



Ōtautahi | Christchurch

Learning lessons from the 20 year laboratory 'experiment' !

Liam Foster, Peter Christensen
& Kali Mercier



Proudly brought to you by Water New Zealand

Stormwater 2024

15-17 May | Takina Wellington Te Whanganui-a-Tara

Contents

Why we need a new approach?

What are Sponge Cites?

Ōtautahi
Christchurch:
A living Laboratory

Lessons Learnt

What can you do ?



Proudly brought to you by Water New Zealand

Stormwater 2024

15–17 May | Takina Wellington Te Whanganui-a-Tara



Why we need a new approach

Āhua o ngā rangi CLIMATE



- Decarbonisation
- Sea Level Rise
- Hotter Days
- Drought Frequency
- Storm Intensity & Frequency
- Wildfires

Pāpori SOCIETY



- Changing Population
- Multicultural Communities
- Ageing Population
- Obesity
- Mental Health
- Neurodiversity

Hangarau TECHNOLOGY



- New Mobility
- Increased Data Reliance
- New Methods of Construction
- Cyber Security
- Workforce Evolution
- Remote Service Delivery

Hua Taiao RESOURCES



- Water Management
- Renewable Energy & Electrification
- Nature & Biodiversity
- Circular Economy
- Workforce Capability



What are sponge cities?

- A sponge city is an urban area designed to mimic natural systems, that absorb, and storing rainwater (below or above ground) rather than letting it overwhelm drainage systems and core city functions.
- It uses blue / green infrastructure like parks, wetlands, and permeable pavements to slow down and capture water, reducing flood risks, improving water quality, and enhancing biodiversity.
- Essentially, it's about working with nature instead of against it to adapt cities to heavier rainfall and climate change impacts.



Photo Credit

- Haikou city, China - Turenscape
- Seattle, USA – Walsh Construction
- Karens Minde, Copenhagen, Denmark – Juan-Palma Alvarez

water
NEW ZEALAND
The New Zealand Water & Wastes Authority

Key Principles for Aotearoa



Water is a
taonga

Prioritise
Nature

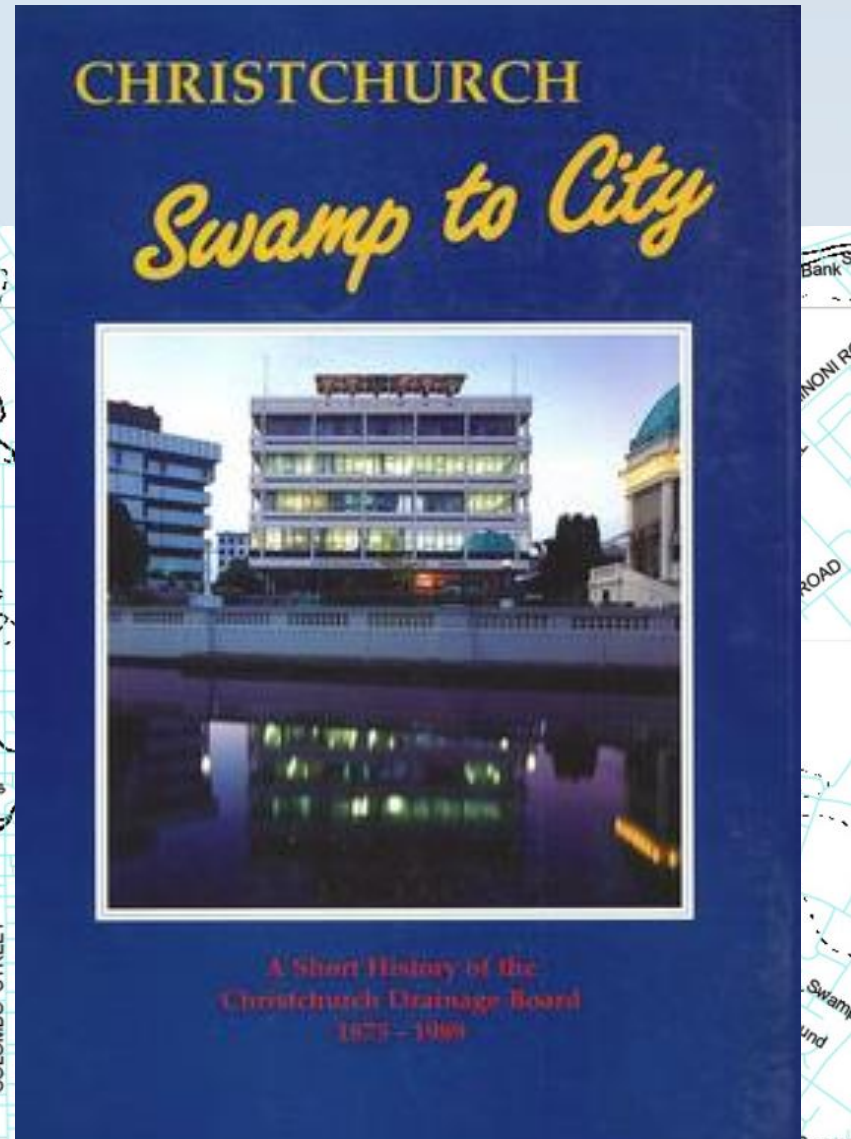
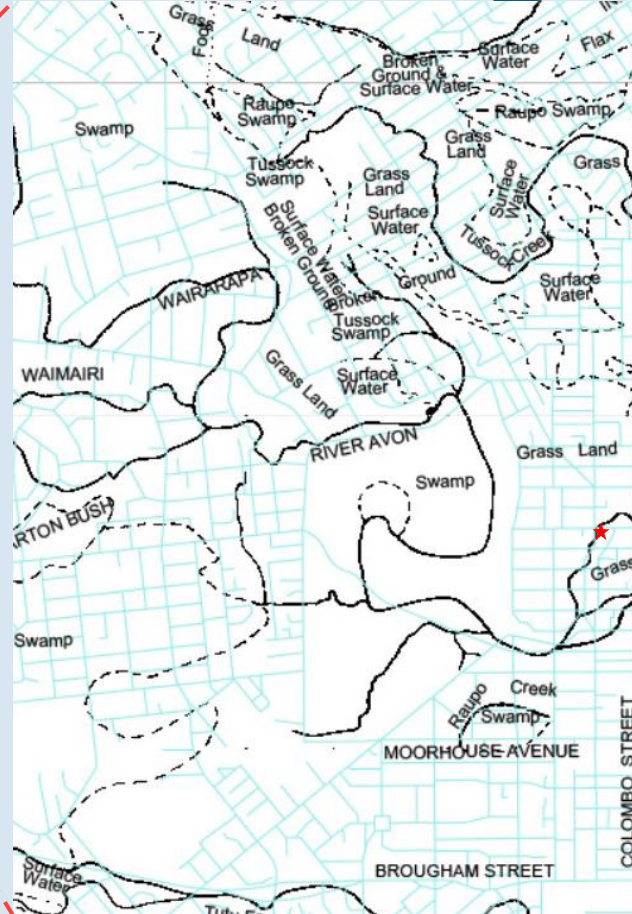
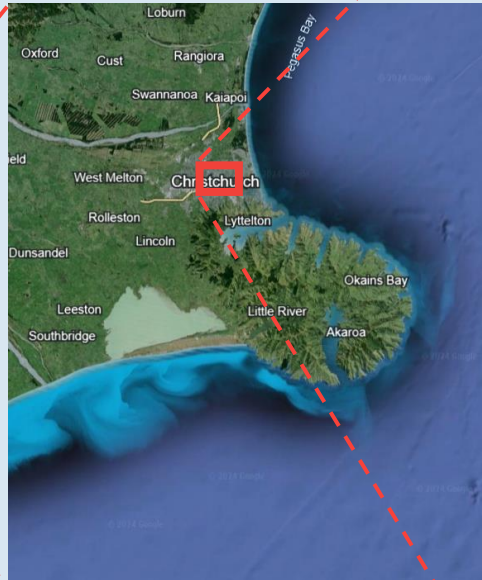
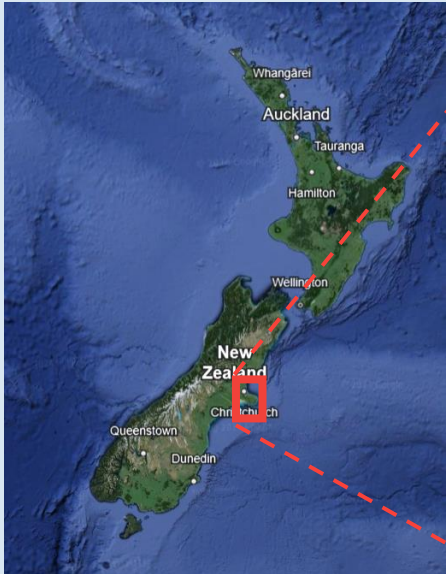
Involve our
communities

Weave in
Mātauranga
maori

Ōtautahi / Christchurch – A living laboratory

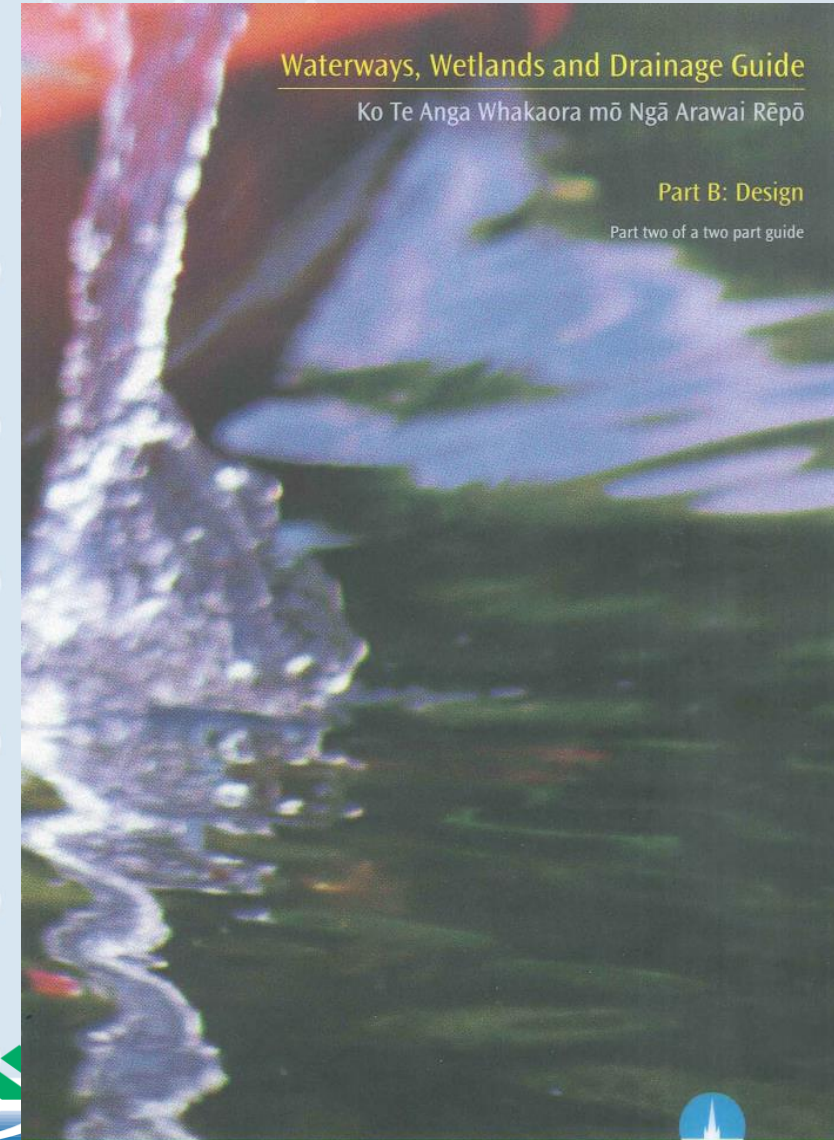
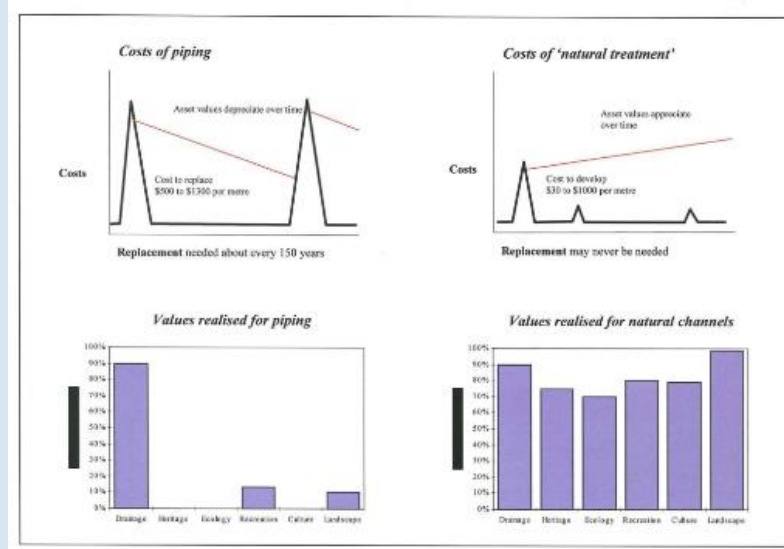
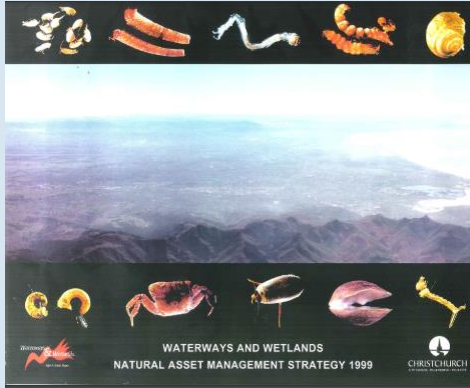


The Christchurch setting



Proudly brought to you by Water New Zealand
Stormwater 2024
15-17 May | Takina Wellington Te Whanganui-a-Tara

Pioneering implementation & changing directions



Six values framework

- Culture
- Drainage
- Ecology
- Heritage
- Landscape
- Recreation



CENTRAL CITY NEIGHBOURHOODS PROJECT AREA 7
ADDINGTON

NEIGHBOURHOOD

Character

VISION: DAYLIGHT & STREET FEATURES

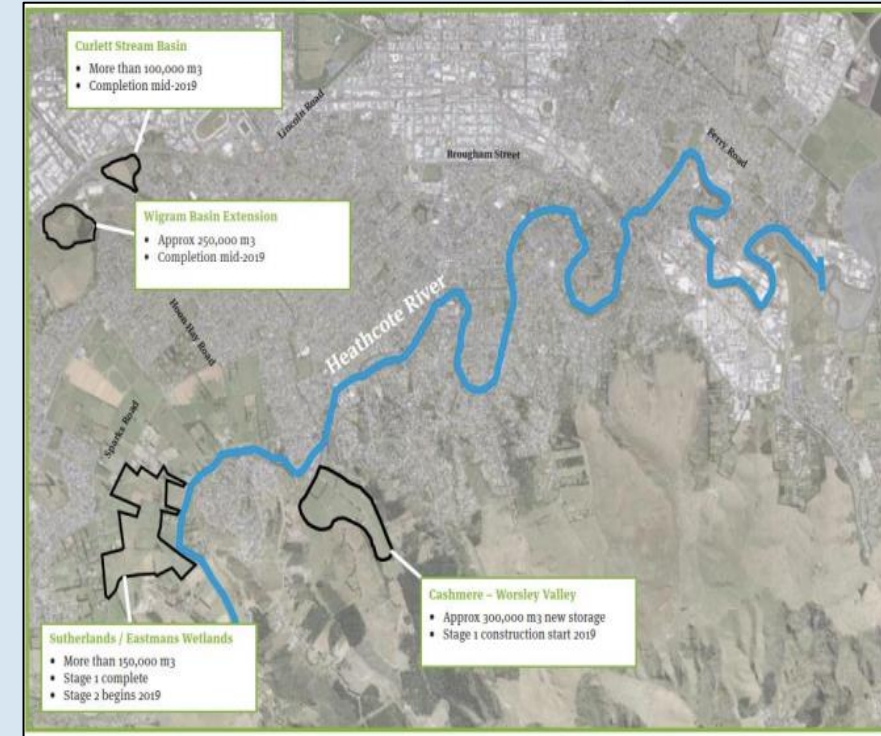
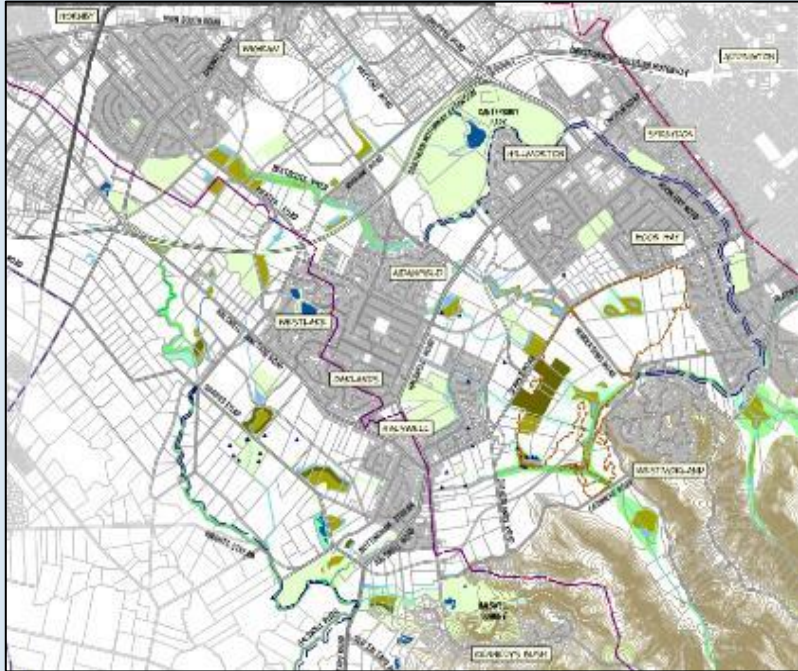
Existing and Potential Values:

- Addington Park Society's community garden, Jacksons Creek waterway & Addington Park Reserve have ecological, heritage & scenic recreational value. The City of Christchurch has a heritage covenant over the park at Dunelm Street.
- The heritage features of Church Square, Addington Cemetery & Addington Place are in various stages of heritage protection & conservation.
- Work with community groups to reduce & relocate street waterways.
- Investigate a SPM along the Jacksons Creek waterway. Planting trees & establish paths along the creek to provide amenity & enhance area property.
- Investigate 'lightfooting' waterways & integrating with drainage to provide amenity & public space.
- Consider relocation of low lines in waterways.
- Relocate open waterways, create multiple access & investigate 'lightfooting' of piped systems & relocation of open waterways.

What are we left with ?



What are we left with ?



South-West Area Plan & Upper Heathcote Storage

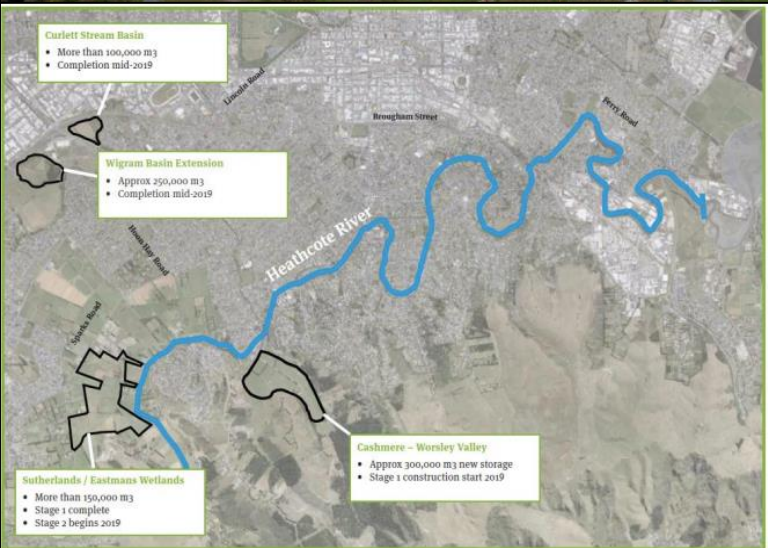
- *Enhanced community resilience*
- *> 1.75 million m³ of storage*
- *> 15 kms of recreational pathways*
- *Enhance habitats – manu*
- *Slowly improving water quality*



Stormwater 2024

15-17 May | Takina Wellington Te Whanganui-a-Tara

Proudly brought to you by Water New Zealand

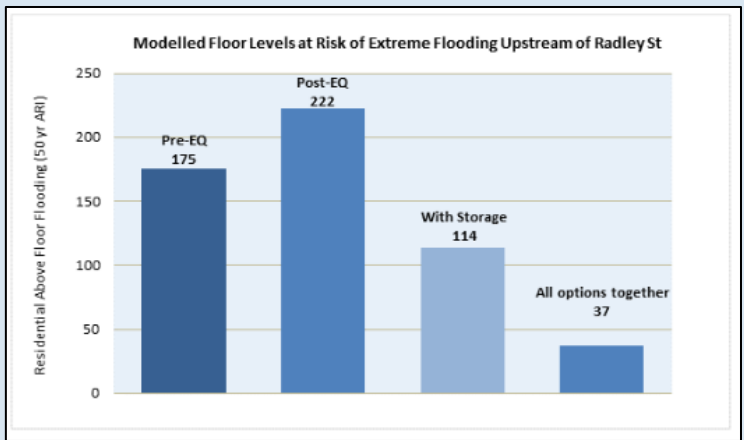


ŌPĀWAHO / HEATHCOTE RIVER PROJECT NON-FLOOD BENEFITS

(on completion of scheme)

Runoff from 3,000 hectares treated

169 hectares of open space (larger than Hagley Park)



82 hectares of wetland habitat created

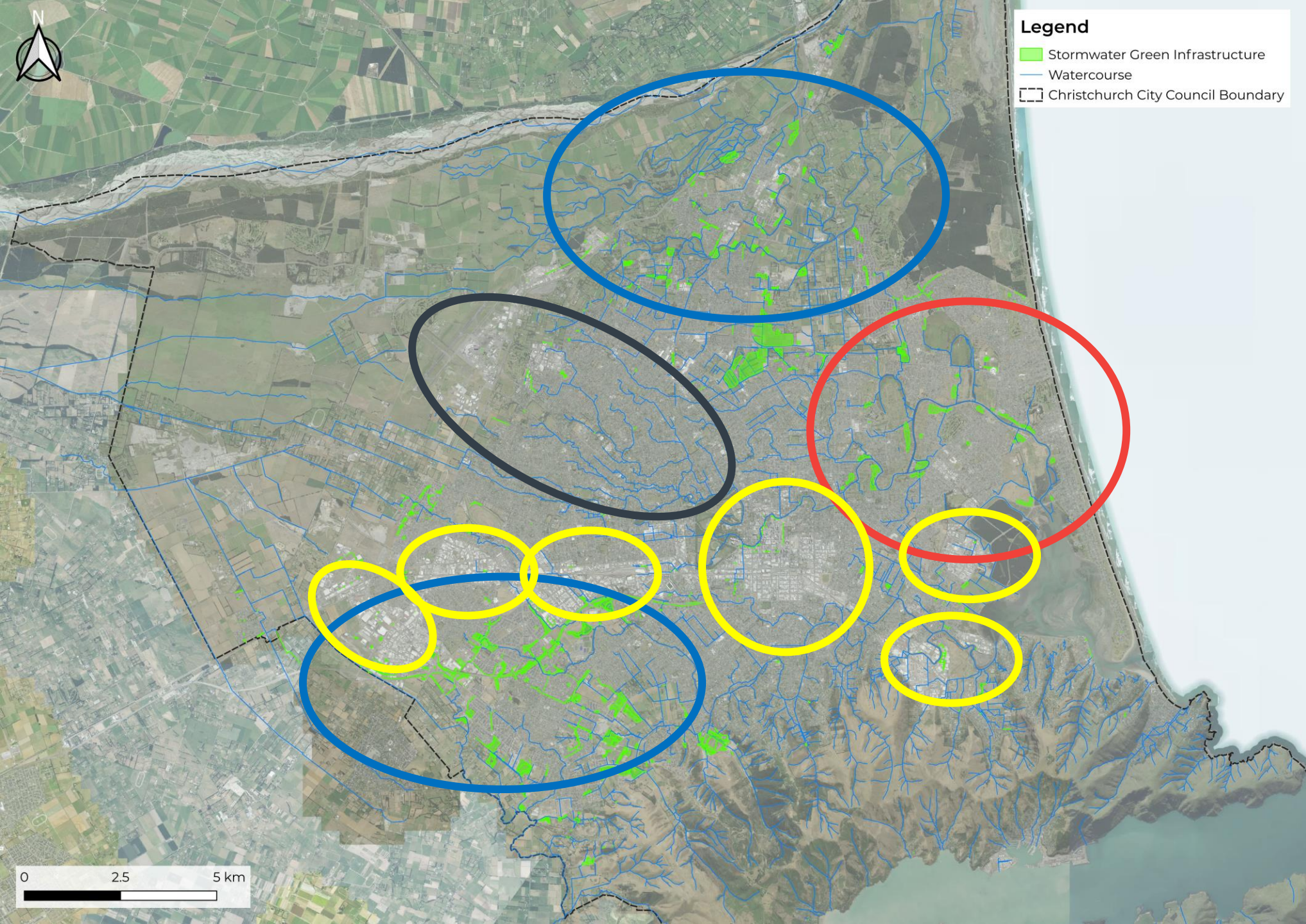
40 hectares of dryland native planting

730,000 native plants added

17,000 large native trees planted

13.5km of stream bank naturalised





...dly brought to you by Water New Zealand

Stormwater 2024

| Takina Wellington Te Whanganui-a-Tara

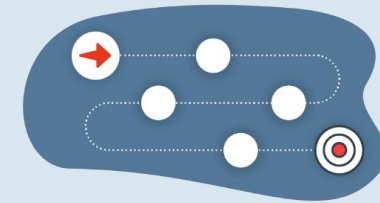
Ka mua ka muri – Sharing lessons



Strong vision & Leadership



Collaboration is Key



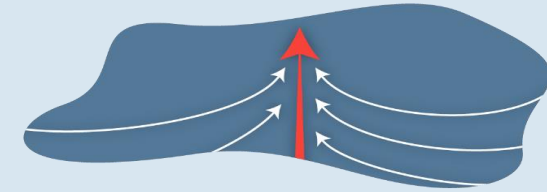
Strategic Vision & Planning



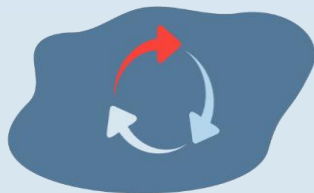
Pilot Projects & Learning



Community Engagement



Maximising Outcomes: The Six Values



Life-Cycle Considerations



Success is easier in Greenfields



Localised Implementation

What can you do next ?



Recognise the potential



Be aspirational



Define a 100-year vision
for each catchment



Be collaborative



Thank you!
Questions? Patai?