

Wastewater Overflows in Māpua and the rest of the region

To: Māpua District Community Association 10 April 2023

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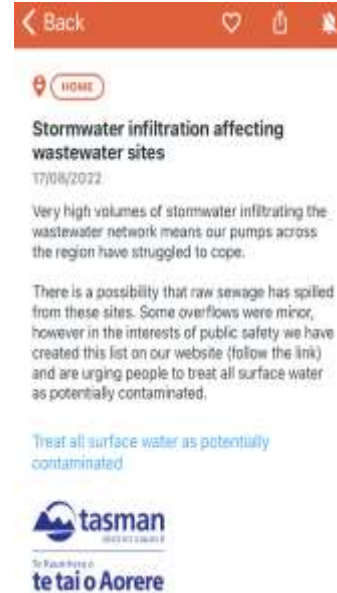
About me:

- Professional in (strategic) wastewater and stormwater management
- Overseas before 1998 and in NZ since 1998
- Managed big wastewater planning projects (North Shore / Auckland)
- Hearing commissioner for 3 years
- Last 8 years advised many councils
- Multiple papers/presentations – some awards



Basis for this presentation

- Concerns raised by MDCA and members of community
- Answers received by TDC staff :
 - Various emails
 - Formal letter from regulatory team
 - Technical info received through a official information request
- And my experience



The Theory

Wet weather overflows unavoidable

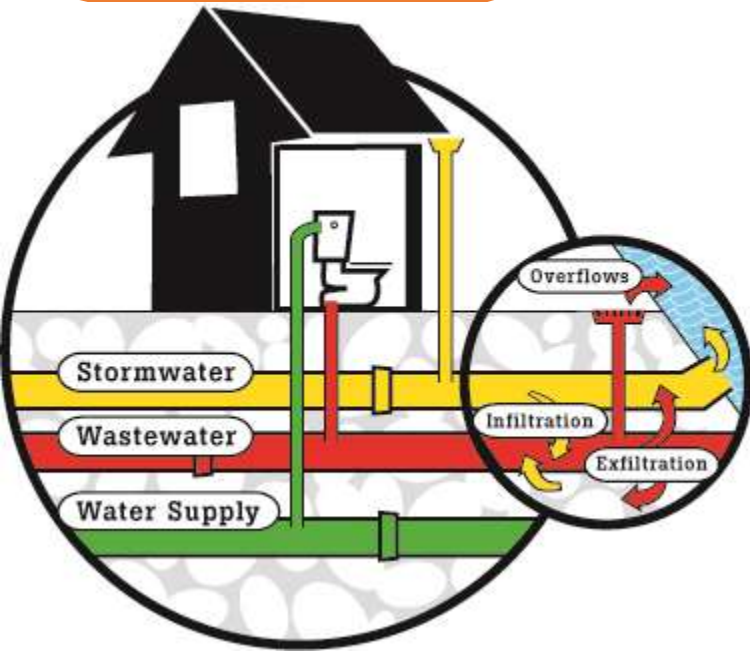
- All sewage networks let stormwater in (Inflow and Infiltration) – but not evenly distributed
- Wet weather overflows occur when the network capacity can't cope with the addition stormwater
- I have never seen networks that don't overflow
- Networks never behave according to theoretical assumptions.

frequency can be minimised through improvement works

- Based on a good understanding of the network
- Improvement options include Storage, Capacity, reduction of Inflow and Infiltration, changes in network configuration

Good practice

- Use of reliable computer models + 10+ years of rainfall data -> average performance
- Strategic planning is more cost effective compared to reactive interventions



Legal

TDC: Discharges of untreated wastewater prohibited

- so not allowed to overflow - can't get a consent
- many overflows in Tasman - but **no enforcement** (only please explain reports & cleanup)

My opinion:

- Rule not intended for networks (never specifically mentioned)
- Rule TOTALLY unrealistic
- Other TRMP rule should be followed: every discharge needs a consent
- Network consent should be applied for : TDC clearly NO APPETITE
- Struggle to see why discharge consent for stormwater but not for wastewater discharges.

Conclusion: TDC does not follow its own rules



Many benefits to use a clear performance target and a consent

Allows to set an agreed and consented standard


Ability to report performance against standard (pass / fail)

Ability justify, scope, cost and prioritise improvement works

Method for regulator to act on non-performance



Calculations not best practice.

- Not using Water NZ modelling standards
 - Very simplistic models
 - Models not reliable (only calibrated on flows from a few small storms)
 - Only used two design storms (1:1yr & 1:5yr) > no idea about frequency
 - Didn't assess Inflow and Infiltration
 - Never spread evenly across an area. Need to use accepted indicators
 - Didn't include climate change
 - Never independently peer reviewed
 - No designated overflow locations > risk to health and properties
 - Lots of data gaps (pipe data, pumping stations)
 - Ruby Bay / Mapua -> never done.
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Overflow records

- August 2022 event
 - No system would cope but
 - Some overflows lasted 3 days
 - Pumping out is very expensive (Mapua Warf) and avoidable
- Some locations in the region appear to overflow very frequently
- Have seen better but also much worse
- But overflows typically under-reported

Conclusion

- TDC...
 - Doesn't follow its own rules – are operating illegally
 - Doesn't apply good planning practice
 - Capital works plan poorly justified (incl renewal)
 - No intend to do anything about this

