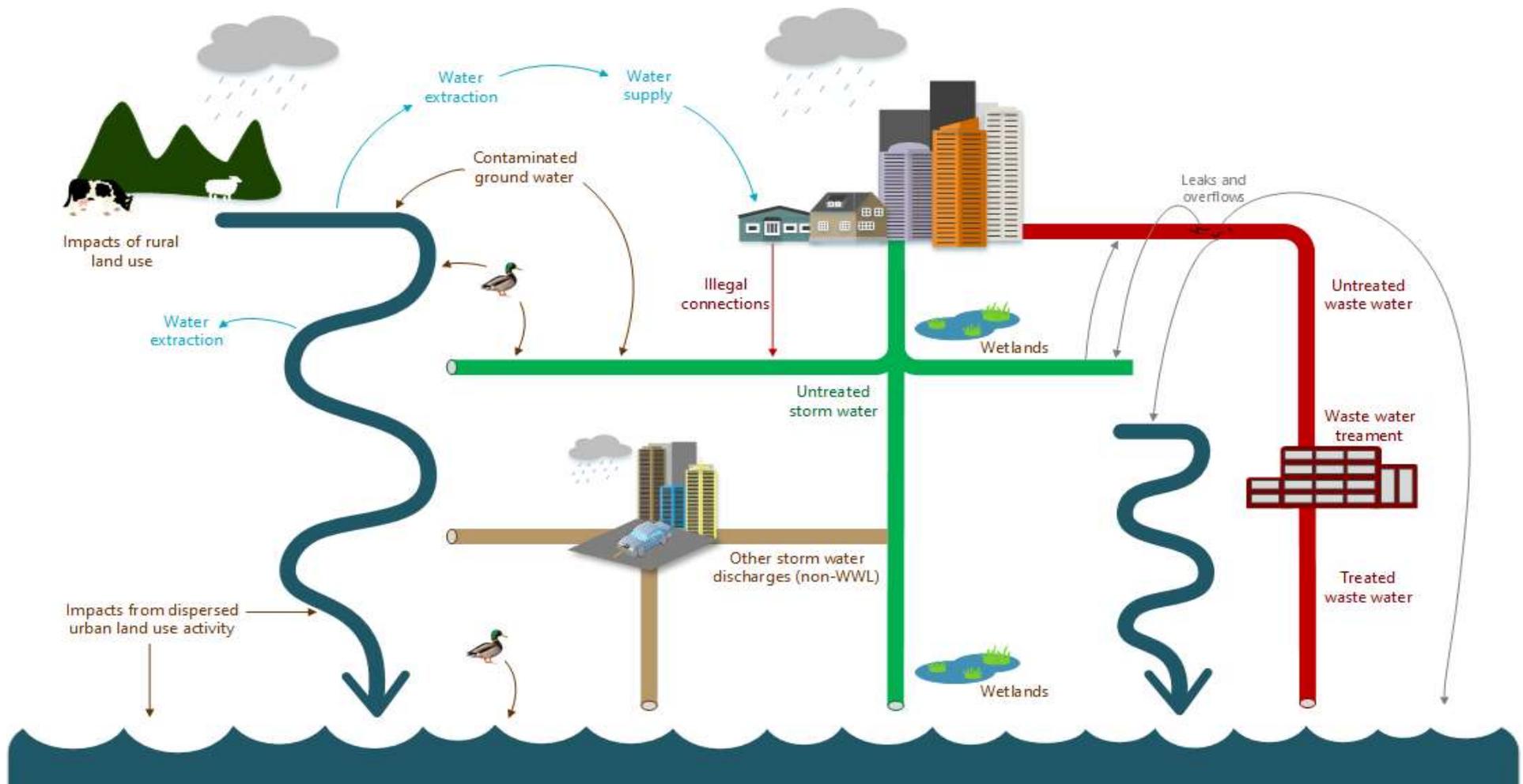




Whaitua Te Whanganui-a-Tara

**Stormwater**

- Legacy systems
- Ageing and fragile networks
- Community connection

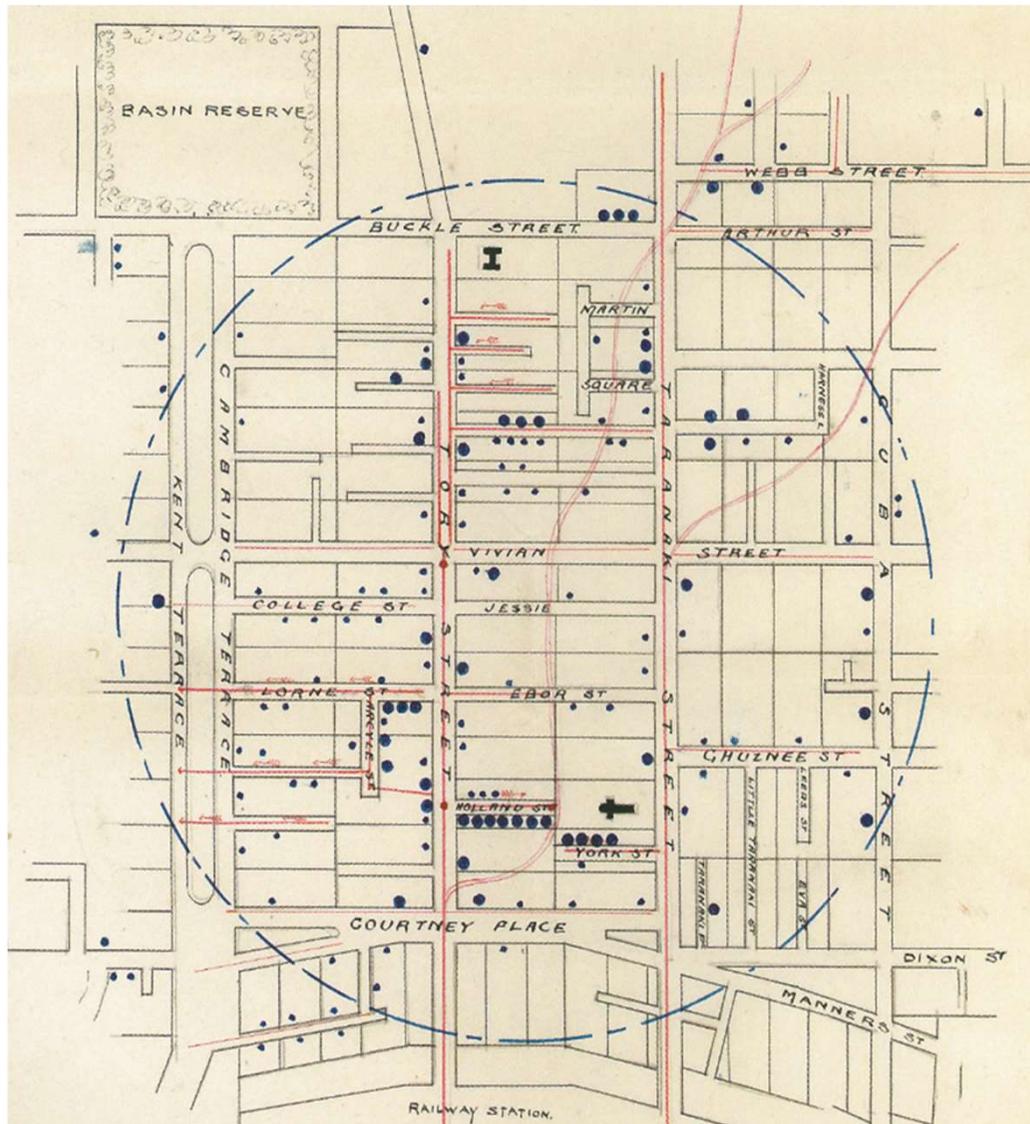


# Legacy Networks



**Stormwater: What is it good for?**

# Legacy Networks



## Wellington Typhoid outbreak 1892

Wellington City Archives (Ref 00233:84:1892/740 Typhoid Map)





**Stormwater: What do we want it to do now**



**Silverstream Shops (1976)**



Waiwhetu (2004)



**Petone Flooding (2015)**



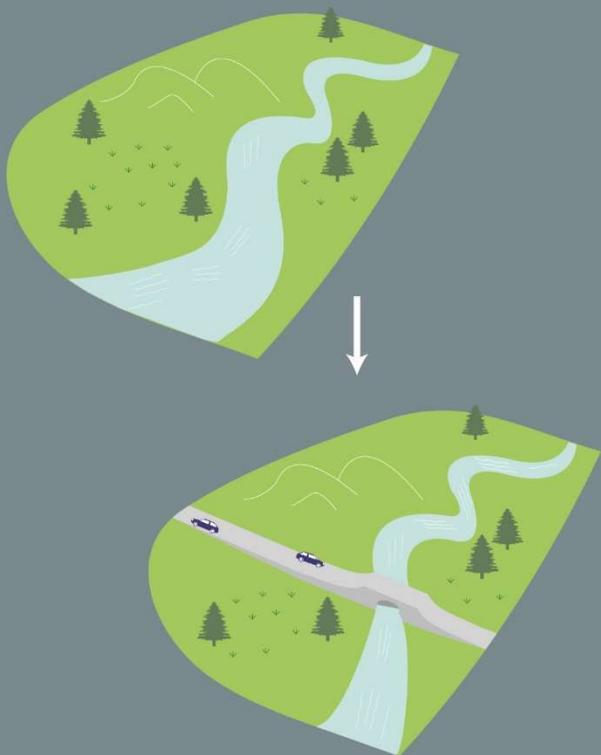
**Aro St (2015)**

# Effective Flood Risk Management

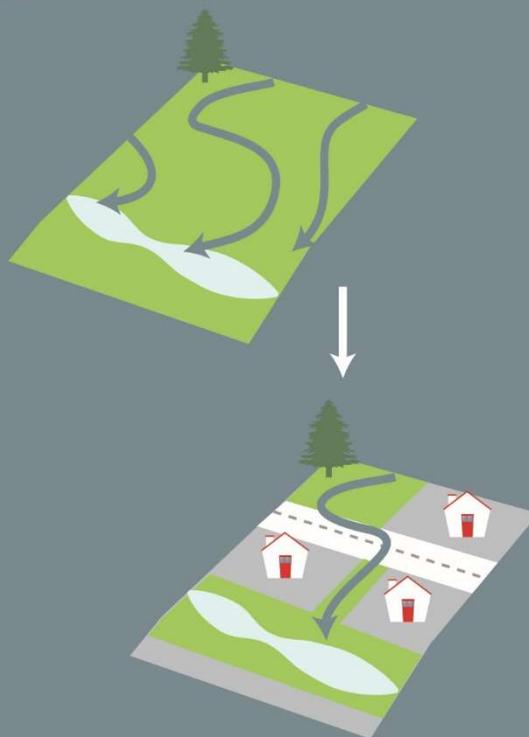


# Building With the Natural Systems

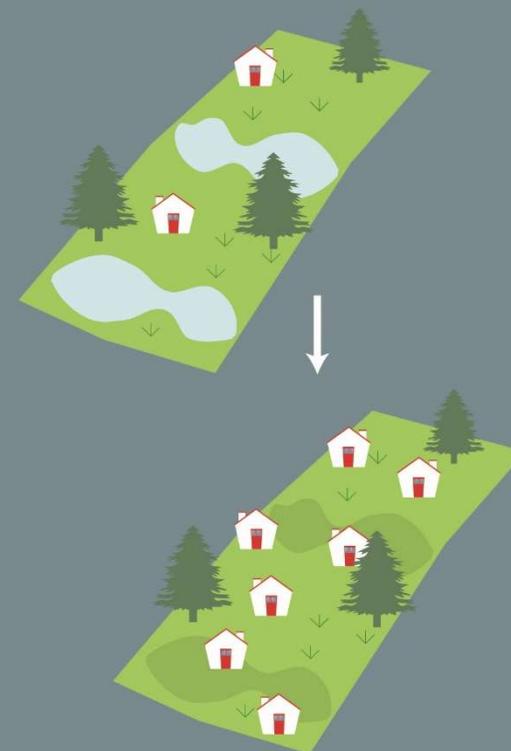
1 Changes to Primary Flow



2 Changes to Overland Flow

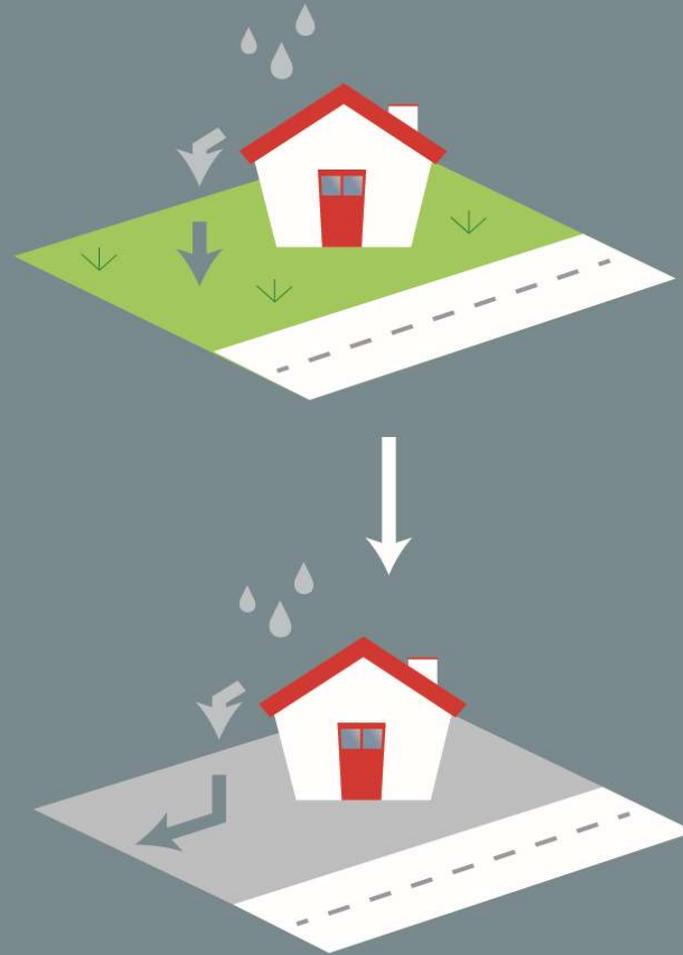


3 Loss of Naturally Ponding Areas



4

## Increased Impervious Areas



Hydraulic  
Neutrality



# Water Quality



3048 09

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0000.5M

Ageing and fragile networks



Percentage of samples exceeding  
540cfu/100mL *E. coli*  
coloured to NPSFM  
2017 attribute bands

*E. coli* Freshwater Sites  
2013-2018

FIGURE 3-6

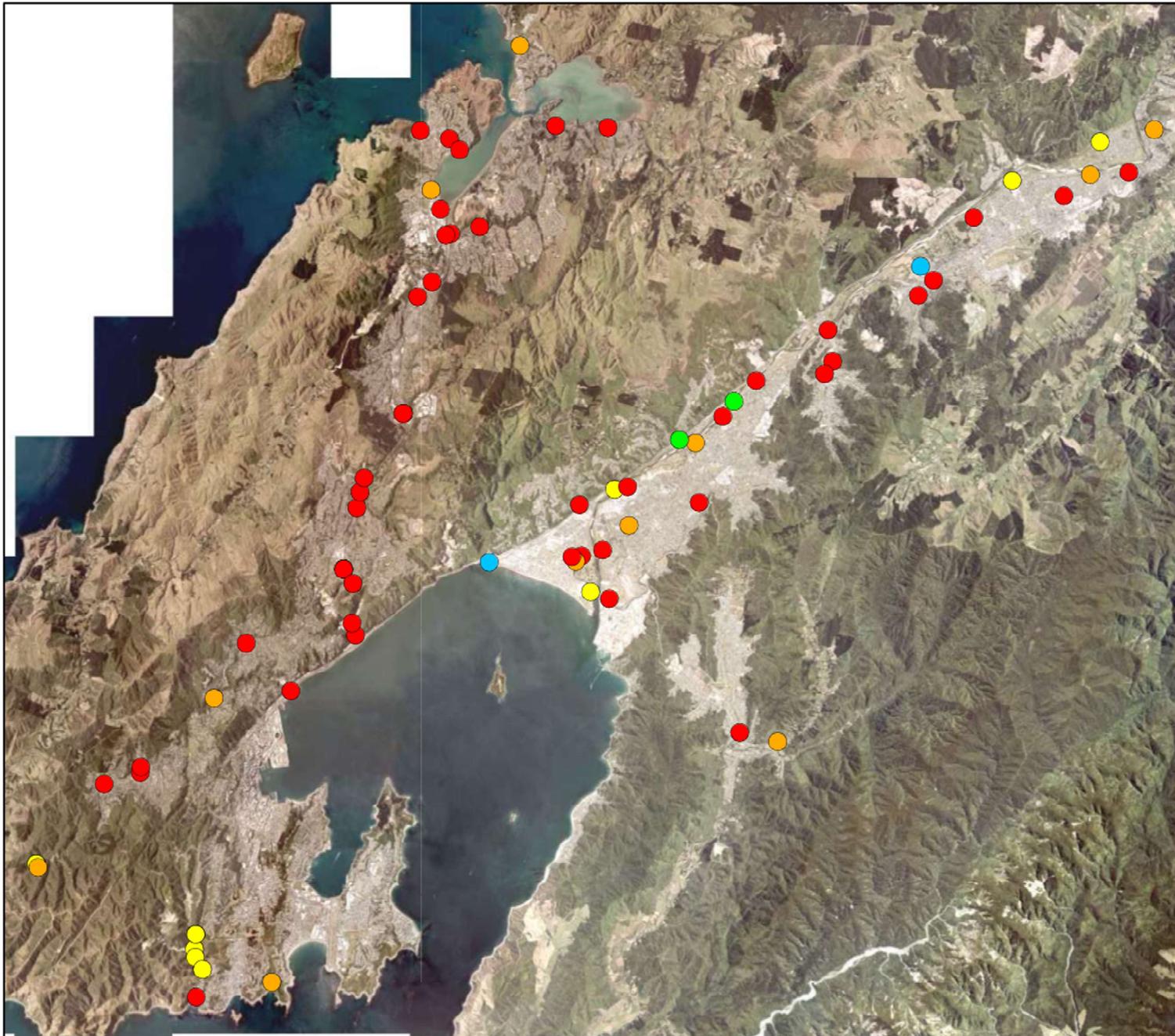
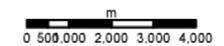
Legend

***E. coli* freshwater sites**

-  Excellent
-  Good
-  Fair
-  Intermittent
-  Poor



1:160,000 Scale at A4





**Community  
Connection**

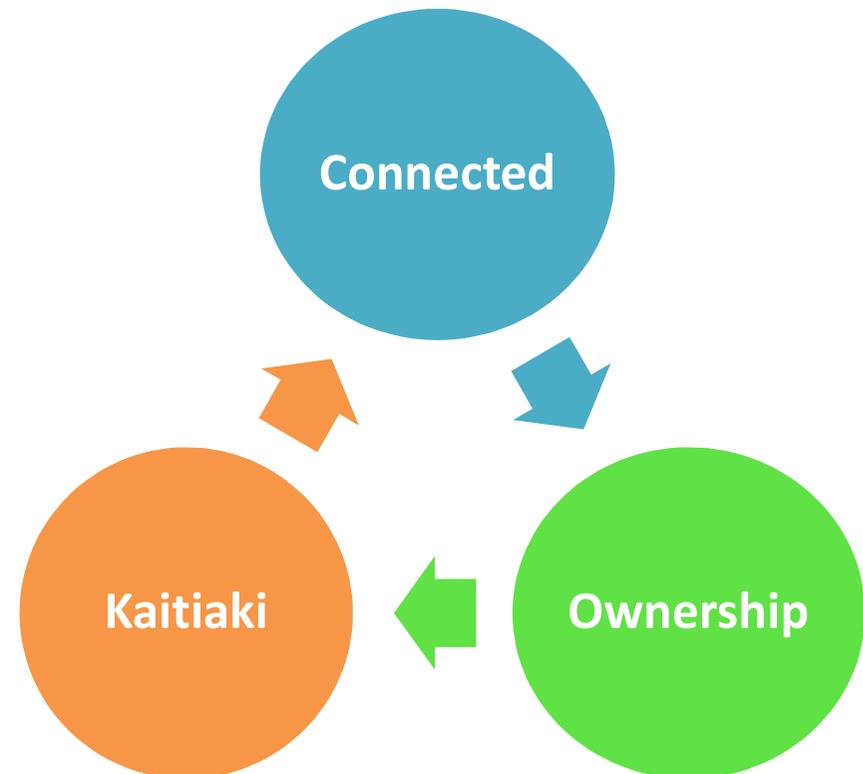


**Community connection**

# Connection

Connecting people with our waterways and our harbour

- Access
- Te Mana o te Wai
- Aesthetics
- Safe Interaction
- Ecology



# Taonga



Ka ora te wai, ka ora te whenua.

Ka ora te whenua, ka ora te tangata.