Porirua Wastewater Programme

Update to Te Awarua O Porirua Whaitua Committee

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Wellington Water

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Porirua Wastewater Programme - Overview

Purpose

Identify preferred options for investment in the Porirua Wastewater Treatment Plant (WWTP) and wastewater network, and lodge consents by late-2019

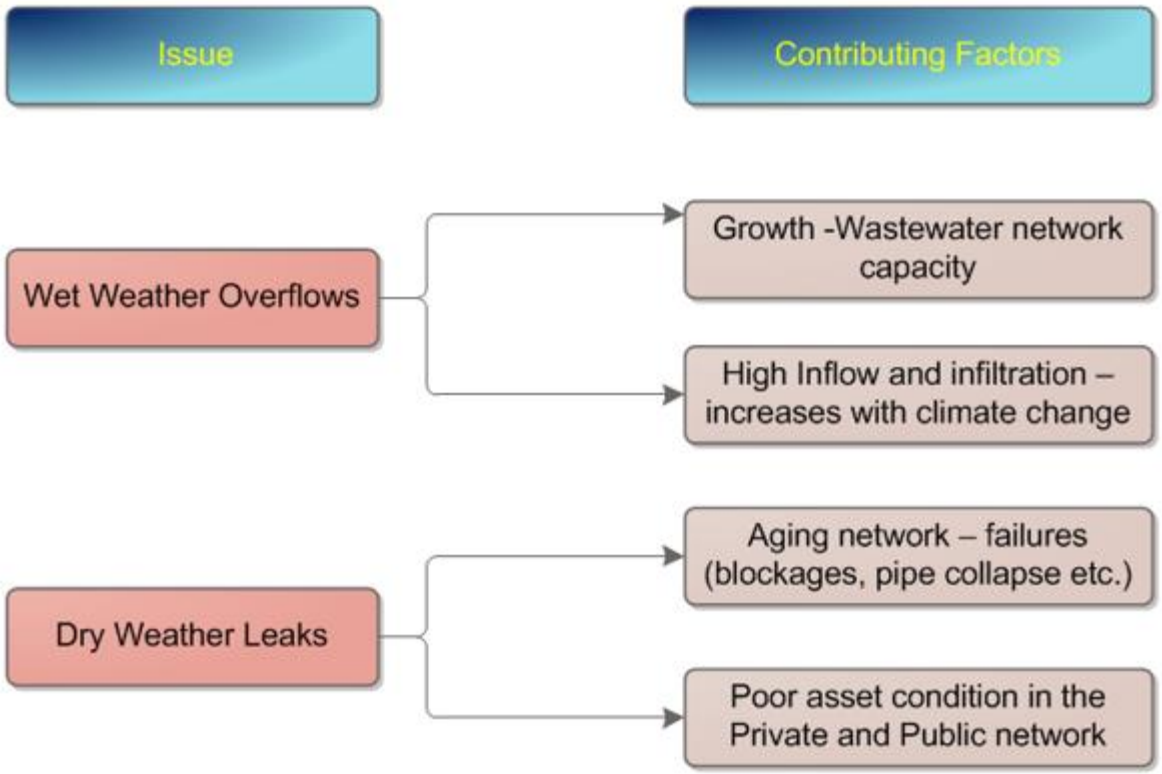
Vision

'A healthy and protected harbour, catchment and coastal environment supported by infrastructure that minimises adverse effects and facilitates growth'

Porirua Harbour

Porirua Wastewater Network

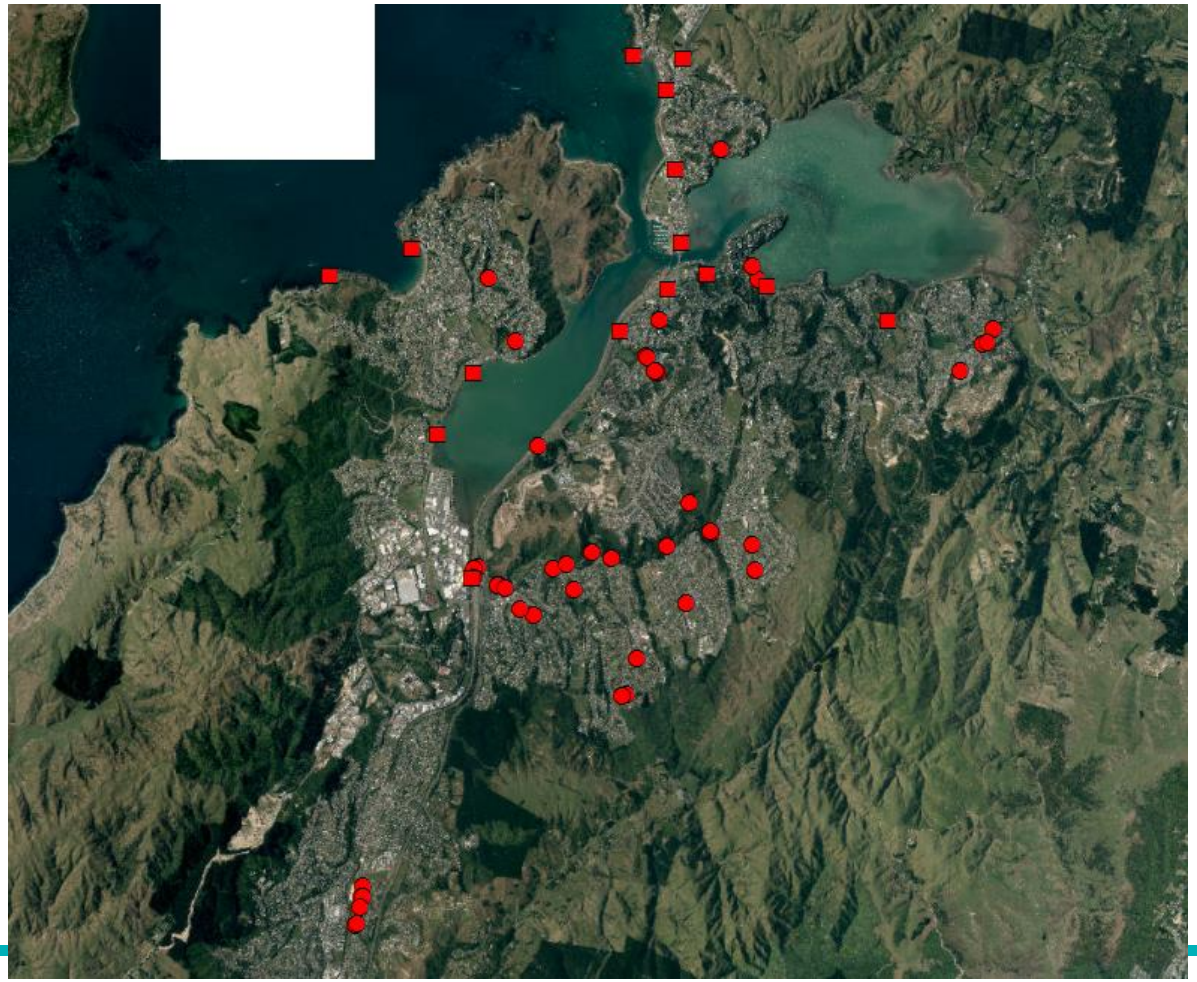
Porirua Wastewater Network - 'The Problem'



Porirua Wastewater Network - 'The Problem' cont.

- Our understanding of wastewater network overflows (WNO's) is incomplete, including the locations where they occur, their volume and frequency
- Flow rate and volume is still not measured at most WNO sites
- An event based monitoring regime has recently commenced which is increasing knowledge of WNO's
- A network hydraulic model is being developed to estimate overflow volumes

Locations of Unconsented Wastewater Network Overflows (WNO's)



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Freshwater monitoring summary

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Catchment	Sub-catchment	Values				Pressure				State				Priority	
		Freshwater		Coastal						Freshwater		Coastal			
		Ecological	Contact recreation	Ecological	Contact Recreation	%Urban	%imperv-ious	Network	Hot spots	Ecological	Contact recreation	Ecological	Contact Recreation	Monitoring	Action
	Hutt - Headwater														
16. Hutt-Wha	Whakatiki	High	High	N/A	N/A	Low	Low	Low	Low	Good	Good	N/A	N/A	Low	Low
17. Hutt-Aka	Akatarawa	High	High	N/A	N/A	Low	Low	Low	Low	Good	Fair	N/A	N/A	Low	Low
18. Hutt-Man	Mangaroa	High	Moderate	N/A	N/A	Low	Low	Low	Low	Good	Fair	N/A	N/A	Low	Low
19. Hutt-Pak	Pakuratahi	High	High	N/A	N/A	Low	Low	Low	Low	Good	Good	N/A	N/A	Low	Low
20. Eastbourne	Eastbourne	Days Bay	Moderate	High	High	Moderate	Low	Moderate	Moderate	Good	No data	Good	Fair	Mod	Low
21. Wainui-omata River	Black Creek	Moderate	Moderate	N/A	N/A	High	High	High	Moderate	Poor	Fair	N/A	N/A	High	High
	Wainuiomata-iti	High	High	High	High	Low	Low	Moderate	Moderate	Fair	Fair	Good	No data	Mod	Low
	Wainuiomata														
	Morton														
22. Taupo	Taupo	High	Moderate	High	High	Moderate	Moderate	Moderate	SH1	Fair	Fair	Good	Poor	High	High
23. Kakaho	Kakaho	High	Moderate	High	High	Moderate	Moderate	Low	Low	No data	No data	Fair	Fair	Mod	Mod
24. Horokiri	Horokiri	High	Moderate	High	High	Low	Low	Low	Low	Good	Fair	Fair	Fair	Low	Low
25. Pauataha-nui	Pautahanui	High	Moderate	High	High	Low	Low	Low	Low	Good	Fair	Fair	Fair	Low	Low
26-Duck	Duck/Browns	High	Moderate	High	High	High	Moderate	Low	Low	Good	Poor	Fair	Fair	Mod	High
27-Porirua	Onepoto	High	Moderate	High	High	High	High	High	CBD, SH1	Fair	Poor	Poor	Poor	High	High
	Porirua														
	Paparangi														
	Churton														
28-Porirua coast	Porirua coast	Moderate	Moderate	High	High	Moderate	Moderate	Moderate	Moderate	Fair	Poor	No data	Poor	High	High

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Porirua WWTP – ‘the problem’

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Wastewater Treatment Plant

- Generally performs well in dry weather producing high quality effluent
- Limited capacity to treat high flows following heavy rainfall leading to un-treated bypasses to the coastal environment
- Currently unable to accommodate population growth (+30,000 by 2040)
- Coastal outfall discharge to shoreline

Porirua WWTP

Overflows and Rukutane Pt outfall

A collaborative Approach

- High level commitment to collaboration from GWRC and Wellington Water based on Twyfords ‘Power of Co’ model
- Collaborative group includes PCC, WCC, GWRC, Regional Public Health, Ngati Toa, Whaitua members and Harbour Trust
- MoP between Wellington Water and Ngati Toa Rangitira Inc. to recognise Ngati Toa’s role as Kaitiaki and partner

Why Collaboration?

'If you want to go fast, go by yourself…if you want to go far, take others with you'

- Need for a holistic WWTP + network approach to investment and outcomes to meet Whaitua objectives
- Unlikely to get shared agreement on a preferred option using a traditional engagement approach
- Issues with regional RMA provisions (PNRP) - better to work through issues collaboratively with the consent authority
- Suits the Wellington Water approach - puts people and the customer first
- Highly technical options - collaboration a vehicle for shared learning and understanding
- Better suited to partnership model with Ngati Toa

Where have we got to?

- The project has gone through both a long list and a short list option assessment process
- The long list option assessment process was completed in November 2017
- MCA workshop involving the collaborative group and stakeholders involved scoring longlist options for both the plant and network
- Confirmation of the need for a holistic WWTP + network approach to investment and outcomes
- Agreement that improving WQ in Porirua Harbour and immediate catchments is the priority
- About to commence community engagement

Network Long List Options

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Criteria	Harbour discharge options		Options which involve greater conveyance to the WWTP						Options with a mix of increased conveyance and harbour discharges		
	1. Business as usual	2. Rapid Treatment in north and City Centre	3. Greater conveyance	4. Greater conveyance in north + storage in the City Centre	5. Storage in the north and greater conveyance from the City Centre	6. Cross harbour pipeline + storage in the City Centre	7. Cross harbour pipeline + greater conveyance from the City Centre	8. Storage in Wellington City + storage in the north	9. Cross harbour pipeline + rapid treatment at the city centre	10. Rapid treatment in the north + storage at the city centre	11. Greater conveyance in the north + rapid treatment at the city centre
Public Health Risk		?[3]									
Natural Environment											
Tangata whenua						F[4]	F		F		
Growth											
Affordability											
Social and community		?				F	F		F	?	?
Technology											
Resilience											

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WWTP long list options

Criteria	1 Discharge to the CMA[7] from the existing shoreline outfall + existing standard[8] of treatment	2 Discharge to the CMA from the existing shoreline outfall + a higher standard of treatment	3 Discharge to the CMA from a new shoreline outfall + existing standard of treatment	4 Discharge to the CMA from a new shoreline outfall + a higher standard of treatment	5[6] Discharge to the CMA from a new offshore ocean outfall + existing standard of treatment	6 Discharge to land + seasonal shoreline outfall + existing standard of treatment	7 Storage of wastewater + discharge to the CMA from the existing shoreline outfall on outgoing tide + existing standard of treatment	8 Storage of wastewater + discharge to the CMA from a new shoreline outfall on outgoing tide + existing standard of treatment
Public Health Risk				?	?			
Natural Environment								
Tangata whenua	?[9]	?			a b	?		
Growth								
Affordability					a b			
Social and community	?	?	?	?	?		?	?
Technology								
Resilience								

Shortlist Options under consideration

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		Network Shortlist[1]		
		Greater conveyance	Combination of storage and conveyance[2]	Twin storage[3]
WWTP Shortlist[4]	Discharge to the CMA from the existing shoreline outfall[5] + existing standard of treatment	1. Greater conveyance in the network, plus existing standard of treatment at the WWTP + discharge to the CMA from the existing shoreline outfall	2. Combination of storage and conveyance in the network, plus discharge to the CMA from the existing shoreline outfall + existing standard of treatment	3. Twin storage in the network, plus discharge to the CMA from the existing shoreline outfall + existing standard of treatment
	Discharge to the CMA from a new shoreline outfall + existing standard of treatment	4. Greater conveyance in the network, plus existing standard of treatment at the WWTP + discharge to the CMA from a new shoreline outfall	5. Combination of storage and conveyance in the network, plus discharge to the CMA from a new shoreline outfall + existing standard of treatment	6. Twin storage in the network, plus discharge to the CMA from a new shoreline outfall + existing standard of treatment
	Discharge to the CMA from a new offshore ocean outfall + existing standard of treatment	7. Greater conveyance in the network, plus existing standard of treatment at the WWTP + discharge to the CMA from a new offshore ocean outfall	8. Combination of storage and conveyance in the network, plus discharge to the CMA from a new offshore ocean outfall + existing standard of treatment	9. Twin storage in the network, plus discharge to the CMA from a new offshore ocean outfall + existing standard of treatment

Steps to identify a Preferred Option

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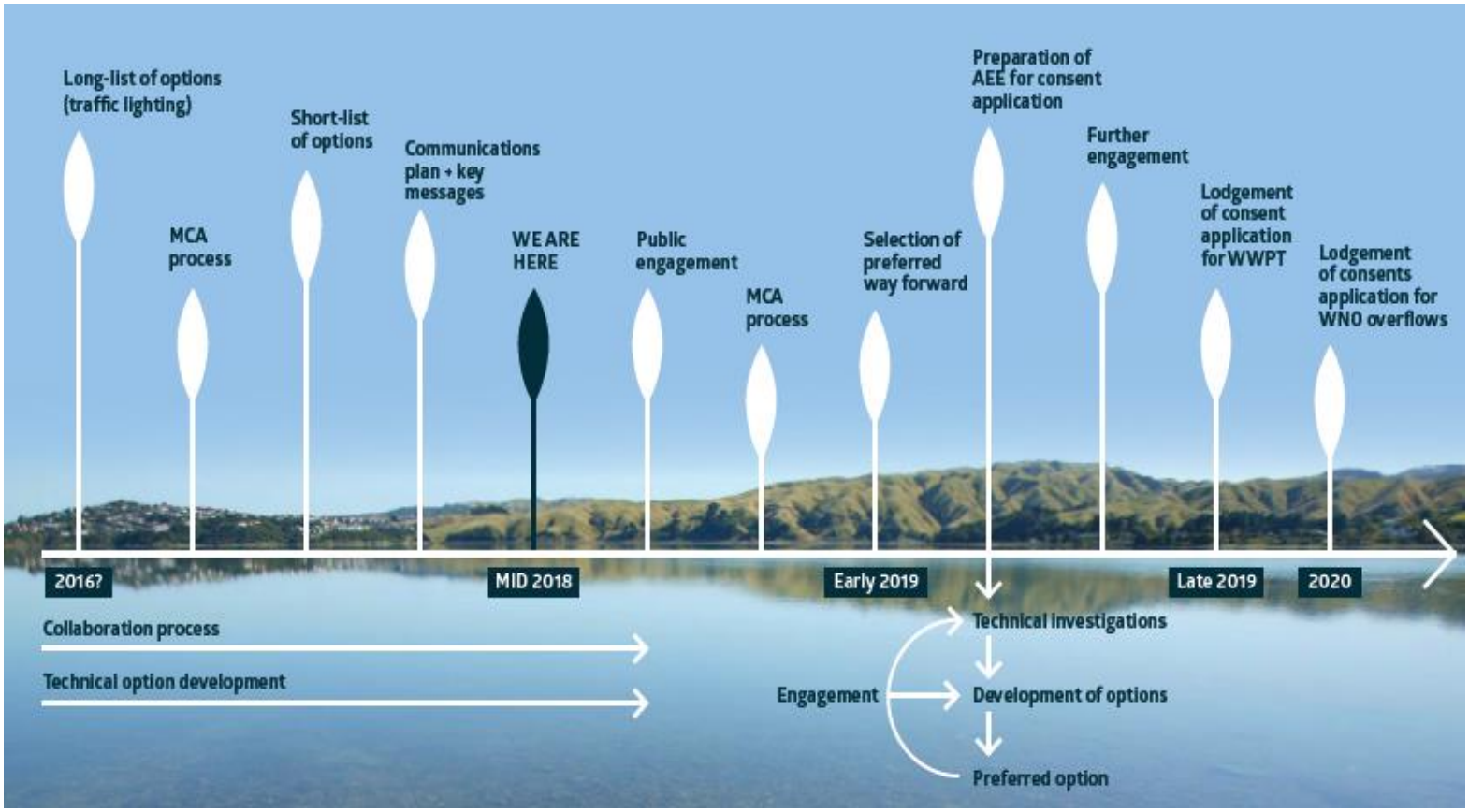

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Policy matters

- The 2017 change to the NPS-FM from a ‘wadeable’ standard of 1,000 cfu/100mL to a ‘swimmable’ standard of 130 cfu/100ml is a major shift in focus
- The proposed adoption of the 130 cfu standard for the Porirua catchment will mean focussing on reducing dry weather leaks instead of reducing WNO’s
- Rolling monthly median levels of *E.coli* currently show ‘straight E’s’
- Tension between the PNRP focus on reducing WNO’s (P76) vs reducing dry weather leaks - what should we prioritise?
- Dry weather is when people use the freshwater and coastal water resource the most

Drains to	WMU group	WMU name	E.coli		Ammonia toxicity		Nitrate toxicity		Dissolved zinc toxicity		Dissolved copper toxicity	
			Current State	Objective 19.4.18	Current State	Objective 19.4.18	Current State	Objective 19.4.18	Current State	Objective 19.4.18	Current State	Objective 19.4.18
Open coast	Coastal catchments	Pukerua	E	-	B	A	B	A	A	A	C	B
		Hongoeka to Pukerua	E	A-B	B	-	B	A	A	A	C	A
		Whitireia	E	B	B	A	B	A	B	A	C	A
Taupo	Taupo Stream and Swamp	Taupo Stream	E	B	B	A	B	A	C	A	D	B
			E	B	B	A	B	A	B	A	C	A
Pauatahanui Inlet	Pauatahanui steep rural streams	Horokiri and Motukaraka	E	B	B	A	B	A	A	A	A	-
			D	B	A	A	A	A	A	A	A	-
		Kakaho Stream	E	-	B	A	B	A	A	A	A	-
		Judgeford Stream	E	C	B	A	B	A	A	-	A	-
		Upper Duck Creek	E	-	B	A	B	A	A	A	A	-
	Pauatahanui rural streams	Pauatahanui Stream	E	-	B	A	A	A	A	A	A	-
		Ration Creek	E	B	B	A	B	A	A	A	A	-
	Pauatahanui urban streams	Lower Duck Creek	E	-	B	A	B	A	B	A	C	B
		Pauatahanui fringe streams	E	-	C	B	A	A	C	A	D	B
Onepoto inlet	Onepoto steep rural streams	Rangituhi Stream	E	A	B	A	B	A	A	A	A	A
		Takapu Stream	E	C	B	B	B	B	C	C	A	A
		Upper Kenepuru	E	C	B	A	B	A	A	A	A	A
	Onepoto rural streams	Belmont Stream	E	C	C	C	B	B	C	C	C	C
		Stebbings Stream	E	C	B	B	C	B	A	A	A	A
	Onepoto small urban streams	Hukarito Stream	E	-	C	A	B	B	B	A	C	B
		Mahinawa Stream	E	-	B	B	B	B	B	A	C	B
		Onepoto Fringe	E	C	C	B	A	A	D	A-B	D	C
		Titahi	E	-	C	B	A	A	C	A	D	C
	Kenepuru Stream	Kenepuru	E	C	C	C	B	B	C	B	D	C
	Porirua Stream	Porirua	E	C	A	A	B	B	D	C	D	C
			E	C	C	C	B	B	D	C	D	C
			E	C	C	C	B	B	C	C	D	C
			E	C	C	C	B	B	C	C	D	C

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Policy matters

- Whaitua Policies that prioritise the achievement of *e.coli* limits and resolve the tensions in the PNRP policy framework would be useful
- Acknowledging the 'unknown' contribution urban stormwater makes - it has a greater effect than wastewater on ecosystem health. Should this be prioritised?
- Improvements to urban wastewater and stormwater discharges will improve *e.coli* but will not improve other WQ attributes, namely nutrient and sediment inputs
- Investment limited - $32M for wastewater over next 10 years
- Investment in stormwater much smaller
- We need to prioritise carefully - affordability is a key consideration
- What timeframes are acceptable?
- What are the most important interventions to *'maintain and enhance'* water quality in the wider catchment?