-level wastewater standards have been in place for decades in many of the jurisdictions that New Zealand commonly compares itself to, including the European Union (EU), United Kingdom, Australia and Canada.

Internationally, the protection of public health is broadly considered the key driver for setting wastewater discharge regulations, closely followed by environmental protection. Phased introduction of standards is a common approach taken overseas to support the manageability, fiscal impacts and prioritisation of certain upgrades: the EU has applied standards to different sizes of treatment plants over different timeframes as an example.

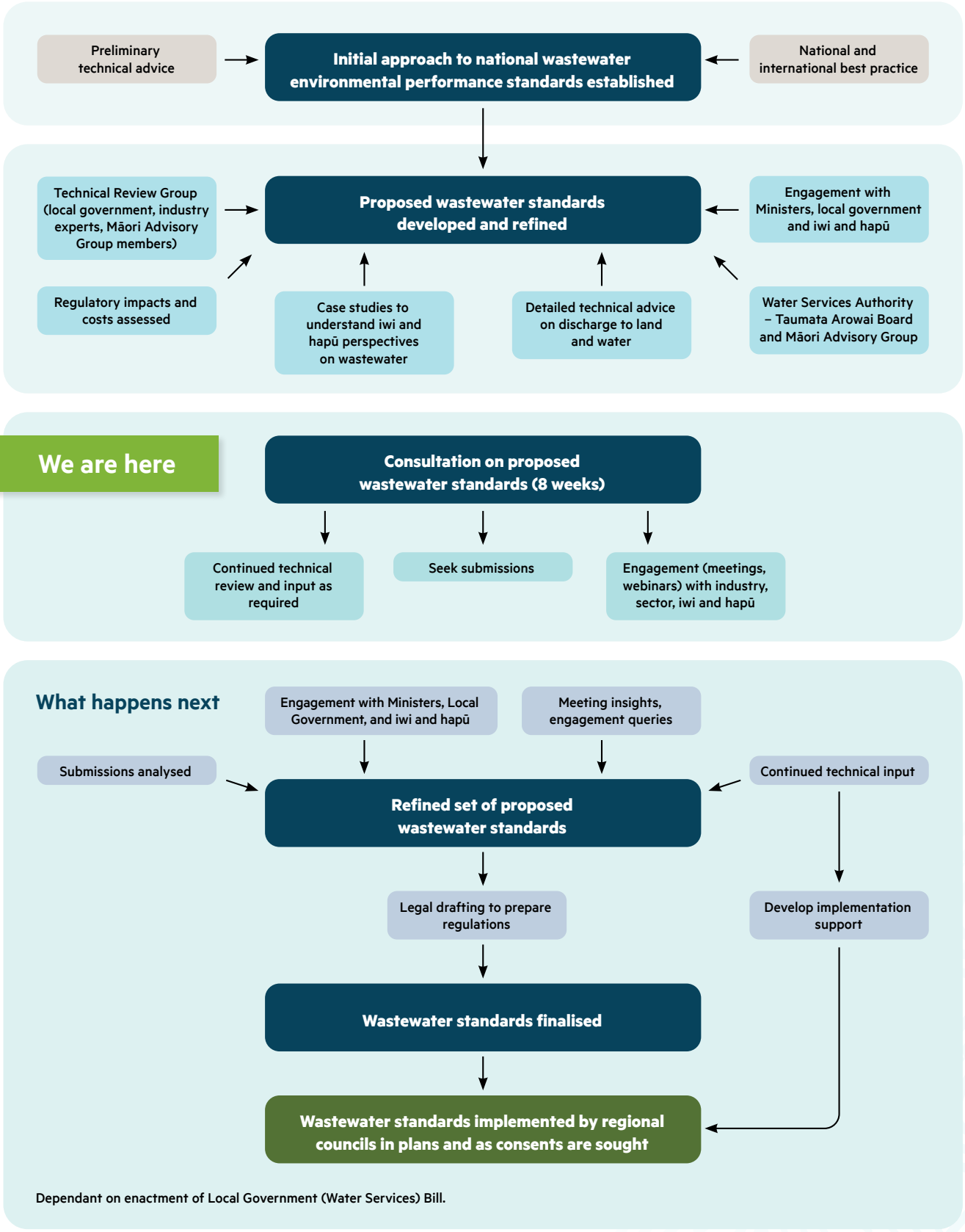
In many jurisdictions there is a population (or population equivalent) or flow (volume) component for setting standards, dependent on discharge type. While there are different approaches to setting, implementing and enforcing standards, there is widespread use of central parameters.

There are well-established monitoring and reporting requirements for overflows in many international jurisdictions that provide detailed information on overflow events – for example, the number, location and volume of overflows. The data collected is used to:

- identify where there are issues (primarily the scale and type of overflows),
- benchmark performance and identify areas for improvement,
- inform the public and community groups,
- prioritise what and where infrastructure improvement is needed,
- develop standards, and
- make investment decisions based on reliable data.

5. How were the proposals in this discussion document developed?

Developing the first set of wastewater standards



Dependant on enactment of Local Government (Water Services) Bill.

The Authority has developed these proposals through a policy process that has drawn on a range of evidence, technical advice and testing with councils and industry experts. This has included:

- reviewing a range of previous work in this area, including the New Zealand Wastewater Sector report (2021), commissioned by the Ministry for the Environment, and a suite of reports commissioned by the Department of Internal Affairs[4]
- commissioning technical reports into potential areas where standards could be made
- commissioning case studies that detail iwi and hapū involvement in wastewater treatment arrangements to better understand Māori values and perspectives, and how existing wastewater treatment arrangements can meet iwi and hapū aspirations
- commissioning detailed technical advice into the discharge to water and land standards

Copies of these documents can be found here.

The Authority convened a Technical Review Group to provide advice on proposals relating to wastewater standards. This group was comprised of individuals with leading expertise across sectors involved with wastewater management, including representatives from regional councils, territorial authorities, industry professionals, and Water New Zealand. Members of the Authority's Board and Māori Advisory Group also participated in the Technical Review Group.

Regulatory impact statement

An interim regulatory impact statement has been prepared to comply with Cabinet requirements for proposals that will have regulatory impact – this can be found here. This provides a summary of the problem being addressed, the options considered, their associated costs and benefits, the consultation undertaken, and the proposed arrangements for implementation and review. The regulatory impact statement will be updated following consultation and will be considered by the Minister of Local Government and Cabinet as part of the process for the setting of standards.

Iwi and hapū perspectives on wastewater treatment arrangements

To inform the development of the standards, the Authority engaged with a number of iwi and hapū to understand perspectives on wastewater treatment arrangements. The Authority commissioned a series of case studies to understand how mana whenua views have been incorporated into areas like resource consents, what processes work well, and where there is room for improvement. For each case study, the Authority also engaged with the relevant territorial authority and regional council.

Some of the themes from this engagement include:

- there is a strong preference for ongoing 'at-place' decision-making to ensure that iwi and hapū are involved in decisions affecting them and can actively participate in all phases of wastewater treatment processes. This extends from design arrangements through to monitoring and reporting of the infrastructure once built and its effect on the environment.
- iwi and hapū consider human waste to be tapu (prohibited) due to its impact on the health of people and the environment. This means that human waste must undergo a process of whakanoa (cleansing) before it can be safely integrated back into the environment. There are various ways that wastewater infrastructure has responded to this, including arrangements to allow waste to have contact with land before it is discharged to water.
- the preference is for the highest standard of treatment possible for both water and land-based approaches at the point of discharge. Where wastewater is discharged to water, at minimum it should not have a detrimental impact on the health and quality of the taiao (receiving environment) or the people that use the environment.
- while iwi and hapū strongly prefer discharge to land, there are several examples where this option has not proved feasible. This has primarily been because nearby land is not suitable (e.g., too porous), because the land is highly productive and therefore too expensive, or because the wastewater treatment plant is too large meaning the quantity of land required is not a practical alternative.

4 This includes the national stocktake of municipal wastewater treatment plants, and cost estimates for upgrading wastewater treatment plants that discharge to the ocean.

- resource consenting processes are often protracted and experiences of working with councils tended to be highly variable, often due to a lack of early engagement and changes in council staff as the key contact point. Iwi and hapū input is often done on a voluntary or in-kind basis and limited (for example, due to competing demands), which makes it difficult to engage consistently. There is therefore a preference for resourcing or funding to enable good engagement in these processes.
- the case studies, together with information from other sources, demonstrated that comprehensive engagement processes involving iwi led to better outcomes from the iwi and hapū perspective.

You can read through the case studies here.

Treaty settlement obligations and other arrangements between councils, iwi and hapū

There are several legislative and regulatory mechanisms that provide for iwi and hapū engagement and involvement in wastewater management processes. This includes legal obligations between councils and iwi and hapū, as well as the statutory obligations imposed on the Authority to engage early and meaningfully with Māori.

Treaty settlement obligations impose a duty on territorial authorities, regional councils, and decision-makers under the Water Services Act (including the Authority) to have regard to Treaty settlement arrangements that exist and cover the Waikato, Waipā, and Whanganui River catchments.

To inform development of the standards, the Authority is engaging with iwi in these catchments where there are specific settlement obligations to uphold. Broader engagement is also underway with iwi and hapū who have agreements or arrangements with Councils that impact on wastewater arrangements, such as regional participation arrangements under the Resource Management Act 1991, customary marine title holders under the Marine and Coastal Area (Takutai Moana) Act 2011, freshwater obligations under Treaty of Waitangi and parties to joint management arrangement.

This engagement will inform the advice to the Minister of Local Government on how the standards could apply where there are settlement or other relevant obligations.

6. A discharge to water environmental performance standard

The **proposed approach** is to establish a discharge to water environmental performance standard that:

- Sets treatment limits for specified contaminants or 'parameters' that will vary depending on different types of receiving environments.
- Imposes monitoring and reporting arrangements for treatment requirements.
- Provides that, where a consent applicant can demonstrate they will meet treatment requirements imposed by the standard, the consent authority must issue a discharge consent with a 35-year timeframe.
- Sets separate treatment requirements that are tailored to small wastewater treatment plants (oxidation ponds) that service very small populations and have a minimal impact on the receiving environment.

What is a 'discharge to water' from a wastewater treatment plant?

Many wastewater treatment plants discharge treated wastewater to a water body (for example, the ocean or a river). Resource consent conditions set requirements relating to the quality and volume of the discharge, and specify any treatment requirements relating to particular contaminants that are potentially harmful to the environment or create risks to public health.

A resource consent will include monitoring and reporting requirements to track compliance with consent conditions, and require reporting on performance (and any non-compliance) to the relevant regional council.

If the operator of the plant does not comply with these requirements or conditions, they will be in breach of their resource consent. Regional councils are responsible for compliance and enforcement where this occurs – actions can include requiring the operator to remedy the non-compliance, issuing a fine, or commencing court action.

In this context, 'discharge to water' from a wastewater treatment plant does not refer to overflows from the broader pipe network, or where partially treated wastewater bypasses the wastewater treatment plant. These areas are dealt with in the overflows section of this discussion document (covered in section nine of this document).

Given the impacts of poorly managed pathogens in coastal and freshwater environments (for example, to swimming and shellfish collection), these contaminants are routinely considered for discharge to water consents. For many waterbodies, there are also a range of other activities that impact water quality – for example, recreational boating or activities on nearby farmland. Regional councils manage the cumulative impacts of these activities on water bodies through planning, consenting and enforcement.

Current arrangements for discharges to water

Based on the Authority's Public Register of Wastewater Networks and a stocktake of resource consents, There are 202 resource consents for wastewater discharges to water.

The management of wastewater discharges to water varies significantly throughout New Zealand and within regions. Variations apply to contaminants and the corresponding limits in consents, as well as their monitoring and reporting requirements.

There are currently 50 wastewater treatment plants discharging to water with expired consents; a situation authorised under section 124 of the Resource Management Act 1991. Of these 50 plants, the average time a plant has been operating on an expired consent is 5 years – the longest is 24 years.

Receiving environments for discharges to water range from large open ocean environments to more static estuarine or lake environments. Generally, due to the significant amount of dilution and dispersion, open ocean environments are less sensitive to discharges than lakes, rivers and streams.

Relevant documents and processes

Consenting authorities consider a range of documents when managing discharges to water, including:

- The National Policy Statement for Freshwater Management (NPS-FM) and associated National Objectives Framework, which identifies values for freshwater through engagement with mana whenua and communities[5]
- The New Zealand Coastal Policy Statement 2010, which requires consenting authorities to have particular regard to the sensitivity and capacity of receiving environments, nature of contaminants, and avoiding adverse impacts on ecosystems and habitats

5 The Government has announced that the NPS-FM will be replaced. In preparation for this, the date by which regional councils are required to notify freshwater plan changes has been extended by three years to 31 December 2027. (Footnote updated 11 March 2025)

- Quantitative Microbial Risk Assessments (QRMA), which are increasingly used by consenting authorities to assess the public health risk associated with coastal marine wastewater discharges
- The Australian and New Zealand Guidelines for Fresh and Marine Water Quality (revised in 2018), which provide guidance to assess, manage and monitor the water quality of aquatic systems in Australia and New Zealand.

How will wastewater standards help to manage discharges to water?

Improving consistency in how discharges to water are managed, and the treatment limits for specific receiving environments will make it easier for network operators to plan, design and operate wastewater infrastructure. It will reduce the complexity of resource consenting and setting conditions.

National standards provide an opportunity to apply consistent limits to a core set of contaminants (such as total nitrogen, total phosphorous, sediment and pathogens) that are discharged from wastewater treatment plants and can impact waterbodies, and the aquatic life and recreational activities in and around these areas. The proposed standards would also set consistent requirements for parameters that indicate there are public health risks, such as *E.coli* or enterococci.

Standards will introduce consistent monitoring and reporting requirements for the core set of contaminants, which will build a clear and comparable picture of how wastewater treatment plants are performing. In future, this information may be used to introduce measures to lift the performance of wastewater networks.

Proposed approach: discharge to water environmental performance standard for wastewater treatment plants

Discharge to water environmental performance standard will specify receiving environment types

It is proposed that treatment requirements will vary depending on the type of receiving environment. This approach is proposed because:

- treatment requirements are generally less stringent where the discharge is to a water body with higher levels of dilution – for example, to the open ocean or a large river;
- conversely, where the discharge is to a water body that has lower levels of dilution or is sensitive in nature, treatment requirements should be higher – for example, a lake or estuary; and
- treatment requirements should differ depending on whether the discharge is to a saline / marine environment or to a freshwater environment.

The proposal is to specify seven categories of receiving environment in the standard, based on dilution and type of receiving environment. A dilution approach is proposed because it is simple, is understood by regulators and operators, and removes the need for more complex (and costly) dispersion modelling. This is reflected in its frequent use in other jurisdictions (including Canada, USA, Switzerland, European Union). It is intended to be a proxy for mixing, as well as the assimilative capacity in the receiving environment and the relative scale of the discharge in relation to the volume of the waterbody.

$$\text{Dilution ratio} = \frac{\textbf{Volume + Flow}}{\textbf{Volume}}$$

Volume: the largest predicted annual median for discharge volume, across the duration of a consent (m^3/day)

Flow: the average of the lowest 7 days average flow across a year (m^3/day)

The following categories of receiving environment are proposed:

Category of receiving environment	Definition
Lakes and natural ponds with dilution ratio >50	Body of standing freshwater, which is entirely or nearly surrounded by land. It includes lakes and natural ponds but excludes any artificial ponds. Typically, low energy depositional environment in which dispersion/dilution is limited by an absence of strong water currents.
River or stream with dilution ratio >10 and <50 (low)	A continually flowing body of fresh water, including streams and modified watercourses, but excludes any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal). Rivers or streams or streams with very low dilution (dilution ratio <10) are excluded from the standards due to their lower ability to assimilate wastewater discharges.
River or stream with dilution ratio >50 and <250 (moderate)	
River or stream with dilution ratio >250 (high)	
Estuaries with dilution ratio >50	A partially enclosed coastal body of water that is either permanently or periodically open to the sea in which the aquatic ecosystem is affected by the physical and chemical characteristics of both runoff from the land and inflow from the sea. It includes features variously named on the NZMS 1:50,000 topographic maps as estuary, creek, firth, inlet, gulf, cove, river mouth, bay, lagoon, harbour, stream, fjord, sound, haven, and basin.[6]
Low energy coastal with dilution ratio >100	Area that is sheltered from large waves and long period waves. Occur in gulfs and behind islands and reefs on the open coast and includes recessed harbours and embayments.
Open ocean with dilution ratio >1000	Water that is remote from estuaries, fiords, inlets, harbours, and embayments, typically >500m from a shoreline and high energy environment.

Seasonality

Assessing the seasonal implications of wastewater discharges is complex because changes occur both at the treatment plant and in the receiving environment.

Flow varies in the receiving environment and is typically low in summer and higher in winter. Sensitivity of the receiving environment – to nutrients in particular – varies seasonally usually with a greater probability of eutrophication effects in warmer temperatures. In summer months, the discharged nutrient loads pose a greater risk to the receiving environment because the waterbodies are in a low flow state. Over the year, flows in and out of some treatment plants may increase due to significant increased visitor numbers relative to the usual population. Wastewater treatment plants should be designed in a way that accommodates changes in flow.

The risk of seasonal fluctuations in flow is addressed using:

- the 7 Day Median Annual Low Flow to establish the proposed dilution categories.
- the Median Design Flow and proposed numeric limits manage loading to the environment and forms the basis for the discharge volume that will be consented.
- the annual median statistical basis in the proposed standard allows for some flexibility over the course of the year.

These features of the proposed approach provide flexibility to allow for seasonal variation while maintaining an appropriate level of protection for freshwater environments under low flow conditions. This approach will mean that treatment plants are effectively designed to meet the proposed standard across all seasons.

6 A list of estuaries in New Zealand can be found here: Assessment of the eutrophication susceptibility of New Zealand's estuaries | Ministry for the Environment

Parameters and numeric limits for discharges to water

The proposed discharge to water standard sets limits on the contaminants most commonly found in treated wastewater discharges. In the case of *E. coli* and enterococci, they are faecal bacteria indicators that, if present in sufficient quantities, indicate that other harmful pathogens may be present that can cause illness.

Some effects are not covered by the proposed standard as they are influenced by site-specific factors and will therefore continue to be addressed by regional councils during the consenting process. These include:

- The volume of discharge: this relates to site-specific effects such as scour, as well as the scale of the discharge relative to the receiving water body.
- Cumulative effects of contaminants from other sources and their impact on the broader catchment.*
- Toxicity of metals and other contaminants, such as pesticides, drugs, antibacterial agents and PFAS.
- The presence of artificial chemicals, such as microplastics.
- Bioaccumulation of contaminants in organisms in the receiving water body, such as mercury. (note, the standards address the risk of bioaccumulation on human health after eating affected organisms, particularly filter feeders such as mussels).
- Other effects, such as odour, noise and the location of the discharge structures and bypasses.

*Bullet point above updated on 10 March 2025 to make it clearer.

Contaminants and parameters not covered by the proposed discharge to water standard

Where contaminants are not covered by the standard (for example, heavy metals), the usual resource consenting process would apply. This would mean regional councils may set an appropriate limit on these contaminants if this is considered necessary. We anticipate these limits would likely draw on the Australian and New Zealand Guidelines for Fresh and Marine Water Quality, or other factors that a regional council considers appropriate.

Some of the parameters covered by the standard will regulate the levels of other contaminants not covered by the standards. For example, limits proposed for Total Nitrogen will also regulate levels of heavy metals in a treated discharge.

When there are multiple metrics for a parameter the standard is intended to cover all types of that parameter. For example, parameters are proposed for Total Nitrogen and Total Phosphorous and this is intended to cover all forms of nitrogen and phosphorous. This means that a consent may not include different treatment limits for types of nitrogen or phosphorous.

Wastewater standards may be expanded in future to include additional contaminants where there is a clear body of evidence and there would be benefit in having a nationally consistent approach.

Treatment requirements for discharges to open ocean

Discharges to open ocean are typically subject to a higher rate of mixing and dispersion, subject to stronger tidal and wind currents, and tend to have less frequent public access to the discharge point.

To reflect the assimilative capacity of the open ocean, discharges are only required to treat for enterococci and ammoniacal-nitrogen. This is on the assumption that discharges to ocean and coastal receiving waters will be milli screened to remove solids, as is common in wastewater treatment plants in New Zealand. Trade Waste bylaws also typically control and manage the effects of the discharges of highly coloured waste streams to ocean and coastal receiving waters, as well as known toxic compounds.

Pathogen limits for discharges to water

As an alternative to the default limits in the standard and to protect shellfish health, we are proposing that a Quantitative Risk Management Assessment (QRMA) could be completed to determine what numeric parameters apply for pathogens (enterococci and *E. coli*) in situations where:

- shellfish is routinely collected, and these areas could be impacted by a new outfall discharge, or
- regular monitoring of an existing discharge has indicated some microbial contamination of shellfish.

The outcome of the QRMA would be used to determine whether the consent holder could meet a higher or lower limit from the proposed standard. We have commissioned additional technical advice about what these limits should be.

We would like your feedback on the following question:

- How should we consider checks and balances to protect against situations where the degree of microbial contamination may change throughout the duration of a consent?

Exceptions to the proposed standard

The proposed standard will not apply in all situations. For discharge to water arrangements that aren't captured by the proposed standard, the wastewater standards would not apply, and any treatment requirements would be set in resource consent conditions by the relevant regional council.

The proposed standard will not apply in the following situations:

- discharges to a waterbody that meets the requirements of Attribute Band A for all attributes contained in Appendix 2A and Appendix 2B of the NPS-FM. This will only be a very small proportion of New Zealand's water bodies that are in a natural, undegraded state.
- discharges to rivers or streams with very low dilution (with a dilution ratio of <10).
- discharges from a wastewater treatment plant directly to an aquifer (commonly known as deep well injection). This is relatively new technology and there are currently no treatment arrangements of this nature in New Zealand.
- discharges to natural wetlands (i.e., those which are not part of the treatment process for the wastewater discharge).
- discharges within the following proximities:
  - 1,000m upstream or 100m downstream of human drinking water abstraction points in rivers
  - 500m radius from human drinking water intakes in lakes
    - 1,000m upstream of any tributaries that discharge to lakes within the 500m radius from intakes
- discharges to a waterbody that has naturally high levels of a particular parameter. This is not intended to capture waterbodies that have existing high levels of a particular parameter due to diffuse discharges that occur through land use such as farming.

We would like your feedback on the following questions:

- Are the areas for exceptions appropriate to manage the impacts of discharges and do you anticipate implementation challenges?
- How should the exceptions be further defined to ensure there are no unintended consequences?

Parameters covered by the discharge to water standard (including the rationale, measurement unit and numeric limits)

Parameter, rationale and statistic		Lakes and natural ponds	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 ($cBOD_5$) **Rationale:** $cBOD_5$ can indicate the effectiveness of wastewater treatment processes. High levels of $cBOD_5$ can deplete dissolved oxygen and harm aquatic life. **Statistic:** 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) **Rational:** Total Suspended Solids an important visible indicator of water quality. Suspended solids absorb light, which can increase water temperature and decrease oxygen levels in waterbodies. **Statistic:** Annual median		15 mg/L	10 mg/L	15 mg/L	30 mg/L	25 mg/L	50 mg/L	Not applicable
Nutrients (Total Nitrogen and Total Phosphorous) **Rationale:** Nutrients can affect ecosystem health through eutrophication, increases in plant growth (e.g., algal blooms) and reduced water clarity. The proposed discharge to water standards sets limits on total nitrogen and total phosphorous. For each of the subcategories, limits for nutrients reflect flow and loading.	**Total Nitrogen –** **Statistic:** Annual median	10 mgN/L	5 mgN/L	10 mgN/L	35 mgN/L	10 mgN/L	10 mgN/L	Not applicable
	Total Phosphorus – **Statistic:** 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) **Rationale:** Ammonia can deplete oxygen levels in water, resulting in reduced biodiversity and declining fish populations. **Statistic:** Annual 90%ile		3 mgN/L	1 mgN/L	3 mgN/L	25 mgN/L	15 mgN/L	20 mgN/L	50 mgN/L
E. coli **Rationale:** As with enterococci, *E. coli* indicates the presence of pathogens and faecal pollution in freshwater. **Statistic:** Annual 90%ile		6,500 cfu/100mL	1,300 cfu/100mL	6,500 cfu/100mL	32,500 cfu/100mL	Not applicable	Not applicable	Not applicable
Enterococci **Rationale:** Enterococci and *E. Coli* indicate the presence of disease-causing bacteria, viruses or protozoa. Enterococci is the most suitable bacteria to test for in marine waters. **Statistic:** Annual 90%ile		Not applicable	Not applicable	Not applicable	Not applicable	2,000 cfu/100mL	4,000 cfu/100mL	40,000 cfu/100mL

Compliance, monitoring and reporting requirements

Compliance, monitoring and reporting requirements are proposed as part of the discharge to water standard. These will be included in the consent relating to the wastewater treatment plant, and the consent holder will be required to comply with the monitoring and reporting requirements as a condition of the consent.

Compliance, monitoring and reporting requirements are a standard feature of consent conditions. However the detail of these arrangements varies widely from consent to consent and region to region, and this results in poor outcomes including:

- Some compliance conditions in consents are not articulated in a way that makes breach of a condition or limit enforceable – this compromises enforcement action and can impact on environmental outcomes.
- Differences in monitoring and reporting from plant to plant is, in some cases, an unjustifiable regulatory burden to both operators and regional councils when the plant arrangements are broadly similar.
- There is currently a lack of transparency (and public accountability) for compliance of plants with conditions of a consent.
- It is currently not possible to benchmark performance from plant to plant or operator to operator, which is a standard feature of many other jurisdictions.

Operators will be required to monitor compliance with each of the parameters covered by the standards. The following requirements will apply to all wastewater treatment plants:

- Monitoring the discharge directly from the discharge point ('end of pipe' monitoring) will be required for all contaminants covered in the proposed standard.
- The standard will not require receiving environment monitoring.
- Monitoring requirements are set out in the table of parameters and are based on either the 90th percentile or annual median.

The frequency of monitoring will vary according to the size and complexity of a wastewater treatment plant increases, so does the frequency of the monitoring required:

- Continuous monitoring will be required for wastewater treatment plants serving populations greater than 10,000 – this is already often the case in resource consents for plants of this size.
- Fortnightly monitoring is required for plants serving populations between 1,000 and 10,000 people.
- Monthly reporting is required for small-scale plants serving 1000 people or less.

The following proposed reporting requirements would apply to all parameters:

- Any breach of a parameter must be reported by an operator to the relevant regional council as soon as reasonably possible after the breach is detected.
- An operator must publish compliance against parameters in applicable standards on a monthly basis, on a publicly available website maintained by the operator, and provide the report to the relevant regional council.
- Annual reporting is required of compliance against parameters in applicable standards to regional council and the Water Services Authority.

To provide confidence in how the standards are implemented, network operators will be required to engage a third party, on an annual basis, to audit compliance with matters covered by the standard, including monitoring and reporting requirements. Costs associated with third party auditing will be covered by network operators, rather than consenting authorities.

We would like your feedback on the following questions:

- Are the treatment limits, and monitoring and reporting requirements proportionate to the potential impacts of the different discharge scenarios?
- What benefits and challenges do you anticipate in implementing the proposed approach? Are there particular matters that could be addressed through guidance material?

Periphyton

Periphyton is the slime and algae that grows on primarily hard-bottomed waterbodies such as beds of streams and rivers and requires certain environmental conditions to grow. While it is essential for healthy ecosystems, periphyton can have significant environmental impacts when it proliferates – it can degrade swimming and fishing spots and clog irrigation and water supply intakes. Periphyton is increasingly being used as an indicator of waterbody health, for example, in the Waikato River Authority's River Health and Wellbeing Report.

The Authority proposes that, where a wastewater treatment plant discharges to a hard bottomed or rocky stream or river, the nitrogen and phosphorous limits in the standard would not apply, and the treatment requirements will be set on the basis of a site-specific risk assessment. This represents a best practice approach and is commonly undertaken in existing consents. Based on the outcome of assessment, the infrastructure owner would develop an approach that would be incorporated in the discharge consent.

We would like your feedback on the following questions:

- What feedback do you have for managing periphyton in hard bottomed or rocky streams or rivers?
- What detail should be covered in guidance to support implementing this approach for managing periphyton?

A discharge to water standard for small wastewater treatment plants

The wastewater standard for discharges to water will set different treatment requirements for small plants that service very small communities given how many are in this category and their shared characteristics. These plants are significantly different to those that service larger towns and cities. Most of these plants are oxidation ponds that rely on passive treatment processes that require little operation and less frequent monitoring, at sites that are isolated and often do not have access to electricity.

These plants generally have a low impact on the receiving environment, particularly in relation to nutrients, compared to other sources in the surrounding catchment. Different standards are therefore proposed for small plants that are proportionate to their scale and operating requirements.

The criteria for small plants would be based on the influent $cBOD_5$ load entering the treatment plant.

- If an existing plant receives a mean annual influent $cBOD_5$ load of 85kg / day or less, it will qualify for the small plant standard.
- The small plant standard would only apply to existing plants with a mean annual influent load of this volume or less.

We have defined small plants using the average $cBOD_5$ rather than population served to account for situations where a plant may service only a small population but also receive waste from significant industrial or trade-waste sources.

New treatment plants, including those that meet the definition of small plants, will need to be designed and operated to meet the default standards.

Where the influent $cBOD_5$ load increased so that it no longer qualified for the small plant standard, it would need to be upgraded to meet the general standard. This would be specified as a condition of the consent.

The discussion document identifies potential specific characteristics for the small plant standard including:

- removal of treatment requirements for total nitrogen (TN) and total phosphorous (TP) – an ammoniacal nitrogen standard would continue to apply because of its toxicity

Feedback is sought on less stringent treatment requirements for other parameters:

- *E. coli* / enterococci could be made less stringent, particularly where limited human contact with receiving waters occurs
- a standard for dissolved $cBOD_5$ rather than $cBOD_5$, and TSS limit could be reduced recognising that solids discharged from a well operated wastewater treatment are likely to be algae solids
- operational requirements such as regular desludging of oxidation ponds – these would be included in the consent for the plant.

We would like your feedback on the following question:

- How should we define small plants and what changes to the default standards should apply to them?

7. A discharge to land environmental performance standard

The **proposed approach** is to establish a discharge to land environmental performance standard that:

- Sets out a risk-based framework, to determine what types of land treated wastewater may (or may not) be discharged to.
- Sets out treatment requirements, to reflect each risk category, for wastewater that is discharged to land.
- Imposes monitoring and reporting arrangements.
- Provides that, where a consent applicant is able to demonstrate that they will meet treatment requirements imposed by the standard, the consent authority must issue a discharge consent with a 35-year timeframe.

What is a 'discharge to land' from a wastewater treatment plant?

In this discussion document, discharges to land refer to discharges of treated wastewater from wastewater treatment plants only, rather than discharges from onsite arrangements such as septic tanks.

While the majority of treated wastewater is discharged to water (freshwater or coastal), approximately 35 percent of wastewater treatment plants discharge treated wastewater to land. Some treatment arrangements are seasonal, with wastewater being discharged to water during conditions when rainfall means wastewater levels are higher and conditions are less suitable for discharge to land. It is more common for small wastewater treatment plants to discharge to land. Discharging treated wastewater to land is often used to provide an additional layer of treatment – for example, through physical filtering.

Treated wastewater can be discharged to land using a variety of methods, to influence how quickly it is released and what method is used. The characteristics of the land will also impact how treated wastewater can be applied. Broadly, land application falls into the following categories:

- **Discharging to rapid infiltration basins:** where treated wastewater is applied to areas that are highly permeable. Compared to other methods, this requires a much smaller area of land but requires deep and highly porous soils, and typically require relatively high-level wastewater treatment beforehand.
- **Slow rate irrigation systems:** where treated wastewater is applied to the surface of a site with plants, crops or pasture.
- **Discharging to sub-soil:** where treated wastewater is applied through buried distribution lines, typically using drainage fields.
- **Discharge to wetlands:** where wetlands are unsealed and unlined, some or all of the discharge will infiltrate through the base of the wetland. This is typically considered a discharge to land. Some wetlands constructed for the purpose of wastewater treatment may collect the discharge at the end of the wetland and pump this to a land application site, this would also be considered a discharge to land.
- **Discharging to land where there is human contact (for example, parks or golf courses):** this is typically done using slow-rate surface irrigation, usually with a much slower flow rate.
- **Mixed wastewater discharge systems:** in some situations, depending on factors such as weather, treated wastewater is only discharged to land for part of the year. Heavy rainfall compromises the ability of the land to absorb discharges.

Discharging to land is technically more complex than discharging to water, for several reasons:

- The topography of the land used will impact the degree of soil erosion and runoff, what plants are suitable and which wastewater disposal system should be used.
- Climate conditions impact how feasible land discharges are.
- Some soils do not have capacity to absorb wastewater or may become oversaturated over time.
- Land-based discharges can lead to potential contamination of water – particularly through nitrogen leaching.
- As the distance between land disposal sites and wastewater treatment plants increases, so do the capital and operating costs.

Rapid infiltration basins are not covered by the Standard

At this stage, the proposed standard is limited to low-rate infiltration arrangements. This is because there are some fundamental differences in design and operation compared to slow-rate irrigation systems. As a result, it is anticipated that the design and application of limits on nutrients and pathogen loads for rapid infiltration systems will require detailed, site-specific assessments. Given the complex nature of land discharge and the need for further technical work, rapid infiltration systems will be addressed in a subsequent standard.

Current arrangements for discharges to land

Resource consents set requirements relating to matters such as the quality and volume of the discharge, and include treatment requirements relating to particular contaminants that are potentially harmful. Currently, there are no standardised consent conditions for wastewater discharged to lands. This creates variation in what contaminants are covered in consents and what limits apply. This has impacts on network operators – in their ability to plan, design and operate wastewater infrastructure.

Some regional plans include policies that promote land-based disposal of wastewater, for example:

- The proposed regional plan for Northland states that an application for a consent to discharge to water resource consent will generally not be granted unless discharge to land has been considered and found not to be environmentally, economically or practically viable (D.4.2 of Proposed Regional Plan, 2024).
- The Greater Wellington Regional Council Operative Natural Resources Plan indicates a preference for land-based discharge of wastewater. New discharges of treated wastewater to coastal water are discouraged and new wastewater discharges to freshwater are to be avoided unless discharge to land is not practicable.

The New Zealand Land Treatment Collective has developed the *New Zealand Guidelines for Utilisation of Sewage Effluent (2000)*. These guidelines have been designed to support network operators and consenting authorities to consider relevant factors for planning, design, consenting, management, and monitoring of a land treatment system.

Relationship with recycling treated wastewater for non-potable reuse

Some jurisdictions have treatment standards for reuse of treated water for non-potable use – for example, to irrigate sports fields, parks, or horticulture, or for dust suppression. There are broader conversations happening in New Zealand about how to reuse treated wastewater for non-potable purposes. While this is out of scope for the first set of wastewater standards, it may be picked up in future – particularly with increasing demand to consider alternative water sources with population growth and pressure from climate change.

Opportunity

A national environmental standard for discharges to land informs site selection and evaluation, provides certainty for what limits need to be met through consents, and confirms what monitoring and reporting requirements apply.

While the standard doesn't determine how wastewater should be managed, it will support councils to have discussions with communities about where treated wastewater should be discharged and help them evaluate the trade-offs and costs of different options.

Proposed approach: discharge to land environmental performance standard for wastewater treatment plants

Risk management assessment for specific types of land

The proposal is for a risk management assessment of the site and its suitability, which can be applied to specific land scenarios. This approach is a common way to consider whether a potential site is appropriate to discharge to, ahead of incurring significant expense through technical assessments.

The feasibility of potential sites is assessed using a baseline assessment, which will allow a network owner to assess the suitability of land and the treatment requirements early in the process. This assessment also allows risks to be identified, managed and mitigated in a way that will allow land discharge to be a viable alternative to discharge to water, especially for smaller wastewater treatment plants.

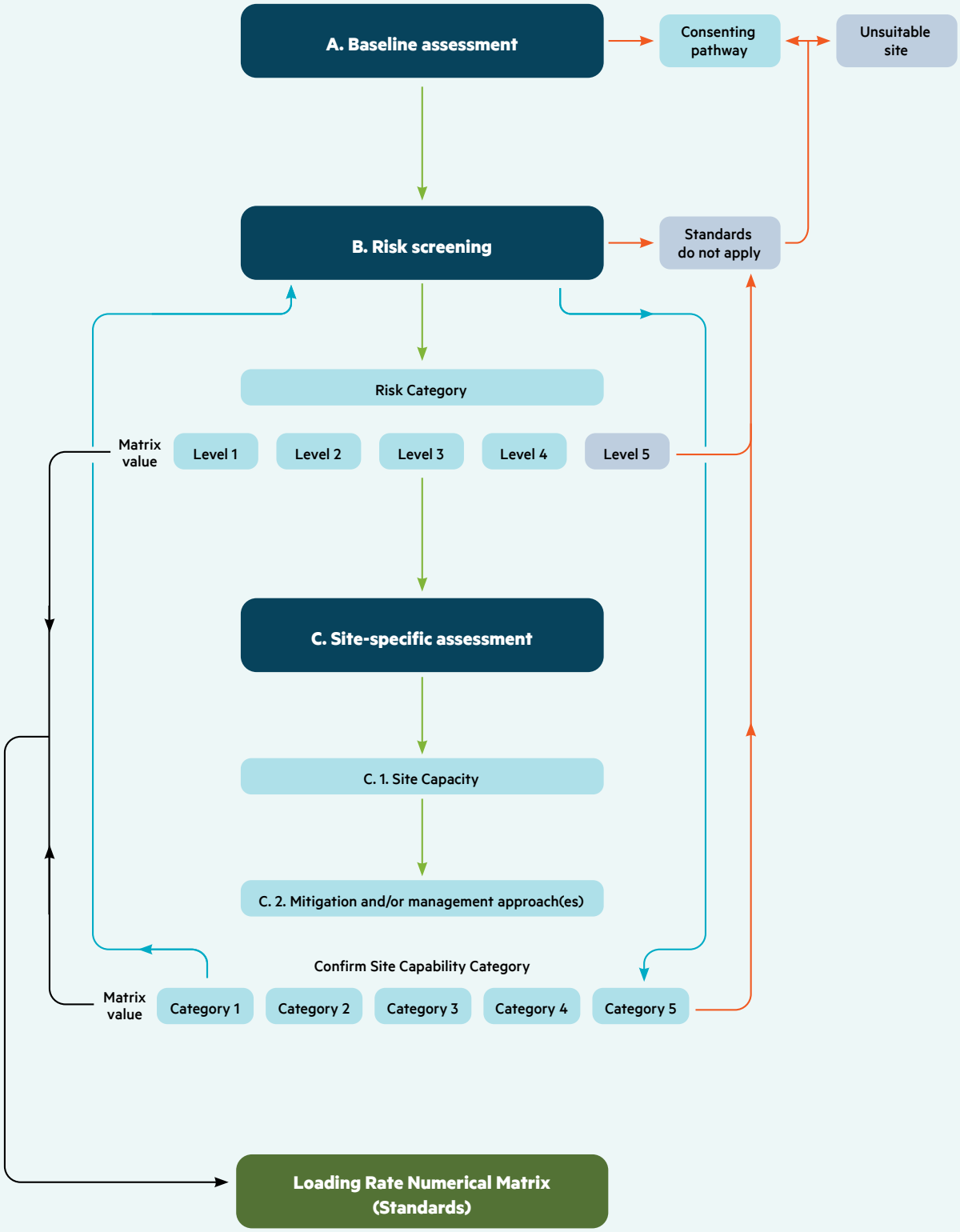
To encourage standardisation, while accounting for variables that influence site suitability, we have developed a risk-based framework that ensures all relevant factors are considered. The risk-based approach will consider a range of variables to determine a risk class for the land which will then set treatment requirements and application limits that apply. Detail about this approach and how it will apply is set out in **Appendix Four**.

The risk-based approach is comprised of three components:

- a desktop feasibility assessment of prospective land (to consider factors such as climate and underlying geology);
- a risk screening assessment which generates a score that to indicate the risk category; and
- a site-specific assessment, which determines the capability of the site and identifies necessary mitigation measures and management approaches.

A diagram outlining the risk assessment process is set out below:

Preliminary assessment



A baseline assessment will confirm whether a site is suitable to apply to standards to. This assessment will consider items such as underlying geology and groundwater, physical attributes of the site such as topography and size, and current or proposed land uses.

In situations where potential sites are deemed unsuitable for discharging treated wastewater, this is generally intended to prevent risks of:

- adversely impacting public health.
- run-off, erosion and reduced infiltration efficiency (for example, where discharged at surface or above surface irrigation on slopes greater than 10 degrees).
- infrastructure failure, groundwater contamination, surface runoff and environmental degradation (for example, where sites are geologically unstable).
- leaching and groundwater contamination in situations where soils are inappropriate for land application (for example, heavy clay and peat soils).
- compromising cultural heritage, traditional land use practices, and respect the values of local communities. This captures areas which are wāhi tapu, tūpuna, and other sites on Rarangi korero / New Zealand Heritage List.

Sites will also be deemed unsuitable where it is necessary to protect public health, preserve soil health and prevent contamination of crops (for example, irrigation to human food crops). Situations where a customised design approach is needed, for example, for partial land discharge arrangements such as riparian strip wetlands and mix-and-match schemes, are also considered unsuitable.

Suitable sites will move through to more detailed risk screening and site-specific assessments.

Risk screening involves applying a qualitative risk assessment tool, to identify pathways for contaminants (Total nitrogen, Total phosphorous and *E. coli*) to reach a receptor as a result of the discharge. This will consider environmental, public health, and social risks. A risk category between 1 – 4 will be assigned.

A site-specific assessment will involve a detailed check of key factors to understand the capability of the site to receive and manage a discharge. This will consider the proposed application method, detailed groundwater and soil assessments, and possible options for mitigating the effects of a discharge. A site capability category between 1 – 4 will be assigned.

		Site Capability Category			
		Site has decreasing ability to manage discharges →			
		1	2	3	4
Risk Category	1	Class 1	Class 1	Class 2	Class 3
Greater pathways for contamination ↓	2	Class 1	Class 2	Class 2	Class 3
	3	Class 2	Class 2	Class 2	Class 3
	4	Class 2	Class 2	Class 3	Standards don't apply (Category 5)

Combining the risk and site capability categories will then determine the overall Class for the site, and the subsequent loading rates and numeric limits that apply for parameters covered by the standard. The table below sets out which parameters are covered by this standard and the rationale for each parameter.

Parameter	Rationale
Total Phosphorus	The proposed discharge to land standard uses total nitrogen and phosphorus as they represent the sum of all forms of these nutrients present in wastewater. Managing these nutrients is important to avoid run-off to waterbodies causing eutrophication.
Total Nitrogen	
E. coli	The proposed discharge to land standard includes *E. coli* as it indicates the presence of pathogens and faecal pollution in soil.

The Class determines what numeric limits need to be met for parameters covered by the standard. Where no limit applies for *E. coli*, this assumes the pathway/receptor connection can be adequately removed. The loading rates and concentration with each class account for total load from a site, including from the discharge itself, the land on which it is applied and how it is managed.

Class	Total Nitrogen (kg/ha/year)	Total Phosphorous (kg/ha/year)	*E. coli* (public health) (cfu/100mL)
1	500	75	No limit
2	250	50	< 2,000
3	150	20	< 1,000

The hydraulic loading rate for discharges to land shall not exceed 5 mm/hour or 15 mm/application event. This application rate reflects the capacity of many soil types and is designed to avoid significant ponding or surface run-off.

Contaminants and parameters not covered by the proposed discharge to land standard

Some parameters, such as total suspended solids and heavy metals, are not directly covered by the proposed standard. These will need to be considered when designing and maintaining the land discharge system, to avoid operational risks such as blockages and surface run-off. Where contaminants are not covered by the standard, the usual resource consenting process would apply, and regional councils would set an appropriate limit.

We may expand the standards in future to include additional contaminants where there is a clear body of evidence and there would be benefit in having a nationally consistent approach.

We would like your feedback on the following questions:

- Are the proposed parameters appropriate to manage the impact of wastewater discharges to land?
- What benefits and challenges do you anticipate in implementing the proposed approach? Are there other particular matters that could be addressed through guidance material?

Management and Operation Plans

All consents that involve the discharge to wastewater to land will be required to be the subject of a Management and Operation Plan. These plans should include detail about:

- site restrictions
- site inspection requirements (general site operation)
- management requirements and recommendations
- maintenance and contingency requirements, and environmental monitoring
- environmental monitoring and reporting requirements.

Guidance will be developed by the Water Services Authority to support implementation of the standards. This will provide detail about the form and content of Management and Operation Plans, to support network operators.

Monitoring and reporting requirements

It is proposed that the following requirements will apply to all discharge to land arrangements:

- Groundwater monitoring will be required for all arrangements to assess the potential impact of the discharge.
  - All arrangements will have to monitor for pH, electrical conductivity, Total ammoniacal nitrogen, Total nitrogen, Nitrate nitrogen, dissolved reactive phosphorous, *E. coli* and Chloride.
  - Water quality monitoring must be undertaken every 3 months.
  - The number of monitoring wells differs depending on whether the bore is up gradient (minimum 1 well), down gradient (minimum 2 wells) or up gradient of sensitive receptors (site-specific).
- Soil monitoring will be required for all arrangements. While additional monitoring may be required through individual Management and Operation Plans, the following requirements apply as a starting point:
  - Frequency: soil monitoring must be undertaken as part of the baseline and site-specific assessments, and every 5 years thereafter.
  - Number of samples: soil samples are to be collected at a per hectare rate, determined by a Suitably Qualified Experienced Practitioner considering the treatment level, plant size and soil capability.
  - Parameters:
    - Cation exchange capacity
    - Exchangeable Cations (all measured by me/100g and base saturation %): Sodium, Potassium, Calcium, Magnesium.
    - Sodium absorption ratio
    - Soil pH
    - Total phosphorous
    - Olsen phosphorous

The following proposed reporting requirements would apply to all discharge to land arrangements:

- Any breach of a parameter must be reported by an operator to the relevant regional council as soon as reasonably possible after the breach is detected.
- An operator must publish compliance against parameters in applicable standards on a monthly basis, on a publicly available website maintained by the operator, and provide the report to the relevant regional council. Water quality monitoring and groundwater monitoring results should also be published and shared with the relevant regional council.
- Annual reporting is required of compliance against parameters in applicable standards to regional council and the Water Services Authority.

To provide confidence in how the standards are implemented, network operators will be required to engage a third party, on an annual basis, to audit compliance with matters covered by the standard, including monitoring and reporting requirements. Costs associated with third party auditing will be covered by network operators, rather than consenting authorities..

We would like your feedback on the following question:

- Are the monitoring and reporting requirements proportionate to the potential impacts of the different discharge scenarios?

8. A beneficial reuse of biosolids environmental performance standard

The **proposed approach** will establish an environmental performance standard for beneficial reuse of biosolids, including:

- setting out a grading system for processing biosolids, with corresponding activity status under the Resource Management Act 1991 for how and where biosolids can be reused.
- imposing additional requirements where biosolids have a lower grade.
- imposing monitoring and reporting requirements to reflect the grade of biosolids.

What are biosolids?

In the 2024 Network Environmental Performance Measures Guide, biosolids are defined as:

> *solids or semi-solids (sludge) from the wastewater treatment process, which have been physically and/or chemically treated to produce a semi-solid, nutrient-rich product.*

Biosolids are a nutrient and energy-rich by-product of the wastewater treatment process and are predominantly a mix of water and organic materials. During the treatment process, microorganisms digest wastewater and break down the organic solids. This separates into two streams – a liquid stream (wastewater) and a solids component (sewage sludge). The water content of the solids is further reduced through additional treatment processes (for example, centrifuges or solar drying), to produce biosolids. The quality and composition of biosolids depends on the profile of wastewater entering the treatment plant. Biosolids normally contain between 15 and 95 percent solids, which often contain:

- Macronutrients, including nitrogen, phosphorus, potassium and sulphur.
- Micronutrients, including copper, zinc, calcium, magnesium, iron, boron, molybdenum and manganese.

Biosolids usually contain other substances. These can include synthetic chemical compounds such as pharmaceuticals, microplastics, per- and poly-fluoroalkyl substances (PFAS), or heavy metals.

When managed and treated appropriately, biosolids can be used to improve soil conditions and provide nutrition for plants and forestry, rehabilitate land such as mines or landfills, and improve the microbiology and the water holding capacity of soils. Energy and gases can be extracted from biosolids, to generate heat energy, biogas and biofuel. Internationally, biosolids have also been used in construction (for example, biosolids bricks) and to produce protein- and fat-rich biomass.

The biosolids covered by this standard follow the above definition, and do not include untreated raw sewage sludge, septic tank sludge or sludge from industrial processes.

To realise the beneficial reuse of biosolids, the risks need to be carefully managed to protect environmental, cultural and public health. Typical risks from biosolids involve exposure from concentrated contaminants finding their way into waterbodies, or via uptake into crops, fish, birds, livestock and people. Some contaminants in biosolids can accumulate in the soil they are applied to, which can mean the land becomes contaminated and unsuitable for particular uses.

Current arrangements for managing biosolids

The Australian and New Zealand Biosolids Partnership has carried out regular surveys of wastewater treatment plants since 2010. Key findings from the 2023 survey indicates that Biosolids production has increased year on year in New Zealand[7] – the increase is not uniform across plants or regions.

Some examples of management of biosolids in New Zealand include:

- **Incineration:** the Tahuna wastewater treatment plant (owned and operated by Dunedin City Council) operates the only biosolids incinerator in Australasia.

7 Trends in the New Zealand Biosolids Industry: The Australia and New Zealand Biosolids Partnerships Survey (2024), Marcus Richardson (Stantec), Catherine Vero (Ekistica), Rob Tinholt (Australia New Zealand Biosolids Partnership).

- **Land rehabilitation:** this amounts to about 43 percent of biosolids. About 330 tonnes of treated biosolids a day from the Mangere wastewater treatment plant is being used to rehabilitate a retired quarry on neighbouring Puketutu Island.
- **Sludge minimisation facilities:** Wellington City Council is building a facility to reduce the volume of sludge generated by the Karori and Moa Point wastewater treatment plants. The facility will produce a dry, odourless product that can be more easily transported, and used as a soil conditioner and as fuel for industrial heat.
- **Storage:** it's estimated that 15 percent of wastewater treatment plants are storing biosolids. Geo-bags are sometimes used as part of the biosolids production process. Central Hawke's Bay Council used a series of geobags at its Waipawa and Waipukurau wastewater treatment plants to store and stabilise biosolids, prior to removing these from their respective sites.
- **Compost:** The MyNoke worm farm in Taupō produces compost from organic waste (including biosolids), which is purchased by the council and used as fertiliser in parks and reserves.
- **Landfill:** approximately 40 percent of biosolids[8] are disposed of at landfills.

Compared to other jurisdictions, such as Australia and those in the European Union, the rate of reuse of biosolids in New Zealand is low. The relatively high proportion of disposal of biosolids to landfill is an outlier in the international context. Landfills are reaching limits about how much biosolids they receive and the cost of disposing of them is increasing. As not all landfills accept biosolids, some councils truck biosolids for disposal outside their region, often at considerable expense.

Many small-scale wastewater treatment plants with oxidation ponds are not desludged regularly, despite expected operating and maintenance arrangements. This affects the operation of the ponds and increases the concentrations of contaminants, heavy metals and odour. The high number of small oxidation ponds in New Zealand means this is likely to be a significant national problem.

Planning and consenting arrangements

Regulatory settings for managing biosolids in New Zealand are quite different to other countries. Many other jurisdictions have national frameworks that provide for the beneficial reuse of biosolids, in ways that incentivise options other than disposal at landfill. Some regional plans (for example, the Auckland Unitary Plan) allow application of biosolids to land as a permitted activity, if the biosolids have met processing requirements around pathogens and contaminants such as heavy metals. Most regional plans do not have specific provision for biosolids, which means that application of biosolids to land may require a resource consent. This is likely to be a regulatory disincentive to the reuse of biosolids.

Guidelines for the Safe Application of Biosolids to Land in New Zealand

The *Guidelines for the Safe Application of Biosolids to Land in New Zealand* (the Guidelines) have been in place since 2003. The Guidelines were reviewed in 2017, and a subsequent comprehensive review of the guidelines is underway, coordinated by Water New Zealand. The draft *Beneficial Use of Biosolids and other Organic Materials on Land (Good Practice Guide)* was tested with the sector in late-2024 and is due to be published in mid-2025.

The guidelines aim to implement best practice arrangements for beneficial reuse of biosolids, including links through to planning controls to allow significantly broader reuse of biosolids in New Zealand than currently occurs. The Guidelines are known and understood by the sector, and have already been implemented in some plans and consents.

Proposed approach: environmental performance standard for beneficial reuse of biosolids

The Authority proposes a standard for beneficial reuse of biosolids that is based on the Guidelines. The current comprehensive revision of these guidelines has been subject to extensive technical review, together with engagement with sector experts.

8 As above.

The core elements of the proposed standard are as follows:

- Set out a grading system for processing of biosolids. The grade will reflect the extent to which the pathogen content and vector attraction has been controlled, as well as the level of metals and organic chemical contaminants in the product.
- Application of biosolids that have been processed to the highest grade to land will be treated as a permitted activity. Biosolids that have been processed to lower grades will be a controlled or restricted discretionary activity.
- Exclusion periods will apply where biosolids have a lower pathogen grade depending on the land use – for example, where there is public access, or for permitted types of horticulture or agriculture.
- The nitrogen application rate for biosolids must not exceed, at maximum, an average of 200kg total nitrogen per hectare per year.

Grading system

The Guidelines contain detailed procedures for the monitoring and sampling of biosolids to ensure that end-products are appropriately categorised, and subsequently managed in their reuse. Biosolid producers will need to develop a detailed process and product monitoring programme in accordance with the Guidelines.

The proposed grading system is designed to differentiate between organic products that are of low risk and those that contain pathogens and/or contaminants that may pose a risk to the receptors. Using this system, biosolids are to be categorised by two grades, as follows:

- **Stabilisation grade, A or B.** This is determined by the pathogen content of the product and whether or not an approved pathogen reduction procedure and an approved vector attraction reduction method have been implemented.
  - » A product is considered Grade A if:
    - ~ It has a documented quality assurance system
    - ~ It has undergone at least one of the listed pathogen reduction processes
    - ~ It has undergone at least one of the listed vector attraction reduction methods
    - ~ It meets all listed product pathogen standards after processing but prior to application
  - » A product is considered Grade B if:
    - ~ It has a documented quality assurance system
    - ~ It has undergone at least one of the accepted vector attraction reduction methods
  - » If a product does not attain Grade B stabilisation, it is not classified
- **Contaminant grade, 1 or 2.** This is determined by the levels of metals and organic contaminants in the product.
  - » Grade 1 is a product that has compliant levels for every contaminant
  - » Grade 2 is not compliant for at least one of the contaminants.

Confirmation of pathogen and contaminant grades will require two sets of sampling:

- » Verification sampling demonstrates whether a treatment process is producing a final product of consistent quality and is typified by a high-frequency sampling regime.
- » Routine sampling is required to demonstrate continued compliance with the product standards.

The following table sets out the proposed approach for grading beneficial reuse of biosolids:

	Contaminant grade 1	Contaminant grade 2
Stabilisation Grade A	Permitted activity (provided all activity standards are met)	Restricted discretionary activity (provided all activity standards are met)
Stabilisation Grade B	Controlled activity (provided all activity standards are met)	

Consenting approach

The Authority proposes to establish Permitted, Controlled, and Restricted Discretionary consenting pathways for the reuse of biosolids, depending on their categorisation grade. Verified monitoring and sampling of the biosolid products will be a condition of the reuse as either a Permitted, or Restricted Discretionary Activity.

In situations where the proposed reuse of a Grade A1 or B1 biosolid does not meet the applicable activity standards, the proposal would be considered a restricted discretionary activity. Should a biosolid not receive a grade under the framework – for example, where a vector attraction reduction method has not been completed – reusing the biosolids would be assessed by the relevant regional council through the consenting process. When the biosolids standard is made, it will be applied through applications for resource consents.

We are seeking feedback on appropriate Permitted, Controlled, and Restricted Discretionary activity standards and subsequent matters of control and restricted discretion. Common examples of such provisions from rules around the country are provided below.

Examples of qualifying criteria for the reuse of biosolids

(1) Biosolid application must be to land only and must avoid groundwater or surface water contamination

(2) Biosolids may not be applied to certain areas or land types such as:

  (a) wāhi tapu or sites of cultural significance

  (b) water supply protection zones

  (c) sites with geographical, geological or hydrological constraints

(3) Buffer requirements from:

  (a) property boundary;

  (b) surface water body and the coastal marine area;

(4) Restrictions on supplementary land uses such as land used for food production or residential areas.

(5) Verification requirements for grades of bio-solids.

(6) Restrictions on the production of offensive or objectionable odour or dust.

(7) Specific requirements for record keeping and reporting such as:

  (a) the nature of the biosolids including dry solids content, application, volume, location and frequency; and

  (b) the total nitrogen mass-load applied per hectare per annum.

(8) Baseline soil testing, or testing where biosolids have been applied to land continuously for more than 5 years

We would like your feedback on the following questions:

- What matters of control or restricted discretion should sit with consenting authorities to manage the reuse of biosolids?
- What should the permitted activity standards include?

Approach for managing contaminants of emerging concern in biosolids

Global research continues into the significance of contaminants of emerging concern and the implications for beneficial reuse of biosolids. At this stage, some contaminants of emerging concern are not included in the proposed standard (for example, PFAS). Instead, the Authority proposes keeping the matter under active review and may update the standard as new developments occur.

This will mean we are well-positioned to leverage research by other international regulators, as well as agencies such as New Zealand's Environmental Protection Authority (EPA). The profile of biosolids in New Zealand is likely to mean international limits cannot be applied directly, and work would be required, alongside the Ministry of Health and the EPA, to determine what controls are appropriate. Taking a watching brief approach also means we can observe longer-term trends, such as whether and how contaminants of emerging concern accumulate over time.

We would like feedback on two proposed options about how PFAS, as a contaminant of emerging concern, should be addressed in the short-term:

- **Option One:** Provide guidance to support implementation of the standards that could include advice on contaminants of potential concern – such as organic contaminants like microplastics or PFAS. These areas could be brought into the standard over time, as research continues and there is greater capacity in the New Zealand market to test for contaminants of emerging concern.
- **Option Two:** This option would build on guidance issued as part of Option One. Alongside guidance, risk analysis could be undertaken to determine which wastewater treatment plants should test for contaminants of emerging concern. This would provide a local baseline for quantities of these contaminants that might trigger stricter regulation.

We would like your feedback on the following question:

- How should contaminants of emerging concern in biosolids be addressed in the short-term?

9. Management of overflows and bypasses

The **proposed approach** will establish risk-based planning, monitoring and reporting arrangements for wastewater network overflows and bypasses from wastewater treatment plants, including:

- Requiring network operators to use wastewater risk management plans to identify where risks of overflows are, and how they should be managed, controlled, monitored and eliminated.
- Imposing monitoring and reporting requirements for overflows from wastewater networks.
- Making all overflows a controlled activity under the Resource Management Act 1991, consistent with proposed changes through the Local Government (Water Services) Bill.

What are overflows and bypasses?

Overflows occur where untreated or partially treated wastewater escapes from a wastewater network into the environment. Overflows of untreated wastewater are a public health risk that impacts communities, compromising areas used for swimming, recreational activities and mahinga kai (food collection). Overflows are inevitable. In the 2021/2022 financial year, the Water New Zealand National Performance Review reported a total of 3,121 overflows across New Zealand and this number doesn't include instances where overflows are not reported.

Overflows are caused by a range of factors:

- Constrained capacity to accommodate population growth, which increases the rate and frequency of overflows due to demand on the network.
- Blockages such as build-up of fat and oil, tree roots or incorrectly marketed products (e.g., flushable wipes).
- Plant failures or equipment damage such as broken pipes or pump breakdown.
- Flows that exceed system capacity, either caused by significant inflow or infiltration[9].

Wastewater networks are particularly vulnerable to impacts of climate change, with increasing severe weather events likely to exacerbate the frequency and impact of overflows.[10]

Almost all wastewater networks are designed to overflow when the amount of water coming into the pipe network exceeds the capacity of the network and/or treatment plant. Some networks are designed so wastewater overflows into the stormwater network when the capacity of the wastewater network is exceeded – for example, during heavy rainfall. Similarly, some older (combined) networks collect both wastewater and stormwater, which means stormwater is also received by the wastewater treatment plant.

Engineered overflow points are used to manage when and where overflows occur. Most networks are designed so wastewater overflows caused by constrained capacity go into the stormwater network through constructed (engineered) overflow points. Even with engineered overflow points, uncontrolled overflows still occur at network points that aren't designed to overflow (such as manholes or gully traps). Uncontrolled overflows are typically caused by blockages or faults in a network, rather than high flows.

Bypasses occur where partially treated wastewater is diverted to protect a treatment plant

A bypass occurs where partially treated wastewater is diverted past the normal treatment plant route and discharged to the environment. Plants are designed to do this to prevent issues with equipment and systems within the treatment plant, that can occur during periods of high rainfall and inflow.

Current arrangements for monitoring, reporting and managing network overflows

The approach to managing overflows varies significantly across New Zealand. While wastewater treatment plant discharges are consented, many overflows from wastewater networks remain unconsented or partially consented. Some networks have a comprehensive consent that covers overflows from the entire network, while others have consents for specific overflow points.

9 Inflow is generally where stormwater gets into the wastewater network from illegal roof connections, low gully traps or cross-connected stormwater systems. Infiltration occurs when water from saturated surrounding soil enters the wastewater network through defects in pipe joints, damaged pipes, private laterals in poor condition and/or offset manhole risers.

10 'Impacts and implications of climate change on wastewater systems: A New Zealand Perspective' (2021), James Hughes, Katherine Cowper-Heays, Erica Olesson, Rob Bell and Adolf Stroombergen.

From a stocktake of regional plans, around half of regional councils prohibit network overflows, or consider them emergency discharges under section 330 of the Resource Management Act 1991. This approach means that overflows often remain unconsented, and therefore subject to limited or no monitoring or reporting, or requirements for network operators to remove the cause or mitigate any adverse effects from the overflow. As overflows are inevitable, this approach results in the problem being hidden and is not a long-term solution.

Similarly, there is no shared definition or approach to monitoring and reporting of overflows resulting in high variability across New Zealand. Some councils only record overflows that are reported by a member of the public. Others have taken a risk management approach, with telemetric monitoring and public reporting of high-risk overflows. As there isn't a common definition of what constitutes an overflow, councils may have different methods for counting and classifying them. This variability means it is difficult to build a clear picture of what causes overflows, and where and how frequently they occur.

In 2019, the Regional best practice guide for the management of wastewater overflows was developed[11] to provide a standardised framework and key performance targets for the response, monitoring and reporting of wastewater overflows across the Bay of Plenty region. In 2022, Water New Zealand published a Good Practice Guide for Addressing Wet Weather Wastewater Network Overflow Performance. While the guide provides a common framework for wastewater network service providers to implement, it appears uptake has been minimal.

What information about overflows is publicly available?

Despite the impact on public health and water-based recreation, it is often difficult for the public to find reliable, real-time information about overflows when they occur. Due to poor information about where and when overflows occur, even network owners can't properly manage their networks to reduce the frequency of overflows to improve public health and environmental outcomes.

Nevertheless, some tools provide publicly available information on water pollution risk and swim safety, including where water quality has been impacted by overflows. These include:

- Land, Air, Water Aotearoa (LAWA) presents national environmental data (collected by regional councils and unitary authorities) and information about river, lake and recreational water quality, alongside a range of other environmental health topics
- The SafeSwim programme in Auckland and Northland provides transparent real-time information about the risk of swimming at specific locations. SafeSwim draws on a range of inputs, including real-time monitoring of wastewater and stormwater networks (and consequently, overflows), alongside predictive models.

Network Environmental Performance Measures

As part of mandatory requirements set by the Authority, network operators are now required to monitor and report on the environmental performance of wastewater networks. From mid-2024, network operators were required to start recording wastewater overflow information for reporting to the Authority by 30 September 2025. This requires operators to record overflows against consistent definitions and causes. This information will be summarised in an annual network environmental performance report and published on the Authority's website.

Improving monitoring and reporting arrangements for overflows

Given the public health and environmental impacts and variability in how overflows are monitored, reported and managed, the wastewater standards present an opportunity to set out a risk-based monitoring and reporting regime that:

- Creates greater consistency in how overflows are categorised, managed and reported.
- Supports network operators to prioritise, manage and reduce wastewater overflows.
- Ensures there is greater transparency of public information about overflows affecting areas where people might swim or gather shellfish, and how operators are trying to reduce them.
- Supports regional councils to monitor compliance with wastewater overflow consents and to take proportionate enforcement action where required.

Proposed approach for managing overflows

The Authority is proposing a risk-based approach, that gives network operators the tools to prioritise addressing overflows based on the risk, impact and likelihood of overflows, within their means. The proposed requirements would apply to all wastewater network overflows, including those from combined wastewater and stormwater networks.

11 This document was developed by the Bay of Plenty Regional Wastewater Management Group. This group includes representatives from the Bay of Plenty Regional Council, relevant territorial authorities and the Toi Te Ora Public Health Service.

Consistent with the Authority's approach to mandatory network environmental performance reporting, the Authority proposes defining overflows as:

> *Instances where untreated or partially treated wastewater (or stormwater contaminated with wastewater) spills, surcharges, discharges or otherwise escapes from a wastewater network to the external environment. This may be due to different causes and may be released via either constructed (engineered) or unconstructed overflow points. Engineered overflow points are designed and intended to act as an emergency relief valve during instances of capacity overload in the network, whereas unconstructed overflow points are not (but inadvertently perform this function).*[12]

The Authority proposes defining bypasses as:

> *Bypasses are discharges where the wastewater is not fully treated due to inlet flow rates exceeding the design capacity of a wastewater treatment plant, and then discharged into a receiving environment.*

We would like your feedback on the following questions:

- Is the current definition of overflow fit-for-purpose, and if not, what changes do you suggest?
- Does the proposed definition of bypasses adequately cover these situations, and if not, what changes do you suggest?

Wastewater Network Risk Management Plans

The Authority proposes that wastewater network risk management plans will be required for all wastewater networks, to ensure network operators identify how risks and hazards from both the network and treatment plants, including overflows, will be managed.

The Authority will issue requirements under section 138 of the Water Services Act 2021 about what should be covered in the overflow section of wastewater network risk management plans. In the first instance, plans should include:

(a) a map of controlled and uncontrolled overflow points across a network: understanding where these points are in a network is critical to developing approaches to manage overflows. It will also form the basis of monitoring and reporting arrangements.

(b) a list of all overflow points in the network, that are categorised based on a risk framework: the risk framework looks at the likelihood and potential impact of an overflow and allocates a corresponding level of priority.

(c) the arrangements relating to any bypass overflows for a wastewater treatment plant, with a risk assessment of these arrangements;

(d) a summary of approaches taken by the network operator to manage, control, monitor or eliminate risks: approaches for managing overflows are likely to differ depending on the size, scale and complexity of the wastewater network, as well as the resourcing and funding available to the network operator.

In developing wastewater network risk management plans, network operators will be expected to engage with communities, including mana whenua, to understand where risks of overflows are, and how they should be managed, controlled, monitored or eliminated. The plans should demonstrate this engagement has happened and how it has influenced approaches to manage, control, monitor or eliminate risks.

There are existing examples of overflow management plans throughout the country, for example those developed by WaterCare or required by Greater Wellington Regional Council. Once finalised, the plans will need to be shared on a publicly available website and provided to regional councils and other interested parties, such as iwi and hapū.

We would like your feedback on the following questions:

- How should Wastewater Risk Management Plans relate to existing risk management planning tools, and if the Local Government (Water Services) Bill proceeds, stormwater risk management plans?
- What should be covered in guidance to support developing wastewater risk management plans?
- We understand wastewater risk management plans are already required in some regions – what approaches have worked well and where is there room for improvement?
- How should Wastewater Risk Management Plans interact with the proposed consenting pathways for overflows and bypasses?

Making wastewater network overflows and bypasses a controlled activity

The Local Government (Water Services) Bill proposes to amend the Water Services Act and Resource Management Act to allow the Authority to set resource consent activity status, for activities performance in accordance with the standards. Subject to enactment, the Authority is proposing to make all overflows from wastewater networks, together with bypasses from a wastewater plant, a controlled activity as part of this wastewater standard. Making overflows a controlled activity means that all wastewater overflows and bypasses will need to be consented.

12 Network Environmental Performance Measures and Guide 2024.

This is a significant change from the current approach to consenting wastewater network overflows for some regions. A consistently applied controlled activity creates a standard consenting pathway to ensure overflows are recorded and reported, which will increase visibility over time and improve our understanding of network performance. Specific approaches to reducing the impact and frequency of overflows can then also be set by consenting authorities through consent conditions.

An example of a controlled activity rule for network overflows from the Auckland Unitary Plan is provided below.

Example of controlled activity for network overflows from the Auckland Unitary Plan:

The discharge of untreated wastewater overflows onto or into land and/or into water from an existing separated wastewater network servicing existing urban areas (excluding wastewater treatment plants) is a Controlled Activity.

Controlled Activity Standards

(1) A programme must be in place to reduce network overflows to an average of no more than two events per discharge location per annum by 2040.

(2) Emergency overflow points must be designed and located so that any discharges minimise nuisance, damage, public health risk, and ecological effects and do not cause scouring and erosion at the point of discharge.

(3) A wastewater network operations plan must be prepared, and implemented, which provides all of the following:

- (a) a description of the wastewater network;
- (b) maintenance procedures and levels of service for key elements of the network;
- (c) operational procedures including response to system failures, incidents and significant overflow events; and
- (d) monitoring and reporting procedures.

(4) All pump stations must be continuously monitored by telemetry so that the wastewater network operator is immediately informed of any pump station failure or fault that may result in an overflow.

(5) The wastewater network must be operated to prevent dry weather overflows during normal operation of the network, and the network operator must have an operational and maintenance programme in place that minimises unforeseen dry weather overflows to the environment.

Matters of Control

(1) for the discharge of untreated wastewater overflows onto or into land and/or into water from an existing separated wastewater network servicing existing urban areas (excluding wastewater treatment plants):

- (a) the implementation of the overflow reduction programme;
- (b) the mitigation of any adverse effects associated with the discharges, including effects on potable water supplies and public health;
- (c) the implementation of the wastewater network operations plan and the operations and maintenance programme;
- (d) associated monitoring and reporting; and
- (e) the duration of the consent and the timing and nature of reviews of consent conditions.

Assessment Criteria

(1) for the discharge of untreated wastewater overflows onto or into land and/or into water from an existing separated wastewater network servicing existing urban areas (excluding wastewater treatment plants):

- (a) the extent to which the overflow reduction programme, the network operations plan and operational and maintenance programme:
  - (i) set out the best practicable option for preventing or minimising adverse effects;
  - (ii) adequately address wastewater discharges generated as a result of potential urban growth, urban redevelopment, and land use intensification within the wastewater catchment, taking into account the growth and intensification provisions of the Plan; and
  - (iii) prevent or minimise adverse effects of wastewater overflows on public health, potable water supplies, freshwater and coastal waters.

We would like your feedback on the following questions:

- Do you support setting all wastewater network overflows as controlled activity?
- What matters of control should remain with consenting authorities to reduce the impact and frequency of overflows and bypasses?
- Are there examples of existing approaches to managing overflows that would work well as matters of control?
- What other factors need to be considered when making overflows and bypasses a controlled activity? What matters would be helpful to address through guidance?
- What transition arrangements should apply for scenarios where Regional Councils already have consenting pathways for overflows?

Monitoring and reporting requirements

The Authority is also proposing to create a wastewater standard, under section 138 of the Water Services Act 2021, that will set out what monitoring and reporting requirements apply for overflows from wastewater networks.

Monitoring

Monitoring arrangements depend on the type of overflow point. As a minimum, operators would be required to have telemetric monitoring for:

- all engineered overflow points or discharge points that are classified as high risk in wastewater risk management plans;
- all new constructed overflow points and pump stations; and
- all uncontrolled discharge points (using manhole sensors) where there are high frequency overflows.

While installing telemetry at all overflow points is best practice, this may not be immediately feasible from a financial and practical perspective. To reflect this, the Authority proposes staggering the telemetry installation requirements, with high-risk overflows requiring monitoring to be installed sooner.

Reporting requirements are also influenced by the risk assessment of overflows. Public reporting – particularly following overflow events – is critical to improving public transparency through having readily accessible information about overflows and the impacts on recreation and food gathering. Longer-term, after-the-fact reporting supports regional councils, alongside the Authority, to understand where overflows occur and what causes them. In the longer term, this information may be used to set targets, to compel network operators to reduce overflows over time.

Reporting

Reporting is separated into first response and follow-up reporting.

First response reporting refers to the information that is important for the public health of the community immediately affected by the overflow. This includes information about the time and extent of the overflow, alongside any public health warnings. To ensure the information is available to the affected community at the time they need it, this information should be shared on a publicly accessible website such as the council's website or an online platform such as SafeSwim. This information should be accompanied by public health information (for example, signage) at the site of the overflow, as well as engaging with the local Medical Officer of Health. The following timeframes apply for first response reporting:

- For overflows categorised as high risk: within 2 hours of the event.
- For overflows categorised as medium risk: within 24 hours of the event.
- For overflows categorised as low risk: within 48 hours of the event.

Follow-up reporting is intended to demonstrate how the overflow was managed. This also includes an assessment of the public health and environmental impact of the overflow. As with first response reporting, this should be shared on a publicly accessible website. It should also be provided directly to the relevant regional council, alongside mana whenua and any community groups with a direct interest. This reporting must be completed within two weeks of the overflow event being resolved. If an overflow event lasts more than two weeks, then updates are required to be provided every two weeks following the approach outlined under the first response reporting.

We would like your feedback on the following questions:

- What matters should be covered in guidance material to support monitoring and reporting requirements?
- Do you support establishing a framework that determines how overflows are managed based on risk?

10. Arrangements for wastewater treatment plants operating on expired consents under section 124 of the Resource Management Act 1991

Approximately 20 percent of wastewater treatment plants are operating under expired consents. Treatment plants can do so for an undefined period under section 124 of the Resource Management Act 1991 (RMA), provided an application to renew their consent was lodged within a specified timeframe.

Plants currently operate on an expired consent for an average of five years, with one operating on an expired consent for 24 years.

The Local Government (Water Services) Bill includes changes to the RMA which, if enacted, would allow a time limit to be placed on the period that a wastewater treatment plant may operate on an expired consent under section 124. This is because once wastewater standards are set, the treatment requirements for a plant will be certain and the network operator will be able to engage with its community about the options, plan for, and fund any necessary upgrades.

The Authority proposes that a wastewater treatment plant may only operate on an expired consent under section 124 for a maximum of 2 years. The standards would specify that this arrangement will not commence for 5 years, to give those territorial authorities with plants on expired consents time to plan for and fund the necessary upgrades.

We would like your feedback on the following questions:

- How long should wastewater treatment plants be able to operate under section 124 of the RMA once wastewater standards have been set?

Appendix One: Glossary

Term	Definition and Source
Application Method	The specific technique or approach used to apply a substance, treatment, or technology to a wastewater system. This includes the methods, equipment, and procedures employed to achieve the desired treatment or effect, ensuring efficiency, effectiveness, and compliance with relevant Standards. Application methodologies may vary depending on the treatment type, such as chemical addition, filtration, or biological processes, and are designed to optimize the removal or reduction of pollutants. Source: United States Environmental Protection Agency
Assimilative Capacity	The maximum loading rate of a particular pollutant that can be tolerated or processed by the receiving environment without causing significant degradation to the quality of the ecosystem and hence the community values it supports. Source: Australian and New Zealand Guidelines for Fresh and Marine Water Quality
Baseline Assessment	An initial evaluation or desktop exercise conducted to identify and assess potential sites suitable for the application of treated wastewater. This assessment typically involves reviewing high level existing environmental, geological, and land use information to determine the suitability of land parcel for wastewater discharge, without the need for immediate site-specific assessment that would require fieldwork i.e. a first qualitative base for a proposed/potential site. Source: Discharge to Land Technical Report (2025)
Biosolids	Solids or semi-solids (sludge) from the wastewater treatment process, which have been physically and/or chemically treated to produce a semi-solid, nutrient-rich product. Source: Network Environmental Performance Measures and Guide 2024
Bypass	**Proposed definition** An intentional diversion of partially treated wastewater from a portion of the treatment facility. A bypass may also occur in a controlled way if operators need to release to shut down equipment for repairs, and there is no way to reroute the wastewater. Consents may provide specific timings, frequencies, circumstances and reporting requirements.
Contaminant	Any substance (including heavy metals, organic compounds and micro-organisms) that, either by itself or in combination with other substances, when discharged onto or into land or water, changes or is likely to change the physical, chemical or biological condition of that land or water. Source: Resource Management Act 1991
Controlled Activity	Activities described by section 87A(2) of the RMA which require a resource consent from the Regional Council. Source: Resource Management Act 1991
Discharge	Volume of treated wastewater that is released from a wastewater treatment plant into the receiving environment. Source: Discharge to Land Technical Report
Dilution Ratio	Ratio of receiving environment flowrate/volume to wastewater discharge flowrate/volume. A measure of extent of dilution that takes place within the receiving environment. Source: Discharge to Water Technical Report

Overflows	**Proposed definition** Instances where untreated or partially treated wastewater (or stormwater contaminated with wastewater) spills, surcharges, discharges or otherwise escapes from a wastewater network to the external environment. This may be due to different causes and may be released via either constructed (engineered) or unconstructed overflow points. Engineered overflow points are designed and intended to act as an emergency relief valve during instances of capacity overload in the network, whereas unconstructed overflow points are not (but inadvertently performs this function. Source: Network Environmental Performance Measures and Guide 2024
Pathogens	Disease-causing micro-organisms such as certain bacteria, viruses and parasites. Source: Discharge to Water Technical Report
Periphyton	A group of organisms in aquatic environments specialised to live on and exploit much larger (usually inert) surfaces. Groups of organisms include fungi, bacteria, protozoa, and algae. The most conspicuous group is the algae and this group is usually the focus of most studies of periphyton. Source: New Zealand Periphyton Guideline 2000
Primary treatment	The separation of suspended material from wastewater in septic tanks, primary settling chambers, or other structures, before effluent discharge to either a secondary treatment process, or to a land application system. Source: AS/NZS 1547:2012
Quantitative Microbial Risk Assessment	A quantitative way of estimating the health risk to people who are swimming in and consuming raw shellfish harvested from waters which are near sources of microbial contamination such as river plumes and wastewater outfalls. Source: NIWA Microbial Monitoring factsheet
Receiving Environment	Any waterbody receiving discharge from a wastewater treatment plant. Source: Adapted from the National Policy Statement on Freshwater Management
Secondary treatment	Aerobic biological processing and settling or filtering of effluent received from a primary treatment unit. Source: AS/NZS 1547:2012
Wāhi tapu	Sacred place, sacred site – a place subject to long-term ritual restrictions on access or use, i.e. a burial ground, a battle site or a place where tapu objects were placed Source: Te Aka Māori dictionary

Appendix Two: Relationship with Local Water Done Well and Local Government (Water Services) Bill

As part of its Local Water Done Well policy programme, the Government has introduced the Local Government (Water Services) Bill (the Bill) into Parliament to propose changes to how water services are delivered in New Zealand. You can find more detail about the Bill here.

This Bill includes proposals to change the legislative arrangements that apply to wastewater standards in both the Water Services Act 2021 and the Resource Management Act 1991. The main proposed areas of change that relate to this discussion document are:

Area of Change	Description
A single national standard to be applied in resource consents (with a limited set of exceptions)	Changes are proposed to the Resource Management Act 1991 providing that, where a wastewater environmental performance standard is made, a consent authority (regional council) may not grant a resource consent contrary to the standard and must include conditions that are *no more or less restrictive* than is necessary to give effect to the standard unless an "exception" applies. This establishes an absolute standard, for the matters that the standard covers. Regional councils will continue to be responsible for wastewater discharge consenting but will be required to apply the wastewater standards through consent conditions and be responsible for enforcing consent compliance.
Exceptions regime	While wastewater standards are intended to create certainty and national consistency, there will be cases where a national standard may be inappropriate. Exceptions (for example, the discharge to water standard not applying for discharges to natural wetlands) will be a component of a standard and developed and enacted through the same process as wastewater standards. In situations where an exception applies, the existing resource consent process is reverted to. This means regional councils determine consent conditions, as well as monitoring and reporting requirements, alongside consultation with the community.
Minimum consent duration	Shorter consent timeframes create uncertainty and can compromise the ability to take an affordable long-term investment approach. Where wastewater infrastructure has been renewed or upgraded to meet the new wastewater standards, it is proposed that a 35-year consent duration will apply.
Periodic review of standards	Wastewater standards will require periodic review to enable risks to receiving environments or people to be managed, and to take advantage of new technology. Changes to standards will apply at the start of the new consenting cycle. The Bill proposes changes to section 128 of the Resource Management Act 1991, so that the making or amendment of a wastewater environmental performance standard is a potential trigger for a review of resource consent conditions.
Standards may include activity status	Wastewater standards will be able to set the consenting status of an activity – for example, that aspects of wastewater management are a discretionary or controlled activity. This is intended to create a consistent approach to how consenting authorities consider certain activities or discharges from wastewater networks.
Standards will take precedence over national directions and plans	Where there is any inconsistency between a wastewater standard and a national direction or plan made under the RMA, the wastewater environmental performance standard will prevail.
Standards will be made by Order in Council	Wastewater standards will be enacted through regulations made by Order in Council on the recommendation of the Minister of Local Government. A Regulatory Impact Statement is prepared and considered alongside proposed wastewater standards, to ensure the costs and benefits are clearly understood.

Change in approach to Te Mana o te Wai	Existing requirements in the Act for decision-makers to give effect to Te Mana o te Wai will be replaced with a requirement to take account of the National Policy Statement for Freshwater Management and other relevant national directions and regional plans that relate to freshwater when exercising their functions.
Infrastructure design solutions	The Authority will be able to set infrastructure and operating requirements for wastewater treatment plants that, if met, will result in faster consenting processes (for example, via controlled activity status). An infrastructure design solution would specify most of the consent requirements for the infrastructure, and function as a design solution. Over time, this will enable network operators to standardise the design and procurement of infrastructure, and enable modular, off-the-shelf solutions to be installed. Proposed law changes will enable the Authority to develop infrastructure design solutions as part of the implementation of wastewater standards. These are initially likely to focus on small treatment plants. Proposals for infrastructure design solutions will be publicly consulted on.

The Bill was introduced in December 2024 to implement the proposed changes and is progressing through the select committee process. On current timing, the Bill is expected to be enacted in mid-2025. Feedback that relates to the proposed changes to legislation governing wastewater standards should be separately directed through the select committee process, which is led by the Department of Internal Affairs.

Arrangements for resource consents expiring in the short-term

Many territorial authorities will have wastewater treatment plants with resource consents that will expire in the period following enactment of wastewater standards. The Bill includes arrangements to extend existing resource consents, to expire two years following the commencement of the Bill. This will give councils time to plan for how standards will affect reconsenting decisions for wastewater infrastructure, alongside any required upgrades or renewals.

The detail about transition arrangements for wastewater standards is outlined in the Bill and complementary documents.

Appendix Three: Consultation questions

We would like your feedback on the following questions:

General

- Do you agree with the areas the first set of standards are proposed to cover?
- What areas should we prioritise to introduce wastewater standards in future?
- What topics should we cover in the guidance material to support implementation of the standards?
- Are there particular groups we should work with to develop guidance and if so, who?
- How should factors such as climate change, population growth, or consumer complaints be addressed when considering a 35-year consent term?

Discharge to Water

- How should we consider checks and balances to protect against situations where the degree of microbial contamination may change throughout the duration of a consent.
- Are the areas for exceptions appropriate to manage the impacts of discharges and do you anticipate implementation challenges?
- How should the exceptions be further defined to ensure there are no unintended consequences?
- Are the treatment limits, and monitoring and reporting requirements proportionate to the potential impacts of the different discharge scenarios?
- What benefits and challenges do you anticipate in implementing the proposed approach? Are there particular matters that could be addressed through guidance material?
- How should we define small plants and what changes to the default standards should apply to them?
- What feedback do you have for managing periphyton in hard bottomed or rocky streams or rivers?
- What detail should be covered in guidance to support implementing this approach for managing periphyton?

Discharge to Land

- Are the proposed parameters appropriate to manage the impact of wastewater discharges to land?
- What benefits and challenges do you anticipate in implementing the proposed approach? Are there other particular matters that could be addressed through guidance material?
- Are the monitoring and reporting requirements proportionate to the potential impacts of the different discharge scenarios?

Beneficial Reuse of Biosolids

- What matters of control or restricted discretion should sit with consenting authorities to manage the reuse of biosolids?
- What should the permitted activity standards include?
- How should contaminants of emerging concern in biosolids be addressed in the short-term?

Overflows and Bypasses

- Is the current definition of overflow fit-for-purpose, and if not, what changes do you suggest?
- Does the proposed definition of bypasses adequately cover these situations, and if not, what changes do you suggest?
- How should Wastewater Risk Management Plans relate to existing risk management planning tools, and if the Local Government (Water Services) Bill proceeds, stormwater risk management plans?
- What should be covered in guidance to support developing wastewater risk management plans?
- We understand wastewater risk management plans are already required in some regions – what approaches have worked well and where is there room for improvement?
- How should Wastewater Risk Management Plans interact with the proposed consenting pathways for overflows and bypasses?
- Do you support setting all wastewater network overflows as controlled activity?
- What matters of control should remain with consenting authorities to reduce the impact and frequency of overflows and bypasses?
- Are there examples of existing approaches to managing overflows that would work well as matters of control?
- What other factors need to be considered when making overflows and bypasses a controlled activity? What matters would be helpful to address through guidance?
- What transition arrangements should apply for scenarios where Regional Councils already have consenting pathways for overflows?
- What matters should be covered in guidance material to support monitoring and reporting requirements?
- Do you support establishing a framework that determines how overflows are managed based on risk?

Arrangements for wastewater treatment plants operating on section 124, Resource Management Act 1991

- How long should wastewater treatment plants be able to operate under section 124 of the RMA once wastewater standards have been set?

Appendix Four: Detail of the proposed approach for discharges to land

This section sets out detail of the proposed framework for discharging treated wastewater to land, including matters to be considered when determining whether to discharge to a proposed site and the numeric limits for the parameters covered by the proposed standard.

Further detail on how to implement the discharge to land standard will be set out in guidance material, to be released by the Water Services Authority once standards are enacted. Guidance will be tailored to support wastewater treatment plant operators as well as consenting authorities.

To determine whether treated wastewater can be discharged to land and what aspects of the discharge to land standard apply, the following process must be followed:

1. Baseline assessment: specific requirements will be set out in guidance to accompany the standards and are including but not limited to:
    a. Soil moisture assessment (e.g., to assess field capacity and seasonal variability)
    b. Existing desktop information:
        i. Site physical attributes (e.g., topography and whether a sufficient area of land is available)
        ii. Existing groundwater data and models (to understand depth, quality, flow direction, seasonal variation and sensitivity)
        iii. Available soil data (to understand soil type and drainage capacity)
        iv. Underlying geology
        v. Site contamination history
        vi. Current and proposed land use with the application area
        vii. Potential receptors, proximity and sensitivity (including environmental, social, cultural and to the built environment)
    c. Where insufficient information is available via desktop research, conduct a field-based investigation.
2. Risk screening, to assign a corresponding risk category: this involves applying a qualitative risk assessment tool, to identify pathways for contaminants (Total nitrogen, Total phosphorous and *E. coli*) to reach a receptor as a result of the discharge. Guidance accompanying the standards (to be published once the standards are enacted) will include a list of pathways for contamination to ensure the quality of risk assessments is consistent. This includes considering:
    a. Environmental risk: groundwater depth and its proximity from the site boundary, and the nature of receptors within 100m of a site boundary.
    b. Public health risk: whether the site is near –
        i. a primary contact recreation within immediate receiving water (surface water)
        ii. an area people can walk past an application area with sub-surface drip irrigation
        iii. a drinking water protection zone
        iv. a location of domestic private bores.
    c. Social risk: primarily, amenity values and cultural considerations.

3. Site-specific assessment: this involves a site-specific check of key factors, to understand the capability of the site and what mitigation measures are appropriate. This includes considering:

    a. the application method (for example, whether a sub-surface drip irrigator or low-pressure spray)

    b. the degree and type of vegetation cover

    c. a groundwater assessment: to confirm the flow direction, quality and depth of groundwater, and to install groundwater monitoring wells

    d. a soil assessment: undertaken by a suitably qualified and experienced person, to address the following –

        i. hydraulic conductivity

        ii. water holding capacity

        iii. high risk soils, or soils classified as Category 5 and 6 in AS/NZS1547:2012

        iv. Existing nutrient concentrations and potential cumulative effects including but not limited to: Total Phosphorus, Olsen P, Total nitrogen, TKN, ammonium-N, Nitrate-N, Exchangeable cations, pH.

The site-specific assessment should also involve considering what mitigation or management approaches are necessary to reduce risk, for example:

a. buffer zones and planting

b. monitoring discharge volumes and quality

c. irrigation scheduling

d. management of spray draft/odour

e. vegetation management and monitoring

f. public access requirements

g. irrigation system maintenance

h. contingency plans

i. receiving environment monitoring

j. periodic Operation and Maintenance Plan reviews

k. alternate potable well supply.

The table below outlines how factors are considered in the site-specific assessment and what risk category corresponds with. Where between categories, it is recommended the most conservative (highest) category is applied to the loading rate matrix.

Factors considered in the site-specific assessment for potential discharges to land:

	Category 1	Category 2	Category 3	Category 4	Category 5
Hydraulic conductivity	Moderate	Moderate to rapid	Slow draining	Rapid draining	Poorly drained, saturated soil
Soil type and suitability	Sandy loam, loam, silt loam	Sand, loamy sand	Fine grained – clay loam, silty clay loam	Course granular soil	High risk soils, i.e., heavy clays, peat, soils classified as Category 5 and 6 in AS/NZS 1547:2012
Land use	Suitable for nutrient removal by cropping	Suitable for nutrient removal by cropping	Permanent ground cover	Permanent ground cover	Permanent ground cover
Topography	Low relief <10-degree slopes	Low relief <10-degree slopes	Slopes up to 17 degrees	Slopes up to 17 degrees	Slopes > 17 degrees
Depth to groundwater	>10m	>10m	Between 5 and 10 m below ground level	Between 1 and 5m below ground level at times	Shallow /at ground level, <1m below ground level
Natural hazards (e.g., flooding, land instability)	Negligible risk	Low risk	Medium risk	High risk	Very high