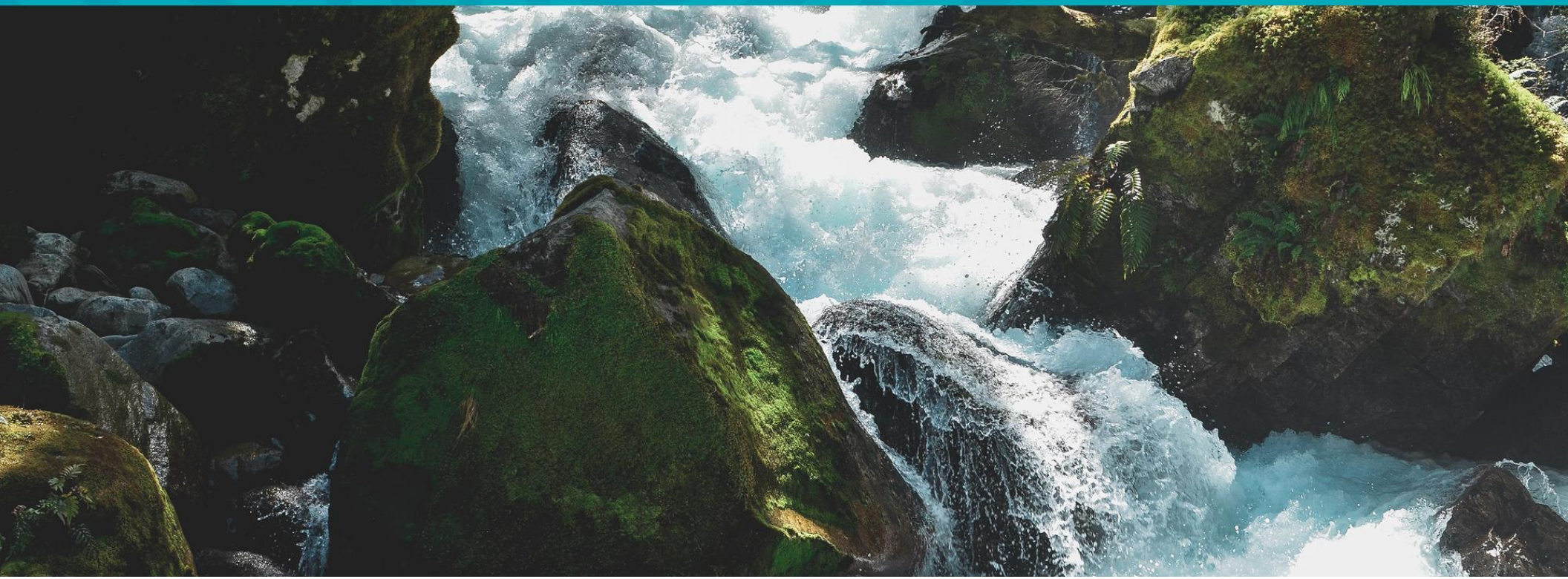
Wastewater Standards Technical Review Group

Case studies



Karakia tīmatanga

Tukua te wairua kia rere ki ngā taumata
Hei ārahi i ā tātou mahi
Me tā tātou whai i ngā tikanga a ratou mā
Kia mau kia ita
Kia kore ai e ngaro
Kia pupuri
Kia whakamaua
Kia tina! Tina! Hui e, tāiki e!

Allow one's spirit to exercise its potential
guide us in our work as well as in our
pursuit of our ancestral traditions
Take hold and preserve it
Ensure it is never lost
Hold fast
Secure it
Draw together! Affirm!

Approach to case studies

This session will focus on:

- Providing an overview of our case studies process and the individual case studies we have selected.

We will hold a second session towards the end of the TRG's work to:

- Provide you the agreed final versions of the case studies, and detailing the overarching insights that have been agreed for consideration in recommendations on the standards.

Scope and process of the report

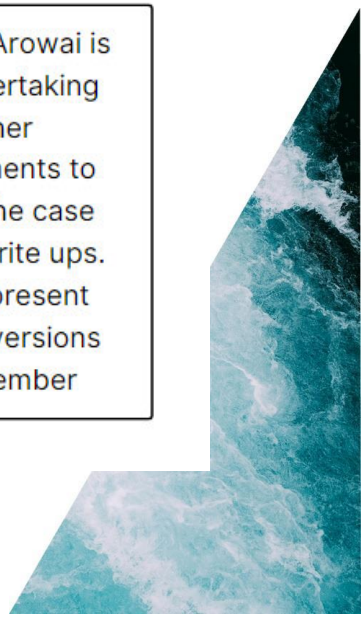
Scope of report

The **Case Study report** was commissioned **to better understand Māori values and perspectives relating to wastewater treatment** and how existing wastewater treatment arrangements have reflected these perspectives**.** The report details:

- **Six case studies d**etailing arrangements at wastewater treatment plants and how wastewater treatment arrangements at these plants have sought engaged with mana whenua through consenting and reconsenting processes;
- A summary of mana whenua expressions of their **tikanga and mātauranga** and related perspectives and values in respect of wastewater treatment;
- An overview of **engagement and participation processes** detailing mana whenua involvement in the design, monitoring, and or reporting arrangements related to the wastewater treatment plants; and
- Insights to take account of and **inform and guide** the development of wastewater standards.

Process to develop report

1	2	3	4	5
DESKTOP REVIEW	**CASE STUDY SELECTIONS**	**ENGAGEMENT AND OUTREACH**	**CASE STUDY DEVELOPMENT**	**INSIGHTS AND THEMES**
Ey Tahi and Tonkin + Taylor undertook a desktop review to identify a long-list of potential case studies. The desktop review has been shared.	Taumata Arowai worked with the consultants to identify a shortlist of ten plants with a variety of characteristcs and from across the country.	We held a series of engagement meetings with six mana whenua groupings, Councils, and consenting authorities.	EY Tahi with support from Taumata Arowai drafted the case studies report based on engagement and supporting documents	Taumata Arowai is now undertaking further engagements to finalise the case studies write ups. We will present the final versions by December



Case studies
Overview

Case study assumptions

- All case studies identified through the long-listing process will involve hapū/iwi participation in the WWTP uggrade process.
- At least one case study will be included that involve areas of significance. We will also include broader frameworks that uphold rights and interests (e.g. Established through Treaty Settlement).
- Case studies will be included that reflect innovative solutions that are acceptable to mana whenua where possible.
- Case studies will reflect benefits and value to the whole community and local government.
- Case studies will involve a mix of high and low levels of hapū / iwi involvement in wastewater management to reflect a range of experiences.
- Case studies will include a mix of WWTP's that discharge to land, water, and biosolids to land. Experience with network overflows will also be covered.
- Case studies will vary in size and include one WTP that services a small population (<2000).
- Case studies will represent a mix of locations across New Zealand and include urban and rural coverage.

Long list of case studies

		Technical factors							iwi / hapū involvement			Population		
	WWTP	discharge to land	discharge to water (marine)	discharge to water (freshwater)	reuse of biosolids	disposal of biosolids	innovative technologies / solutions	network overflow issue	high level of iwi involvement	low level of iwi involvement	broad community involvement	size	urban growth area	Potential existing relationship
Upper North Island	**Taipā** Northland	✓		✓			✓		✓		✓	1500		✓
	Rawene Northland		✓				✓	✓		✓	✓	590		✓
	Pukekohe Auckland	✓	✓	✓			✓		✓		✓	**51,900**	✓	✓
	Wellsford Auckland		✓			✓	✓			✓	✓	2000	✓	✓
	Cambridge Waikato	✓		✓	✓		✓		✓		✓	**21,794**	✓	✓
	Huntly Waikato			✓					✓			(not listed)	✓	✓
Central and Lower North Island	**Rotoiti East Rotomā** Bay of Plenty	✓							✓		✓	1500		✓
	Te Puke Bay of Plenty			✓		✓				✓	✓	(not listed)		
	Gisborne Tairāwhiti		✓			✓	✓			✓		**35,000**	✓	✓
	Hastings/East Clive Hawke's Bay		✓			✓	✓		✓		✓	**62,118**	✓	✓
	Porirua Wellington		✓					✓		✓	✓	**62,000**	✓	✓
South Island	**Motueka** Tasman		✓							✓		**14,000**		
	Akaroa Canterbury		✓		✓				✓		✓	650		✓
	Tahuna - Otepoti Otago		✓			✓	✓			✓		**84,447**	✓	✓
	Waihola Otago			✓						✓		430		✓
	Te Anau Southland	✓		✓			✓		✓			2,628		

Short list of case studies

		Technical factors							iwi / hapū involvement			Population		
	WWTP	discharge to land	discharge to water (marine)	discharge to water (freshwater)	reuse of biosolids	disposal of biosolids	innovative technologies / solutions	network overflow issue	high level of iwi involvement	low level of iwi involvement	broad community involvement	size	urban growth area	Contact
Upper North Island	**Taipā** Northland	✓		✓			✓		✓		✓	1500		EY
	Rawene Northland		✓				✓	✓		✓	✓	590		TA
	Wellsford Auckland		✓			✓	✓			✓	✓	2000	✓	TA
	Cambridge Waikato*	✓		✓	✓		✓		✓		✓	21,794	✓	TA
Central, Lower North Island	**Rotoiti East Rotomā** Bay of Plenty	✓							✓		✓	1500		EY
	Gisborne Tairāwhiti		✓			✓	✓			✓		35,000	✓	TA
	Porirua Wellington		✓					✓		✓	✓	62,000	✓	TA
South Island	**Akaroa** Canterbury		✓		✓				✓		✓	650		EY
	Tahuna - Otepoti Otago		✓			✓	✓			✓		84,447	✓	TA
	Te Anau Southland	✓		✓			✓		✓			2,628		EY

Final case studies

		Technical factors							iwi / hapū involvement			Population		
	WWTP	discharge to land	discharge to water (marine)	discharge to water (freshwater)	reuse of biosolids	disposal of biosolids	innovative technologies / solutions	network overflow issue	high level of iwi involvement	low level of iwi involvement	broad community involvement	size	urban growth area	Contact
Upper North Island	**Taipā** Northland	✓		✓			✓		✓		✓	1500		EY
	Pukekohe Auckland	✓		✓			✓		✓		✓	51900	✓	TA
	Cambridge Waikato	✓		✓	✓		✓		✓		✓	**21,794**	✓	TA
Central, Lower North Island	**Rotoiti East Rotomā** Bay of Plenty	✓							✓		✓	1500		EY
	Gisborne Tairāwhiti		✓			✓	✓			✓		**35,000**	✓	TA
	Porirua Wellington		✓					✓		✓	✓	**62,000**	✓	TA

We sought at least one plant from the South Island, however due to capacity constraints, no mana whenua were available within the period required for the case studies development.

		Technical factors							iwi / hapū involvement			Population		
	WWTP	discharge to land	discharge to water (marine)	discharge to water (freshwater)	reuse of biosolids	disposal of biosolids	innovative technologies / solutions	network overflow issue	high level of iwi involvement	low level of iwi involvement	broad community involvement	size	urban growth area	Potential existing relationship
South Island	**Akaroa** Canterbury		✓		✓				✓		✓	650		✓
	Tahuna - Otepoti Otago		✓			✓	✓			✓		**84,447**	✓	✓
	Te Anau Southland	✓		✓			✓		✓			2,628		

Taipā case study: Overview

- The Taipā Wastewater Treatment Plant (WWTP) is in the Far North District, within the takiwā (territory) of Ngāti Kahu and was commissioned in 1960 to service four local communities serving a population of approximately 1500 people. The Far North District Council (FNDC) operates the WWTP and Northland Regional Council is the consenting authority.
- Since 1985, treated wastewater has been discharged into the Parapara stream, before flowing out to sea at Aurere Beach. Pond and wetland systems are used to treat wastewater before discharge. Mana whenua have opposed the discharge of wastewater into the Parapara stream for over 30 years due to the impacts on local mahinga kai practices and the environment. A stated goal of hapū is for their tamariki and mokopuna to be able to do water bombs from a local pier without risk of getting sick.
- FNDC sought to renew the resource consent for Taipā in 2010, which was opposed by 47 of 50 submitters, as well as mana whenua as the environmental standards were viewed as insufficient. FNDC paused the consent renewal to undertake further engagement and discussions. This led to a lengthy delay, resulting in mana whenua establishing a trust in 2017 to oversee their work and seek funding for mana whenua aligned solutions. This work was voluntary and unpaid.
- In 2019, mana whenua appealed the consent renewal application to the Environment Court. In 2021, a consent order was issued establishing a working group with mandatory hapū representation. This group has, in recent years, supported the active involvement of hapū in decisions around treatment options, solutions and monitoring processes. A further condition of the order has resulted in a one-year trial of a land-based discharge using slow-rate irrigation and electrocoagulation technology.
- Throughout the process, Ngāti Kahu have had the support of a trusted technical advisor who has supported their engagement and work. This was seen as a critical element to their successful court challenge and the subsequent work undertaken alongside FNDC to identify the land-based discharge trial.

Pukekohe case study: Overview

- The Pukekohe WWTP is in the Northern Waikato region, within the takiwā (territory) of Waikato-Tainui. Te Taniwha o Waikato (TTOW) is the representative group of nine marae appointed delegates mandated to represent local marae and iwi and they lead hapū involvement with Watercare, who have owned and operated the plant since 2019, after it was acquired from Franklin District Council in 2010.
- The local hapū have a strong connection to the Waikato river, which is considered not only a source of physical sustenance but also an ancestral figure featuring in many whakataukī and waiata. The health of the Waikato river is inextricably linked to the health of people, with any adverse effects also impact the cultural fabric of local hapū and iwi.
- The clear view articulated through engagement was that wastewater discharge is incompatible with the vision to restore the Waikato River quality to a drinkable standard. Specific consent conditions recommended by TTOW include a need for mātauranga Maaori informed monitoring, and funding support for hapū enhancement and involvements. TTOW have also been supported by consultants to develop their CIA.
- The Pukekohe WWTP uses a treatment process that comprises two Sequencing Batch Reactors (SBRs) for biological treatment and ultraviolet (UV) disinfection to eliminate pathogens. A constructed wetland serves as the final treatment step, providing additional filtration and natural purification. Treated wastewater is then discharged into Parker Lane Stream, which is a tributary of the Waikato River
- The Pukekohe WWTP's operation is subject to additional legal requirements because of Treaty settlement legislation, including meeting Te Ture Whaimana o te Awa o Waikato (the vision and strategy for the river) which emerged from the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010.
- The WWTP was granted a 35-year consent in 2017. The Pukekohe Upgrade Project, completed in 2023, increased the capacity of the WWTP to respond to rapid population growth in the Franklin region and the improve the quality of treated wastewater that is discharged.

Cambridge case study: background

- The Cambridge WWTP is located to the west of Cambridge township and alongside the Waikato River within the takiwā (territory) of Ngaati Hauaa, Ngaati Koroki Kahukura, and Waikato. The Waikato Regional Council is the consenting authority and the plant is owned and operated by Waipā District Council.
- The existing plant has been operating since the 1970s, servicing the Cambridge and Leamington municipal areas and parts of the Karapiro and Hautapu industrial areas and sites across from Arikirua Paa, a waahi tapu. The WWTP treats wastewater and discharges it to land, with the groundwater eventually travelling to the Waikato River. The current WWTP utilises a pond system including wetland ponds and in 2022 the serviced population was approximately 20,000 and is anticipated to rise to 50,000 in 2061.
- Similar to Pukekohe, there are specific Treaty settlement obligations that exist in relation to the discharge to the Waikato River and the stated goal was for Tamariki and mokopuna to be able to swim in the river – which is not currently possible. The participants highlighted again their natural aversion to discharge to water but noted the importance of making informed and pragmatic decisions especially where a potentially better treatment option may involve discharge to water.
- The Waipaa District Council worked closely with mana whenua to renew its resource consent, which involves a shift toward water-based discharge with a higher standard of treatment. This has been agreed between mana whenua and the Waipā District Council as a practical alternative between traditional values and modern treatment requirements and the consent was granted without a formal hearing in September 2023 for 35 years. Waipā District Council has committed to contracts for the delivery of the new WWTP which will treat wastewater using Membrane Bioreactor (MBR) technology. The preferred discharge option for the new WWTP is a gabion wall/rip rap (rock) structure situated on the bank of the Waikato River. Treated wastewater will flow down the gabion wall before making its way into the river.
- Mana whenua have been involved in the Cambridge WWTP consenting process for over ten years. More recently, a Kaitiaki Group was established to help advise the Cambridge WWTP upgrade project. Mana whenua commissioned the Tangata Whenua Effects Assessment Report in October 2022 to evaluate the potential and actual effects of the proposed upgrades to the Cambridge WWTP. A mātauranga based Matariki aligned Framework has been agreed to measure the impacts of the plant on the land and Waikato river.

Rotoiti Rotomā-East case study: Overview

- The East Rotoiti-Rotomā Wastewater Scheme is a collaborative project led by Rotorua Lakes Council, Rotoiti Rotomā Sewerage Steering Committee (RRSSC), Te Arawa Lakes Trust and Bay of Plenty Regional Council. The project was guided by the Ngāti Pikiao Cultural Impacts Team who provided cultural expertise and technical knowledge.
- The wastewater system for Rotoiti-Rotomā originally consisted of septic tanks and grinder pumps which leached nutrients into the lake affecting water quality and causing algal blooms. Mana whenua opposed the discharge of wastewater into their lakes and have been consistent in their advocacy for environmental protection of the lakes. Ngāti Pikiao stated that the mauri of the lakes, and their ability to support the inherent cultural practices have significantly degraded over time due to pollution. Land-based discharge is preferred, due to the buffering effect of land versus direct discharge to water.
- In 2010, the Rotorua Lakes Council applied for a resource consent to build a plant in Rotomā, with consent approved in early 2011. Mana whenua appealed to the Environment Court on several grounds including the resource consent application failed to adequately provide and recognise the relationship of Ngāti Pikiao with their ancestral lands, water, sites, and taonga, failed to provide for the role of Ngāti Pikiao as kaitiaki, and would have adverse effects. In 2012, the Environment Court found in favour of Ngāti Pikiao citing a failure by the Council to engage on several matters.

Rotoiti Rotomā-East case study: Overview

- In 2014, a new committee comprised of local government, mana whenua, and government agencies was established to guide the development of wastewater treatment options for Rotoiti-Rotomā. Mana whenua have expressed issues with this committee, despite good representation, and have been frustrated by a lack of influence. Despite this, mana whenua presented their preferred option including conditions such as development of a CIA that must be addressed and a cultural management plan. In 2016, the Ngāti Pikiao Cultural Impacts Team was established in 2016 and the new WWTP was granted consent in August 2017.
- The Scheme constructed 47 kilometres of reticulated network that connects homes in Rotomā and East Rotoiti to a new WWTP that has been constructed near Lake Rotoiti on land owned by Haumingi B93B Ahu Whenua Trust. All of the homes connected to the reticulated network will have on-site systems installed. This pre-treatment approach reduces the risk of waste flowing into the waterways if the pipes get damaged. The Scheme will service approximately 1500 people.
- The WWTP uses a range of treatment methods to protect the surrounding lakes and environment, including the use of a Membrane Bioreactor system, and use of natural bacteria, processes (such as Biolytix) and natural materials as removal and filtration practices.

Gisborne case study: Overview

- The Gisborne WWTP is located in Awapuni, and was built in 2010 with upgrades to treatment technology including a new Biological Trickling Filter system. First commissioned in 1964, the plant was initially constructed as a comminutor system, outfall pump station and ocean outfall on Stanley Road for the discharge of domestic and industrial wastewater. In 2007, Gisborne District Council (GDC) applied for a new resource consent for the WWTP including the addition of boulder beds.
- Ngāti Porou, Rongowhakataa, Ngāi Tāmanuhiri, and Te Aitanga a Māhaki (mana whenua) have opposed the discharge of untreated wastewater into water for decades, advocating strongly for the highest level of treatment before wastewater is discharged to any rivers or waterways within the region. Mana whenua have referred to the practice of discharging mortuary waste into water as 'culturally abhorrent' and do not support the transportation of biosolids to Paeroa, both because the biosolids are disposed of into landfills and because transportation shifts responsibility for disposal to another region.
- In 2007, Gisborne District Council (GDC) applied for a new resource consent for the WWTP including the addition of boulder beds, with a 35-year resource consent granted which included conditions sensitive to mana whenua concerns. In 2016, the Gisborne WWTP was further upgraded to include additional biosolid removal methods, ultraviolet (UV) disinfection and a new Biological Trickling Filter system. Throughout the development of the WWTP, mana whenua opposed resource consent applications – including through the Environment Court – as they sought solutions which better reflected tikanga-based approaches to wastewater management.

Gisborne case study: Overview

- In 2017 the Tairāwhiti Resource Management Plan (TRMP) was introduced to support GDC, and included overarching provisions relating to mana whenua interests, aspirations and involvement in wastewater management. Two forums support this process including a Wastewater Management Committee (WMC) tasked with monitoring compliance with consent and permit conditions relating to the WWTP to improve the mauri and water quality of Tūranganui ā Kiwa and is made up of four mana whenua representatives and four GDC Councillors and the KIWA group to provide specific cultural and technical expertise.
- In 2021, GDC was granted a 15-year resource consent permitting the discharge of untreated wastewater overflows to water. A condition of the consent included the establishment of a Tāngata Whenua Caucus to provide cultural expertise and advise on the management of overflows and cultural monitoring to illustrate the effects on cultural indicators.

Porirua case study: Overview

- The Porirua WWTP is located in Tītahi Bay, Porirua, and within the takiwā (territory) of Ngāti Toa. Porirua City Council (PCC) holds a resource consent to discharge treated wastewater to water via coastal outfall. Wellington Water (WW) operates and maintains the WWTP on behalf of the Porirua City Council. The Porirua WWTP's resource consent was renewed in 2020 for a period of 18 years and was recently upgraded to improve the plants' treatment capacity, address the issues caused by overflows, and to respond to population growth.
- Ngāti Toa view the discharge of human waste into the Porirua harbour as culturally and spiritually abhorrent, irrespective of the level of treatment. The contamination caused by wastewater discharge has impacted marine species and in turn impacted Ngāti Toa's mahinga kai (food gathering) practices. The Porirua Harbour was once a thriving and abundant food source, however due to the pollution of the harbour, shellfish are no longer easily accessible. As an example, the cockle beds are now increasingly so deep that they are hard to find (even for monitoring purposes) and Ngāti Toa are losing their mātauranga associated with this practice as a result.
- The main issues facing the Porirua wastewater network are wet-weather overflows and dry-weather leaks. Wastewater is treated at the Porirua WWTP using a screening process, bioreactors, clarifiers and ultraviolet (UV) treatments. Treated wastewater is then discharged to the Porirua Harbour via a coastal outfall at Rukutane Point. Biosolids are separated from the wastewater during the treatment process and disposed of at Spicer landfill in Keneperu, Porirua. When treatment capacity is exceeded, untreated wastewater bypasses the secondary treatment process and is discharged at Rukutane Point. Despite the 2015/16 WWTP upgrades, in 2019 it was estimated that there were approximately 22 bypass events annually.
- There are several mechanisms that support mana whenua involvement in local wastewater treatment arrangements including a wastewater treatment advisory group made up of Ngāti Toa and local government members, the Porirua Harbour Accord which is currently being developed, as well as provisions within the Ngāti Toa Treaty settlement to develop poutiaki plans with the Council, or iwi environmental management plans. Mana whenua have expressed positive working relationships exist with PCC and WW.

Next steps: Case studies

- We are continuing work with our case study participants to finalise the draft case studies. This process will also involve the Council's and consenting authorities providing feedback on any factual matters or inconsistencies.
- The case studies will be finalised by mid-November.
- We will circle back to the TRG with finalised case studies and the overarching updated case study report in late November/Early December.

Pātai/whakaaro

Focus questions

- We are interested in a discussion about how the experiences outlined in the case studies can be applied to wastewater standards to address the challenges and opportunities experienced at place over many years.
- It is important that standards achieve the efficiencies and cost savings that are being sought, while also achieving environmental outcomes and mana whenua aspirations. As the case studies have demonstrated, iwi/hapū will undertake costly litigation, but this can be averted through good engagement processes and seeking shared outcomes.
- What are your experiences with mana whenua? How did you find solutions to shared challenges?
- What are some of the key themes or elements that you have experienced or see exhibited in the case studies?
- We will discuss your insights at the meeting.

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!