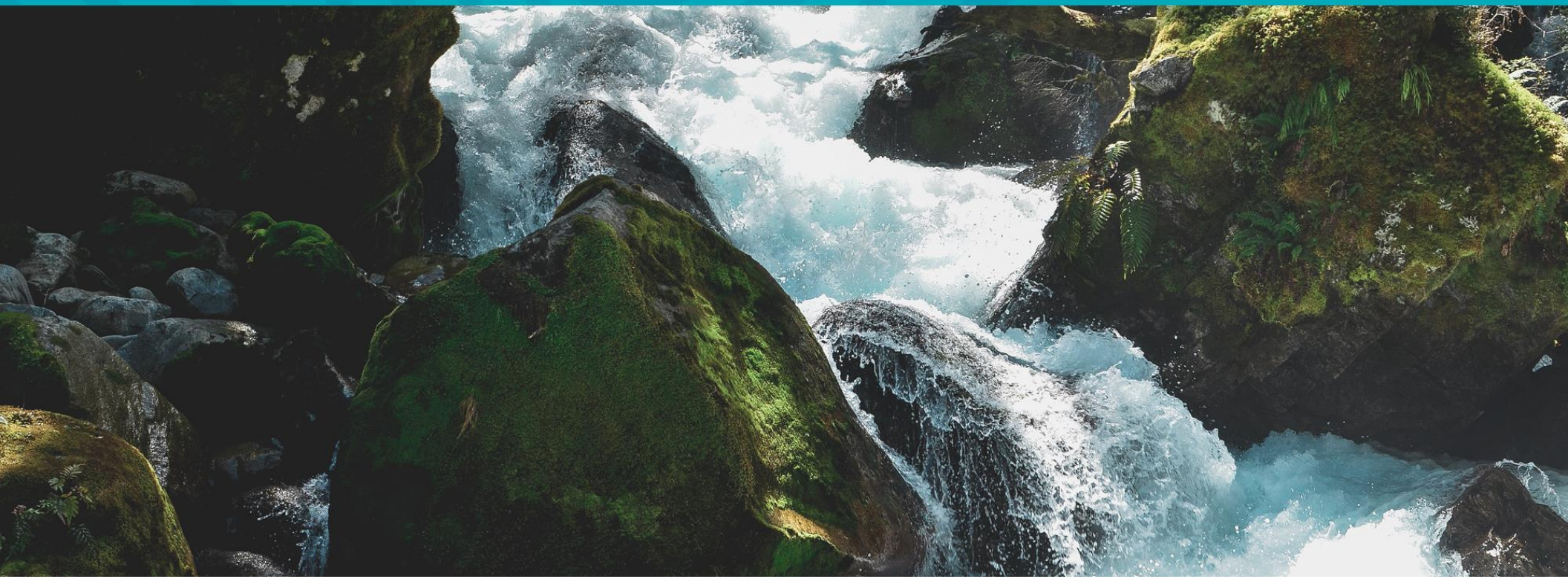
Unclassified

Wastewater Standards Technical Review Group

Monitoring and reporting arrangements for overflows



Karakia tīmatanga

Whakataka te hau ki te uru
Whakataka te hau ki te tonga
Kia mākinakina ki uta
Kia mātaratara ki tai
E hī ake ana te atākura
he tio, he huka, he hau hū
Tihei Mauri Ora!

Cease the winds from the West
Cease the winds from the south
Let the breezes blow over the land
Let the breeze flow over the ocean
Let the red tipped dawn come with a sharpened air
A touch of frost, a promise of a day!
Sneeze, the breath of life!

Scope of report

Scope of report

- The report was commissioned **to develop a national risk-based monitoring and reporting framework** for both **dry and wet weather wastewater overflows**. The SafeSwim model, used in Auckland and Northland, has been used as a starting point.
- The report looks at arrangements that correspond with:
  - international best practice for overflows;
  - existing best practice in resource consents for monitoring and reporting overflows;
  - consideration of any approaches in national directions or regional plans that could impact proposed arrangements; and
  - insights from case studies with mana whenua.
- The report proposes to exclude:
  - bypasses at wastewater treatment plants,
  - overflows from combined sewer overflows, on the assumption combined networks will be replaced over time.

Overflow definitions

- The report uses the definition of overflow in the Taumata Arowai Network Environmental Performance Measures and Guide:

  "…**where untreated or partially-treated wastewater** (or stormwater contaminated with wastewater), **spills, surcharges, discharges or otherwise escape from a wastewater network to the external environment**. This may be due to different causes and may be released via either constructed (engineered) on unconstructed overflow points."

- These measures require overflows to be reported against the following causes:
  - by blockages;
  - by plant failure or equipment damage;
  - where capacity in the wastewater network is exceeded, or where capacity in the combined network is exceeded.
- To be counted, an overflow needs to last at least three minutes in duration.

Focus questions

- Should a risk-based monitoring and reporting framework apply to overflows from combined networks?
- Definitions set by Taumata Arowai have moved away from classification of overflows as “dry” and “wet” (based on weather) to classification based on the cause of an overflow event. This is because it is difficult to reliably define what constitutes “wet” weather.
- Do you have any comments on this (or other aspects) of Taumata Arowai’s definition of overflows?

International practice

International practice

- The report summarises international approaches for risk-based monitoring and reporting of wastewater overflows at pages 6 – 12.

United Kingdom (England and Scotland)

- In the United Kingdom, all overflow points that are designed to overflow during storm events are required to be monitored using event duration monitors (approximately 12,000 across all networks).
- The information is used for pollution warnings and assists in infrastructure improvement and investment decisions.
- Monitoring was phased in over time, prioritising environmental sensitivity / human contact.

International practice (cont).

Canada

- In Canada, Environment Canada requires annual reporting of overflow details such as number, location, and volume for wastewater system owners or operators. There are no central government requirements for event duration monitoring.

Australia

- At a federal level guidelines are in place for States to consider how they will implement overflow regulation. At a state level, license arrangements are commonly in place to regulate wastewater arrangements.
- The report gives an example of implementation of the federal guidelines in NSW, where licensees are required to engage in risk assessment and management for overflows based on a structured classification system.

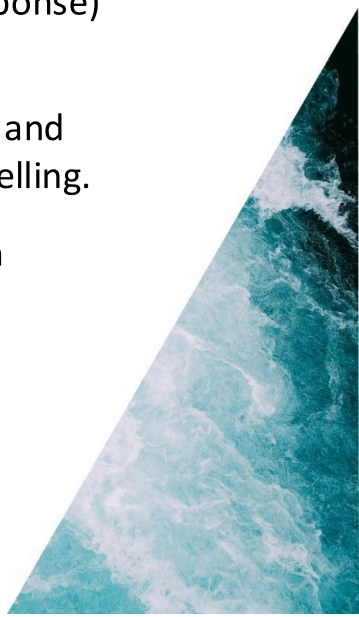
Focus questions

- Are there jurisdictions (identified in the report or otherwise) you think have a particularly effective approach to a risk-based framework for monitoring and reporting overflows? This could include countries, states, cities or regions.

New Zealand

Approaches to overflows in NZ

- The report provides an overview of approaches to overflows in NZ. This includes:
  - The *Water NZ Good Practice Guide* (2022) which provides a structured guide for managing wastewater overflows in the New Zealand context – it includes elements of a risk management framework, together with engagement with community, to identify performance targets and remediation costs to drive management and infrastructure upgrades.
  - The *Regional Best Practice Guide for the Management of Wastewater Overflows* (2019) was developed to provide a standardised framework for risk management (classification and response) for overflows. The guide was developed for use across the Bay of Plenty region.
  - Safeswim programme, which provides a sophisticated framework for risk-based surveillance and reporting of overflow events, based on real-time overflow monitoring and hydrological modelling.
  - The report summarises approaches taken to overflows that are part of discharge consents in Auckland, Gisborne, Christchurch, Wellington and Dunedin.



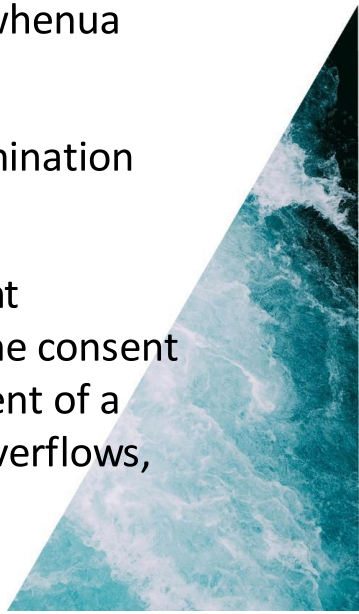
Focus questions

- One of the challenges in New Zealand is that overflows are prohibited in around half of the regions, notwithstanding that wastewater networks are designed to overflow (and do so regularly in rain events). A risk-based monitoring and reporting framework will require operators to report overflows that are otherwise non-compliant.
- We also know that even in regions where a consent is required, not all overflows are consented.
- How do you recommend Taumata Arowai addresses these challenges, particularly with the regional sector?
- The report recommends that requiring all councils to implement a risk-based monitoring and reporting framework similar to Safeswim will not be affordable for all councils, or within existing technological capability. We are interested in your response to that assessment.
- Would it for example be possible to implement elements of the Safeswim programme in a staged way, or incentivise uptake of technology with other councils?

Case studies

Summary of case study insights

- The report summarises the views of mana whenua about overflows in six case studies where wastewater treatment plants have been recently consented (pages 20 - 22).
- The feedback is that wastewater overflows are fundamentally unacceptable to mana whenua due to the significant impacts spiritually, socially, and culturally. The overflows significantly hinder key practices, making it nearly impossible to restore any water bodies to a safe and balanced state (through practices like kaitiakitanga).
- The presence of human wastewater in natural water environments is repugnant to mana whenua ethics and values, with mortuary wastewater being particularly abhorrent.
- Efforts to reduce wastewater overflows are positive, mana whenua desire for the total elimination of these overflows.
- In 2021 the **Gisborne Wastewater Treatment plant** was granted a 15-year resource consent permitting the discharge of untreated wastewater from dry and wet weather overflows. The consent includes several conditions relating specifically to mana whenua, including the establishment of a Tangata Whenua Caucus to provide cultural expertise and advise on the management of overflows, and a cultural monitoring plan to indicate the effects on cultural indicators.



Summary of case study insights

- The **Porirua Wastewater Treatment Plant** has faced low network capacity, significant population growth putting pressure on capacity, high wastewater inflow and infiltration, climate change, an aging network and poor asset condition. The main issues facing the Porirua wastewater network are wet-weather overflows and dry-water leaks which are significantly polluting the Porirua harbour.
- Overflows result in untreated wastewater discharging into the ocean at Rukutane point with an estimated 22 bypass events annually despite upgrades most recently in 2019. Monitoring of overflows is patchy however due to monitoring equipment failure in 2023, with a lack of funding available to replace the equipment inhibiting local authorities ability to understand and respond to the issue.
- Ngāti Toa Rangatira are pragmatic and open to knowledge sharing and working with local authorities to identify new technologies that can be adopted in their area to address the overflow challenges, with an example being the installation of a holding tank to handle overflows that impact a local stream.

Summary of case study insights

- The **Taipā Wastewater Treatment Plant** provides settlement tanks that collect sludge and help prevent local wetlands being overloaded, providing additional capacity to handle any potential overflows.
- The **Rotoiti-Rotomā Treatment Plant** includes a system called Biolytix which iwi consider reduced the impacts from overflows as the water that is in the network has already undergone some initial filtering at the property.

Focus questions

- The proposals in the paper will result in significantly greater transparency around overflows and their management, based on risk.
- Do you have additional examples or proposals for practical ways that a framework could provide greater involvement and assurance to mana whenua – for example through identification of risk, monitoring arrangements, or public reporting?

Recommendations in report

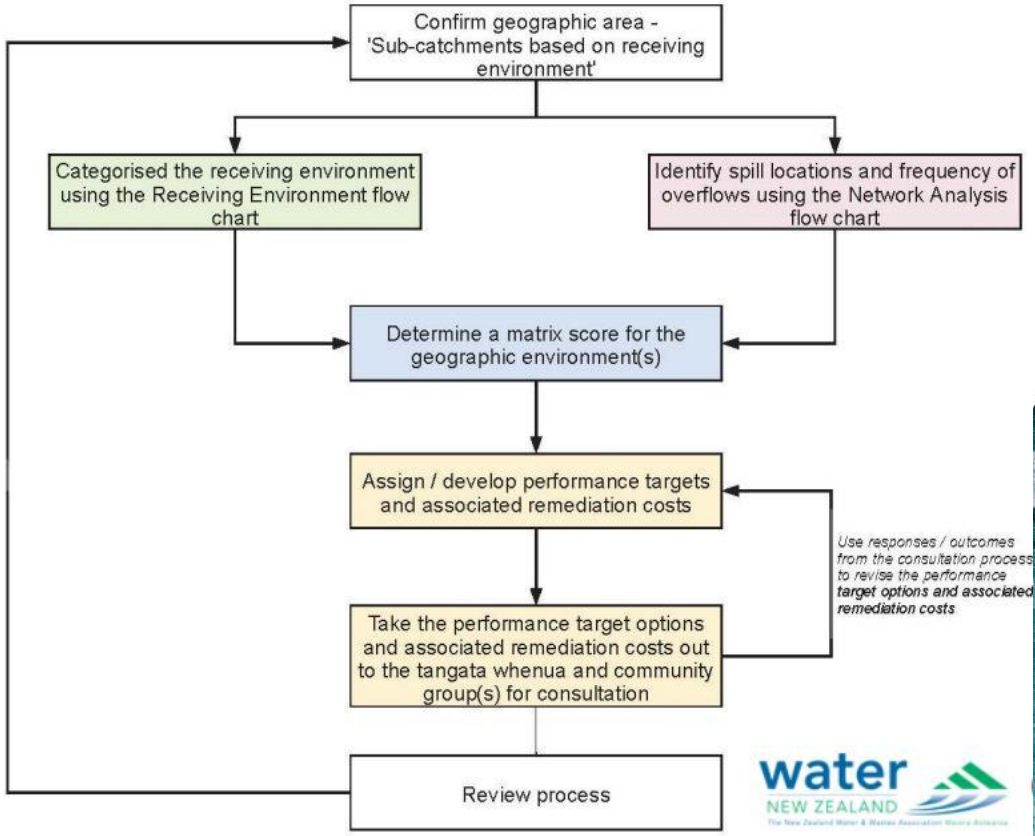
Recommendation - risk based monitoring arrangements

- The report recommends a **requirement for councils to submit a monitoring plan** to Taumata Arowai which list the overflow locations, categorised by risk, existing monitoring, and an action plan about how overflows monitoring will be implemented across three years.
- To support this, the report recommends:
  - Councils **identify the receiving environment** for their network, and work with the community, iwi and hapū to **categorise overflows** in receiving environments – using the Water NZ scoring matrix.
  - During this time, councils must **report and collect data on overflows** to understand the approximate frequency and volume.
  - All new engineered overflows and pump stations must be installed with **overflow alarms and monitoring**. Existing overflows and pump stations must be installed with **event duration monitoring**.

Scoring matrix

The scoring matrix covers the following areas:

- Health and wellbeing of the water
- Health needs of the community (drinking water abstraction)
- Ability of people and the community to provide for social, economic and cultural well-being, for example:
  - Human contact (e.g., swimming)
  - Mahinga kai
  - Quality improvement targets
- Wastewater overflow frequency/volume.

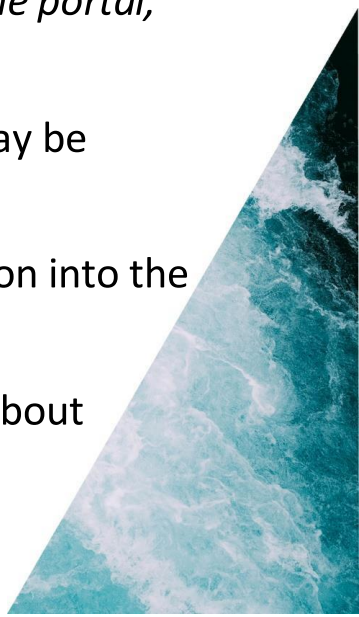


Recommended reporting arrangements

The report recommends a two-stage process for reporting:

- **Post-overflow reporting** with information promptly uploaded to a public website and portal managed by Taumata Arowai.
  - Incident forms should be submitted to an online portal and displayed on a website within 10 days of an overflow event.

    (*We are considering whether Taumata Arowai is best placed to coordinate an online portal, and whether this timeframe needs to be amended).*
  - Where information is provided to mana whenua, an in-person follow-up session may be required to further explain the nature, location and impact of the overflow.
- **Annual reporting** to cover which monitoring takes place, trends, and further investigation into the cause and impact of overflows that have occurred within 12 months.
  - Annual reporting should also cover the risk categorisation of overflows and detail about engagement with iwi, hapū and community throughout the year.



Focus questions

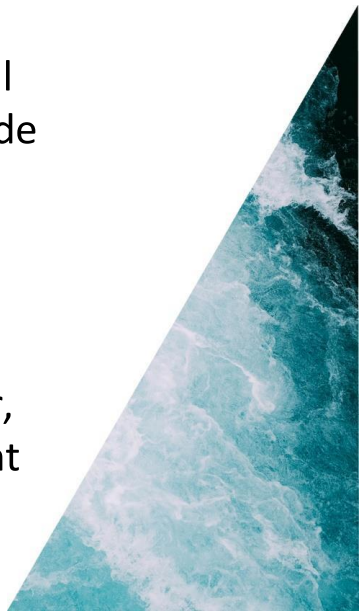
- We are interested in your detailed feedback on the recommended risk assessment, monitoring and reporting arrangements.
- How might they be modified or developed to improve a national level framework?
- Should the same framework apply to all networks, or should a simpler framework apply to particular types of network, or below a population threshold?
- Could there be a transition where smaller networks begin on a simpler system and transition to a more sophisticated arrangement over time?
- Are there particular parts of a network that could be targeted (for example, with real-time monitoring?)
- Should post-overflow reporting be managed by Taumata Arowai (central agency) as recommended in the report, or by the council operator (local service delivery agency)?

How recommendations might be implemented

How recommendations might be implemented

Taumata Arowai has the following statutory powers that could be exercised as part of implementing national risk-based monitoring and reporting of wastewater overflows:

- **Wastewater risk management plans** can be required from wastewater operators. Operators would need to comply with detailed guidance before submitting a plan, which could include guidance about how operators are expected to identify and manage risk. Taumata Arowai reviews all risk management plans, and operators are must give effect to any comments.
- **Monitoring, reporting and record keeping requirements** relating to the environmental impact of wastewater networks can be required by Taumata Arowai, and this can include detailed information about overflows.
- **Environmental performance measures and targets** can be set by Taumata Arowai, and these can include disclosure of information about areas such as overflows.
- **Environmental performance standards** could be set in relation to overflows – however, because standards are implemented through resource consents, it could take significant time before standards are fully implemented nationally.



Focus questions

- Given the scope (and potential limitations) of the legislative framework in the Water Services Act, are there aspects of an approach to overflows that you would modify to make it more achievable?
- Do you have advice on how an approach that incorporates standards for overflows (that would be implemented through resource consents) could be implemented alongside other tools like wastewater risk management plans?
- Would it be possible (or desirable) to incentivise uptake of SafeSwim technology with other councils? Mandating use of particular software technology is likely to outside the scope of the statutory powers of Taumata Arowai.

Karakia whakakapi

Unuhia, unuhia
Unuhia ki te uru, tapu nui
Kia wātea, kia māmā
Te ngākau, te tinanga
Te wairua I te ara tangata
Tīhei Mauri Ora

Draw on, draw on
Draw on the supreme sacredness
To clear, to free the heart
The body, and the spirit of people
Sneeze, the breath of life!