

Porirua Wastewater Network Overflows

Network Improvement Plan and consenting process





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Wastewater treatment plant

Original plant 1989

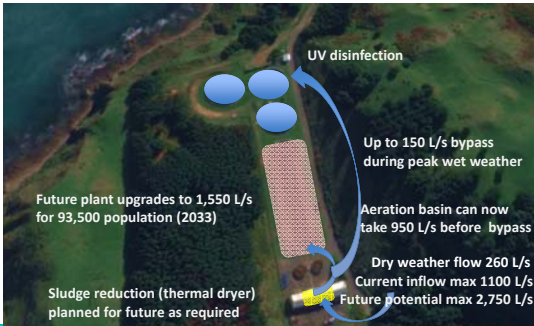
- several upgrades since

Currently about 82,000 popn.
Effluent monitoring
Environmental monitoring
Consent expires 2020



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Porirua WWTP



UV disinfection

Up to 150 L/s bypass during peak wet weather

Aeration basin can now take 950 L/s before bypass

Dry weather flow 260 L/s
Current inflow max 1100 L/s
Future potential max 2,750 L/s

Future plant upgrades to 1,550 L/s for 93,500 population (2033)

Sludge reduction (thermal dryer) planned for future as required

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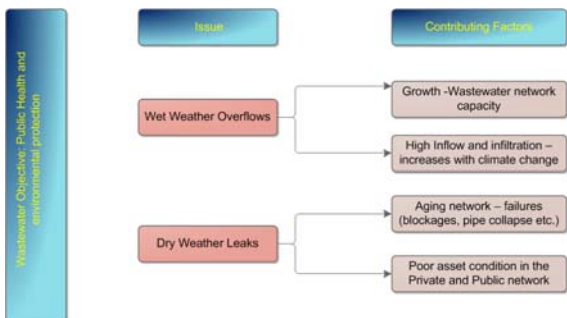
Key Issues – Network Improvement

Frequent unconsented wastewater overflows

- Non compliance with the Natural Resources Plan (NRP). A formal warning letter already received from GWRC
- Some parts of the Trunk Network inadequate, impediment to growth
- Compromised public health and safety
- Entry of contaminants into waterways causing adverse environmental effects
- Offensive to Maori values
- Community expectations not currently met
- No short term fix

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Wet weather and Dry weather issues



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Unconsented wet weather overflows - CBD Overflow Chamber

- Wastewater overflows from this location on average 12 times a year
- Average volume per overflow 9,000m³ discharging into Porirua inner-harbour



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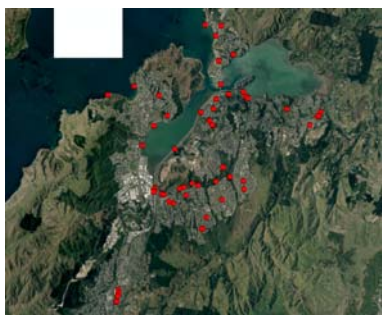
Unconsented Network Overflows



Background

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Confirmed overflow locations



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Activities Undertaken to Understand Network Issues



- Developed a high level Wastewater Master Plan
- Wastewater flow monitoring
- Rainfall monitoring
- Overflow monitoring
- Water quality monitoring
- Wastewater model update
- Pipe and manhole inspections
- Monitoring wastewater pump station operations
- Assessing inflow and infiltration severity

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Technical Options considered to date

Initial cost estimate range

- Increased pipe capacity (conveyance) \$75M to \$80M
- Cross-harbour pipeline \$96M to \$107M
- Treated overflows \$23M to \$33M
- Storage \$32M to \$56M

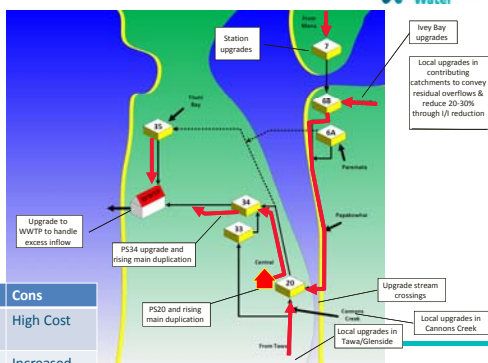
Note: increased management of inflow and infiltration is part of all options

Other alternatives were considered but dismissed:

- Constructing a second treatment plant elsewhere
- Pumping Tawa/Johnsonville wastewater flows into the Wellington City collection system for treatment at Moa Point

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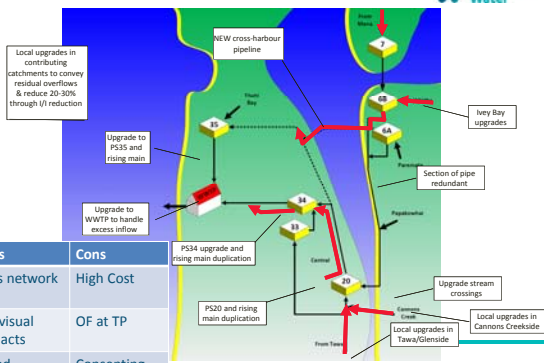
Option 1: Conveyance to WWTP



Pros	Cons
Less network OF	High Cost
No visual impacts	Increased flow to TP

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Option 2: Northern Diversion



Pros	Cons
Less network OF	High Cost
No visual impacts	OF at TP
Good redundancy	Consenting risk

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Option 3: Peak flow treatment in-catchment

Pros	Cons
Low Cost	Consenting risk
Can be implemented in stages	Public objections to treated discharges
Immediate benefits	High Opex cost

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Option 4: Storage

Pros	Cons
Low cost	Consenting challenges
capex staging opportunity	High visual impacts
	Difficult to site

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Inflow and Infiltration programme - focus in Cannons Creek

Pros	Cons
Low cost	Consenting challenges
capex staging opportunity	High visual impacts
	Difficult to site

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Inflow and Infiltration reduction



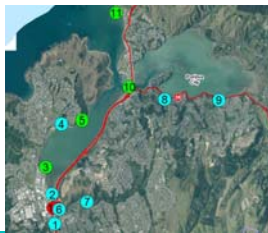
- Source reduction is important
- It is anticipated a 25% reduction of inflow and infiltration could be economically achieved
- Currently Inflow and Infiltration programmes are being implemented in Cannons Creek, Duck Creek and Linden sub catchments
- Increased management of inflow and infiltration is part of all options listed in the previous slides

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Wet weather monitoring



- Monitoring will help understand the effects of overflows
- Wet weather monitoring regime about to get underway
- Monthly monitoring ongoing



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Consenting Process



What are we consenting?

- Investigation and technical option assessment work completed to date - much good work done
- The options now need to be considered within a broad RMA context
- Wastewater discharges to fresh water are a non-complying activity under the NRP and very difficult to consent
- RMA option assessment process has commenced

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Consenting Process (continued)



Engagement focus

- Need to *inform* on work done to date and *engage* on potential options
- Multi-channel engagement proposed, reaching out to all interested and affected groups, parties and stakeholders
- Community input essential to identifying a 'preferred option'
- Co-ordinated with engagement on the Porirua WWTP main discharge consent renewal (expires 2019)

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Consenting Process (continued)



Potential short term and long term outcomes?

- Any preferred option will be subject to PCC LTP funding and council priorities
- Long term solution based on principles of adaptive management, flexibility and long term investment
- Application of the Best Practicable Option approach

Discussion

- *Short term consent to facilitate long term investment?*
- *Is the Whatua the planning 'vehicle' to deal with overflows instead?*

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Questions?

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