

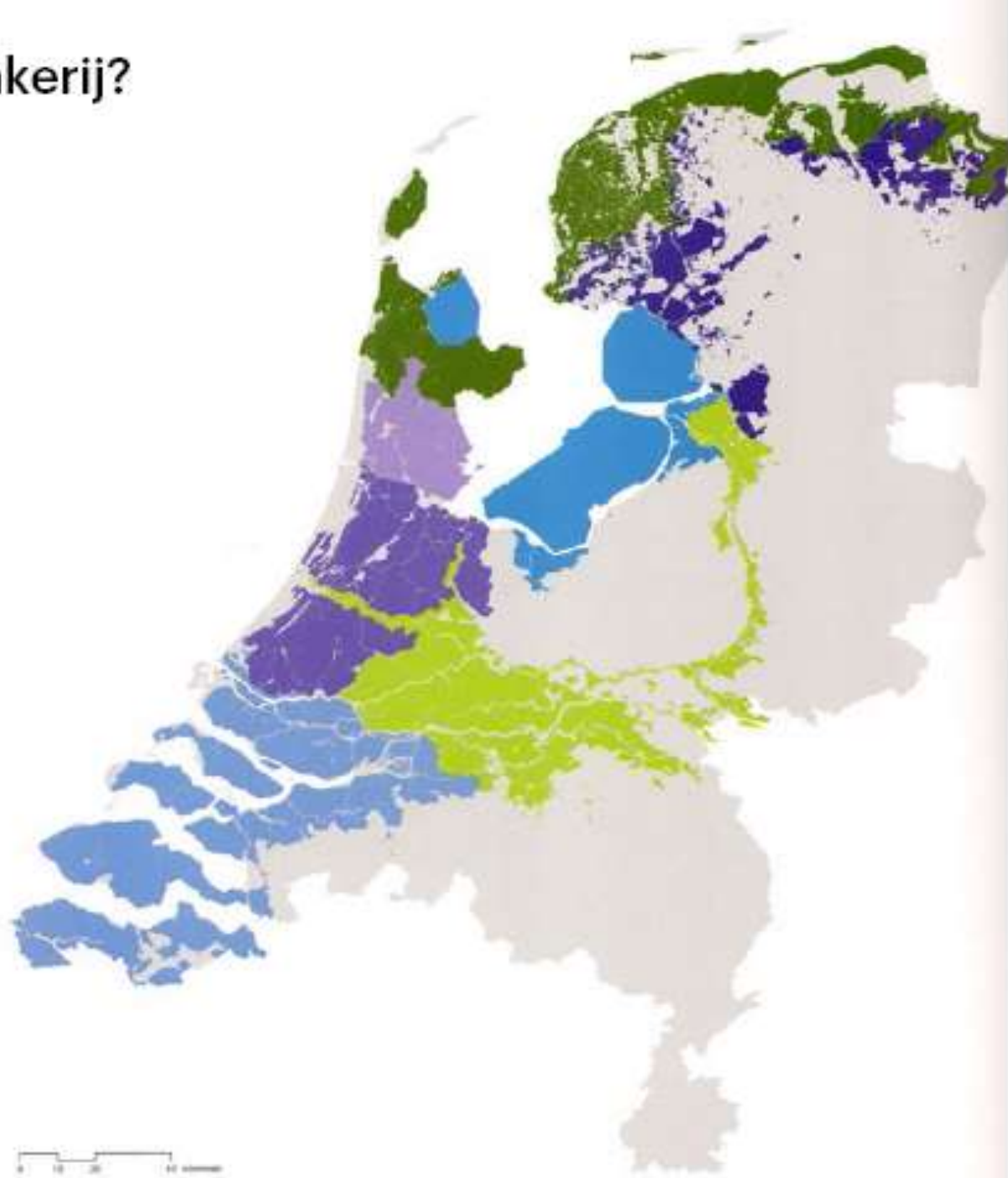
Working with water, design as a leverage

Enno Zuidema

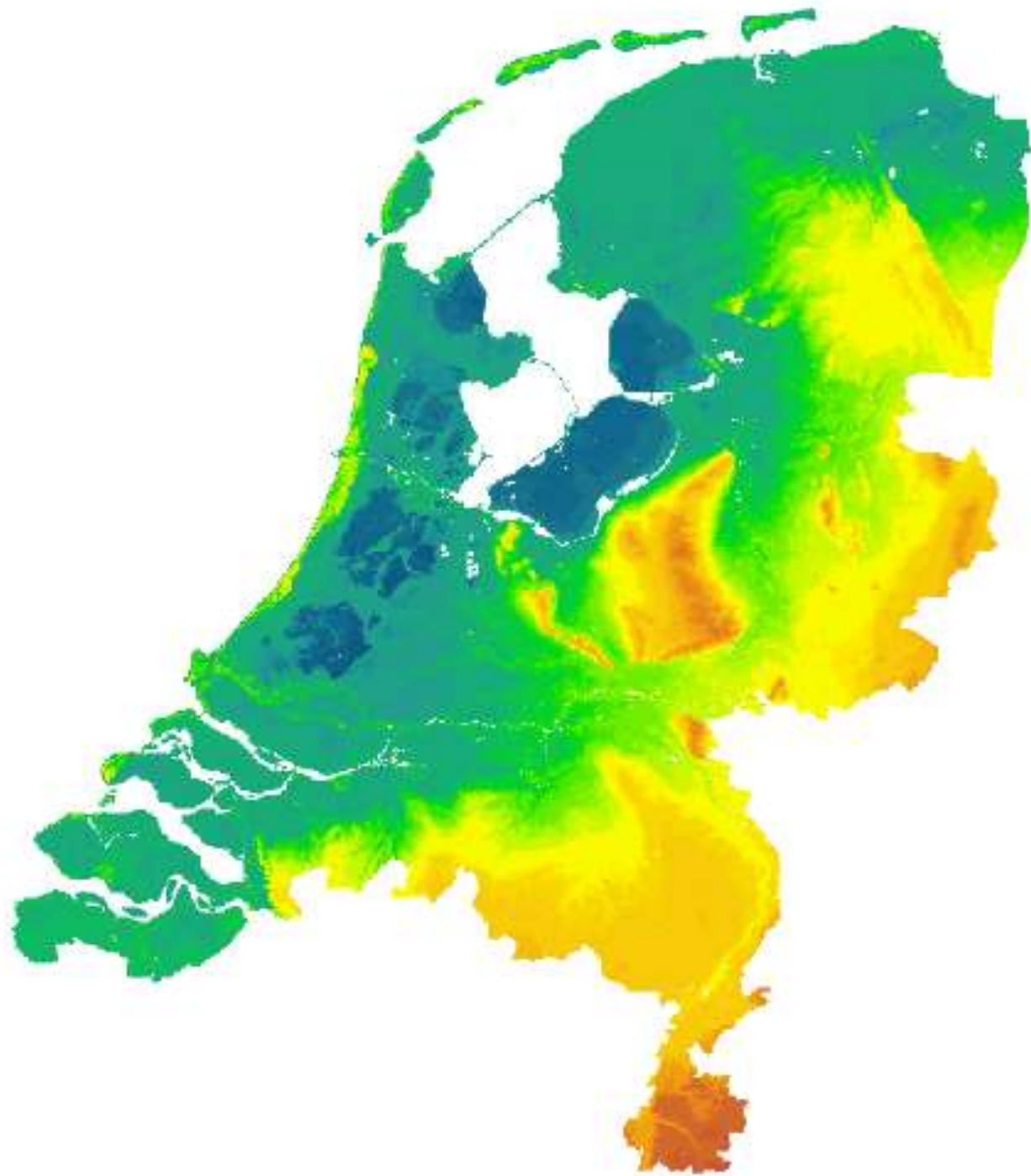
KNW Najaarscongres 2022

Wie zijn wij?

Polder en droogmakerij?



+ of - NAP?



Ontwerper?



Ingenieur?



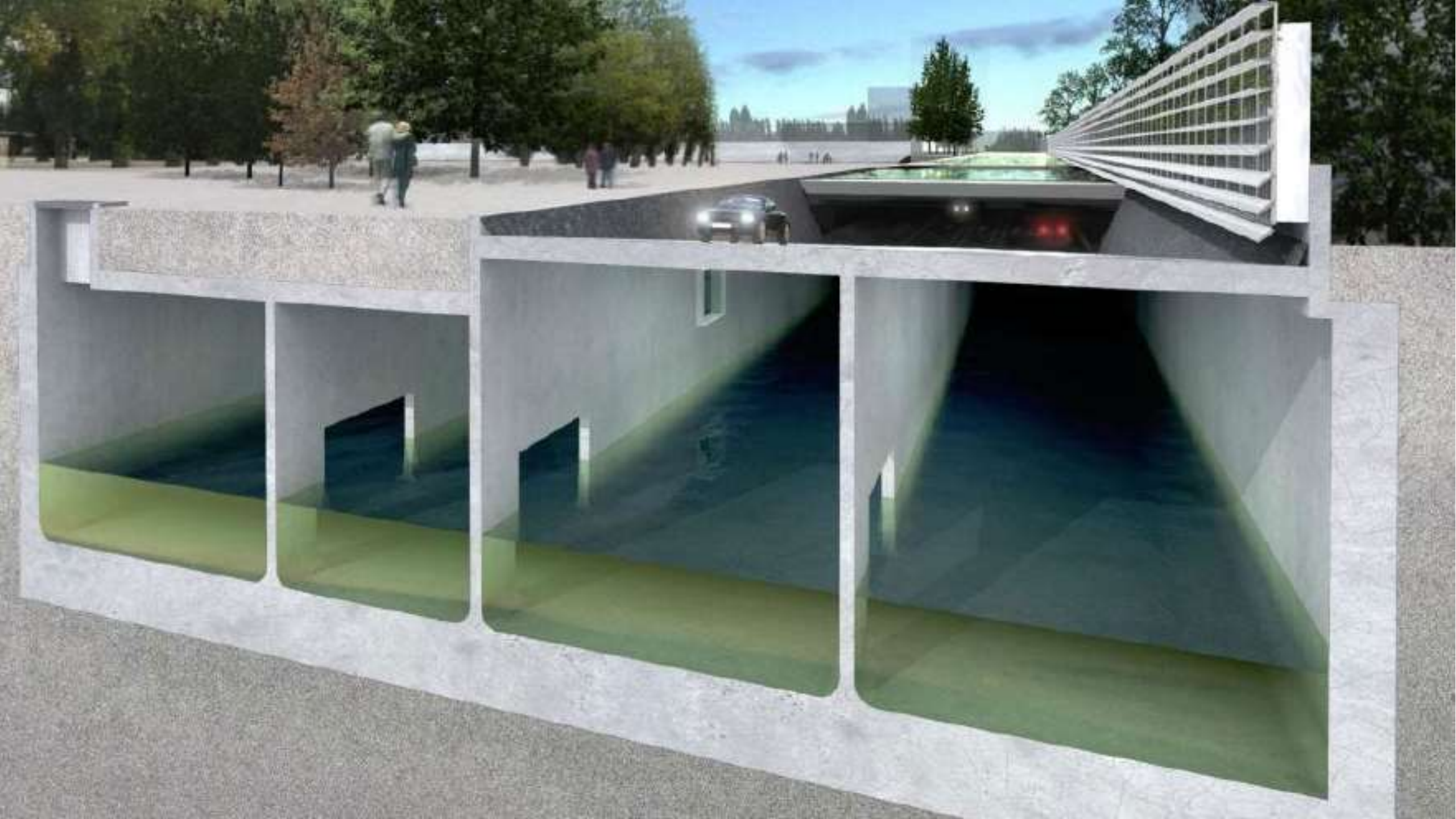
Kampioen klimaatadaptatie?











Veranderende delta









Een water paradijs











Zijn we te goed?



Binnendieze







„Die Zukunft, die wir wollen,
muss erfunden werden.
Sonst bekommen wir eine,
die wir nicht wollen.“

Joseph Beuys

—

„The future we want needs
to be invented,
otherwise we will get
one we don't want.“

Joseph Beuys

ATELIER
GARDENS

Vancouver Sea2City

How will **Sea Level Rise** and flooding
impact our future cities?



Inundation zones 2020 - 2100



Fastest growing cities



• Powell River

• Vancouver

Victoria •

Salish Sea

• Seattle



**In Between
Bridges**



Coopers Park

Stanley Park seawall unrecognizable after wind and flood damage (PHOTOS)

LOCAL NEWS | Jan 8, 2022, 9:25 AM



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During the 2021 atmospheric river event, the United portion of the Trans-Canada Highway (File courtesy: Enrico Serrano Inc.)

News / Local News

Windstorm during king tide batters Metro Vancouver waterfront

West Vancouver was one participant in the 2018 North Shore Sea Level Rise Project and "the predictions, the modelling maps from that project actually indicate exactly what we're seeing today," Donna Powers, communications manager, District of West Vancouver

Derrick Penner
Jan 07, 2022 - January 7, 2022 - 3 minute read - Join the conversation



West Vancouver's Arbutus side park was flooded to an unusual extent by the combination of a windstorm during a king tide on Jan. 7. PHOTO BY JASON ROBERTS/PHO

Environment Canada predicts coming atmospheric river won't be like 2021 event

Heavy rain in Thursday's forecast for the Island

MORETON | Oct. 23, 2022 11:30 AM / LOCAL NEWS / NEWS

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Coming atmospheric river set to hit Vancouver Island later this week is being comparable to last year" according to Environment Canada.

Hoe kunnen we door
samenwerking onze ambities
realiseren?



MVRDV



Indigenous knowledge and design



1. Rooted in Local First Nations Cultures

Musqueam, Squamish, and Tsleil-Waututh have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge, and cultural expressions as they see fit.

Increase visibility and reveal presence of the Musqueam, Squamish and Tsleil-Waututh Nations in the park

Express Musqueam, Squamish and Tsleil-Waututh values and principles

Create a place inspired by and supporting Indigenous cultural practices

2. Replenishing & Reciprocity

Reconnect to land and water

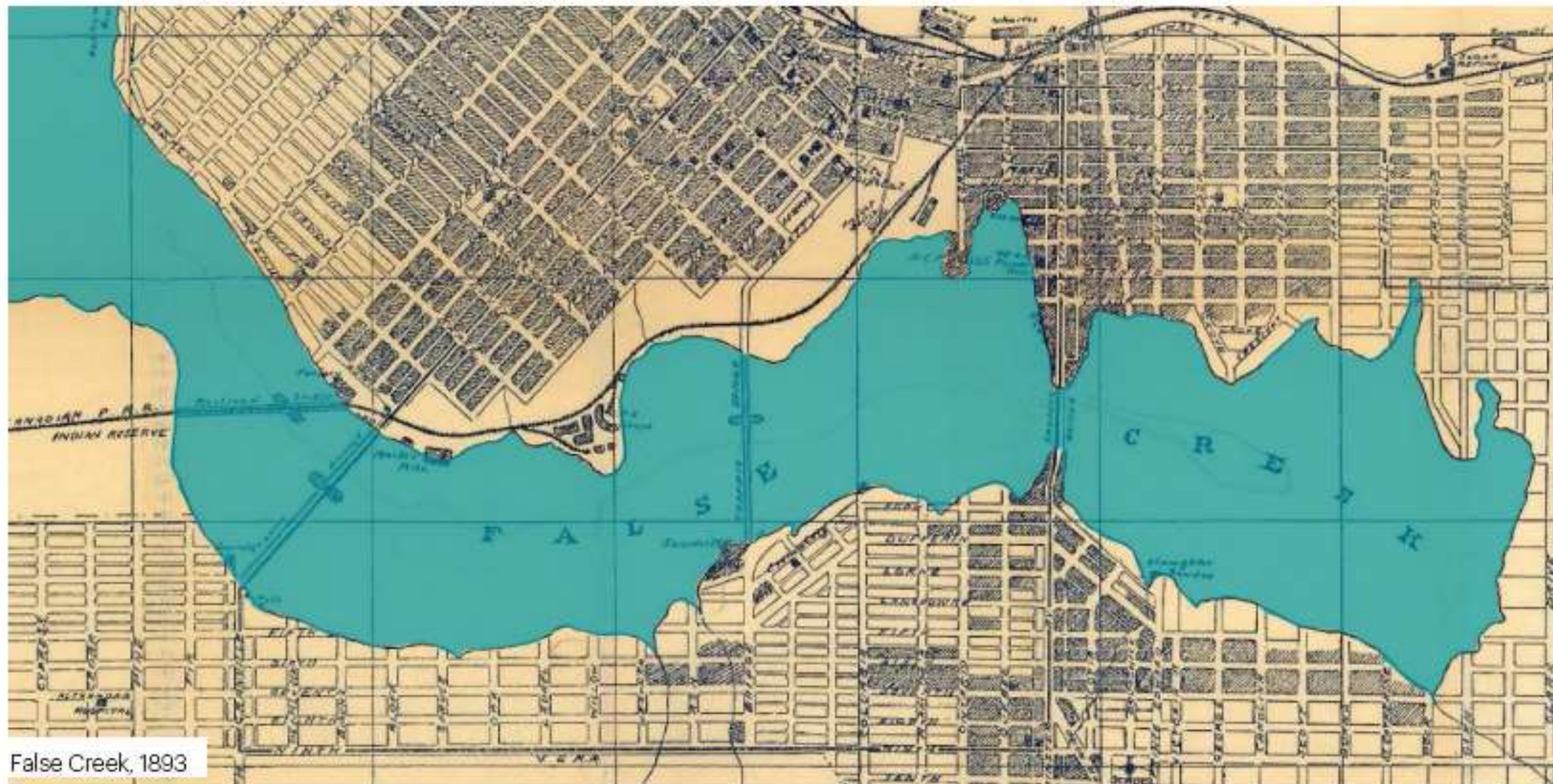
Create a place for nourishment and connection with each other

Create a place of belonging for all Vancouverites

Support Indigenous use of the waterfront.

Re-wilding False Creek 2100

Inspired by the past



False Creek, 1893

The future False Creek will not only redefine Vancouver's **relationship with water**



False Creek, sea level rise (1m), 1:500 storm

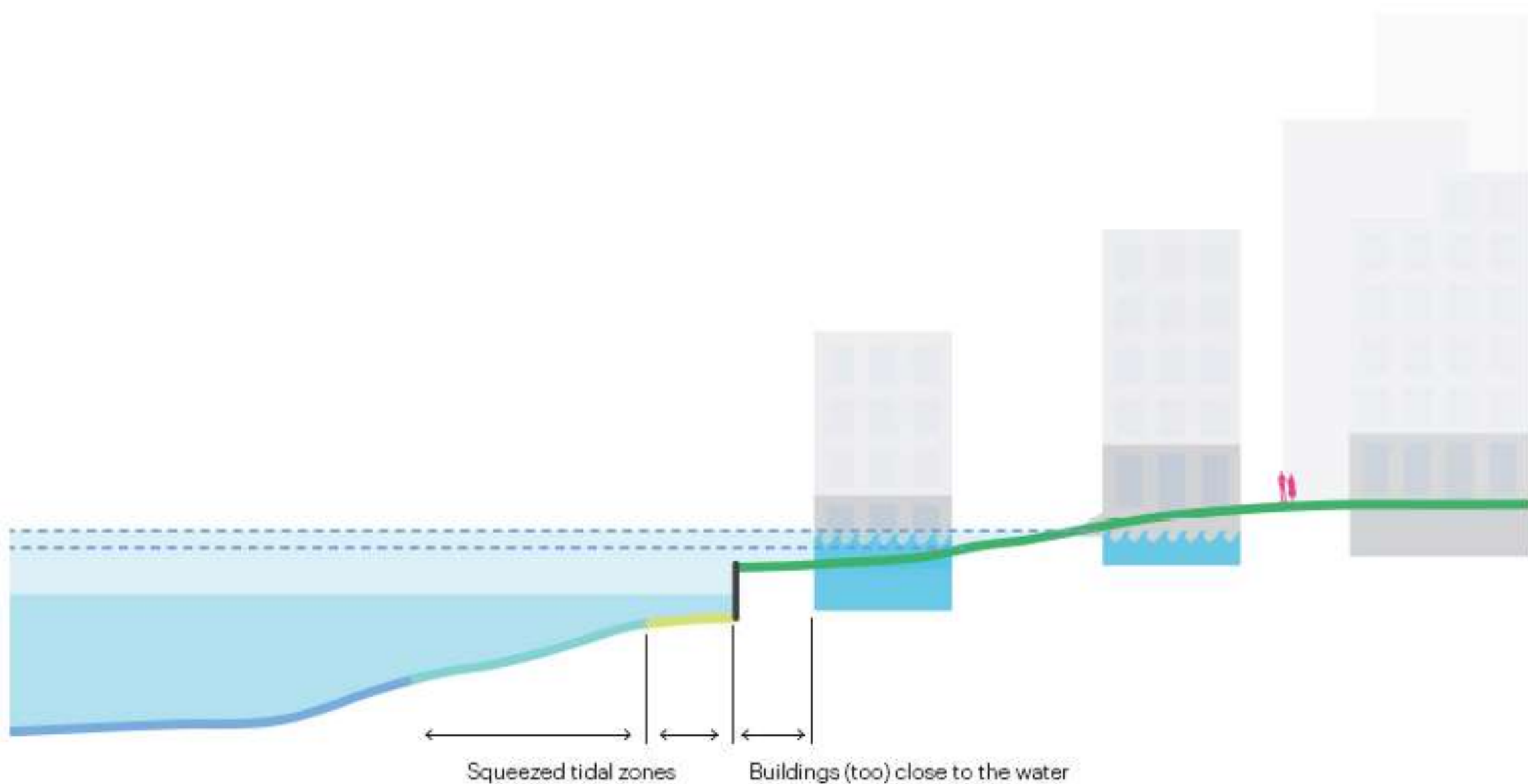
The Resilient Waterfront



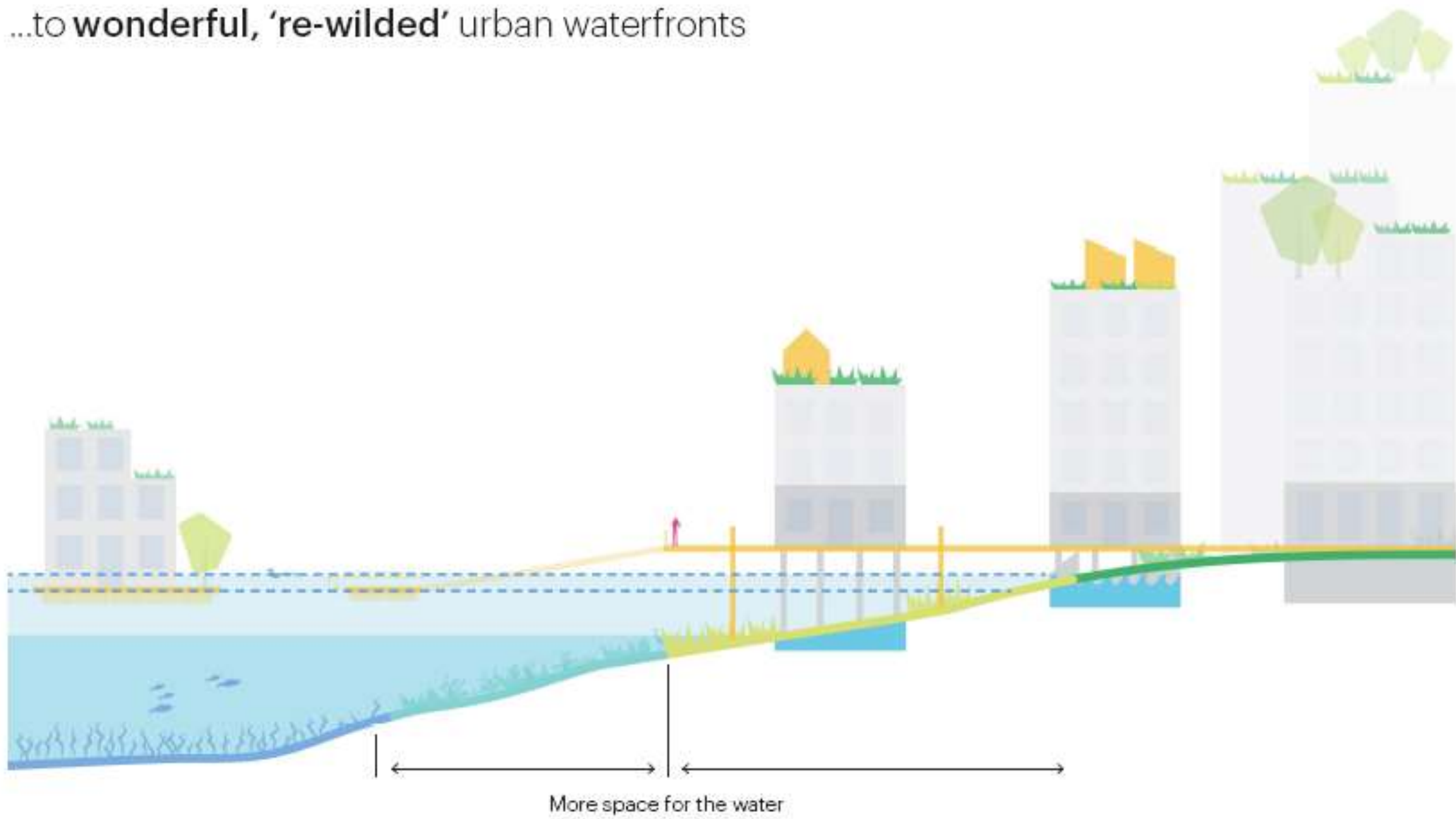
But also become a zone of cultural adaptation in the heart of Vancouver that enables the evolution of an **inclusive, prosperous society - a cultural shift**



From **narrow, hard-scaped** waterfronts...



...to wonderful, 're-wilded' urban waterfronts



From a language of **colonization**...



From
"Resist"



From
"Accomodate"



From
"Retreat"

...to a language of **reciprocity** and **relational adaptation**



To
"Protect
(eachother)"



To
"Host"



To
"Move Together"

How to get there?

Strategies for Sea Level Rise adaptation

Adaptation pathways

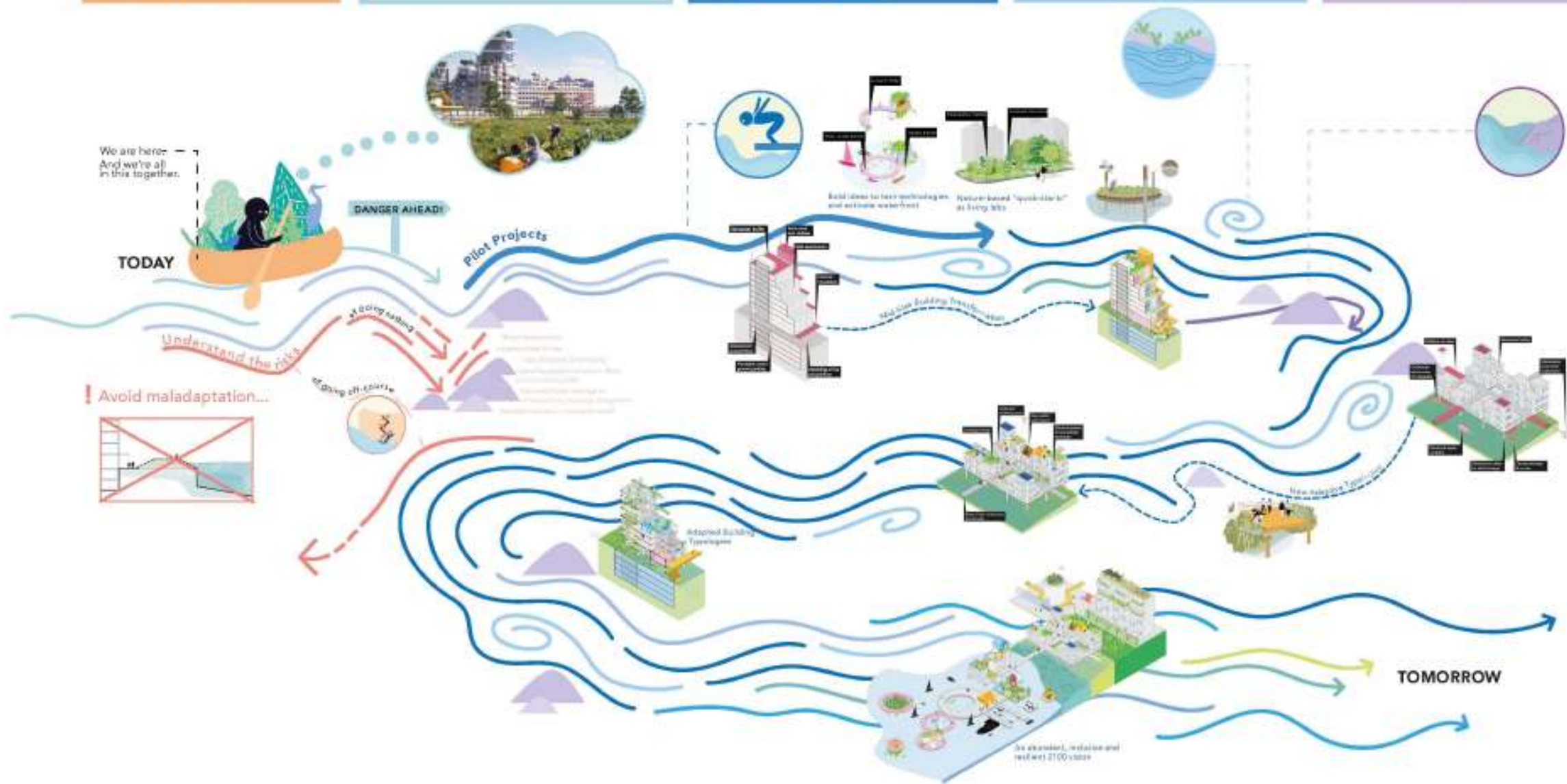
Uphold Host Nations and Community Values

Recognize what was, what is, and what could be

Dive in - Urgent action is needed

Pause to Reflect and Navigate
Where we are and where we're going

Stay Resilient and Adaptive
Plan for uncertainty



Shoreline zoning **future**



Main principles for adaptive buildings



Upgrade utilities



Re-purpose underground structures



Lift the ground floor



Flood-proof circulation



Re-shuffle & flexify program

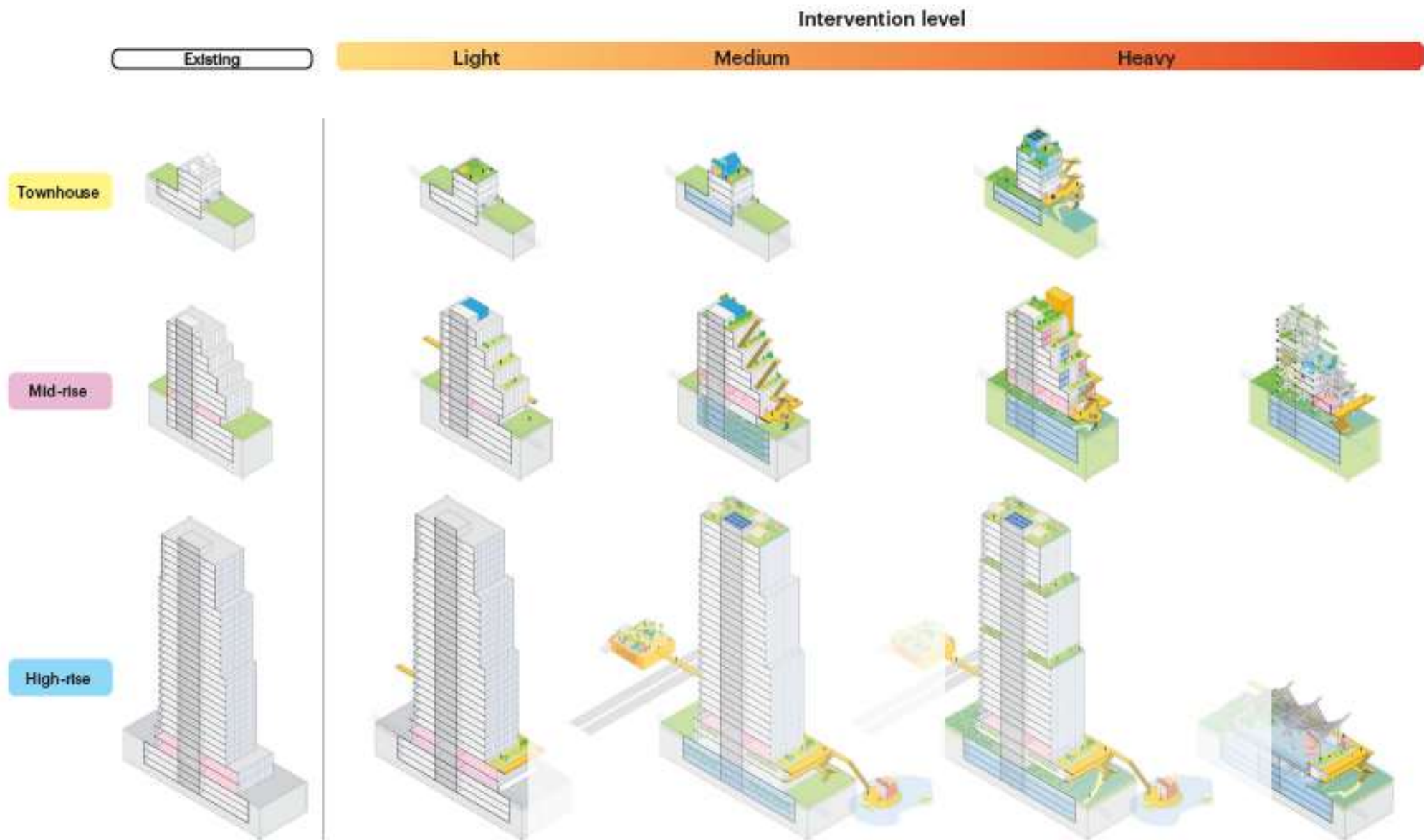


Adapt structures

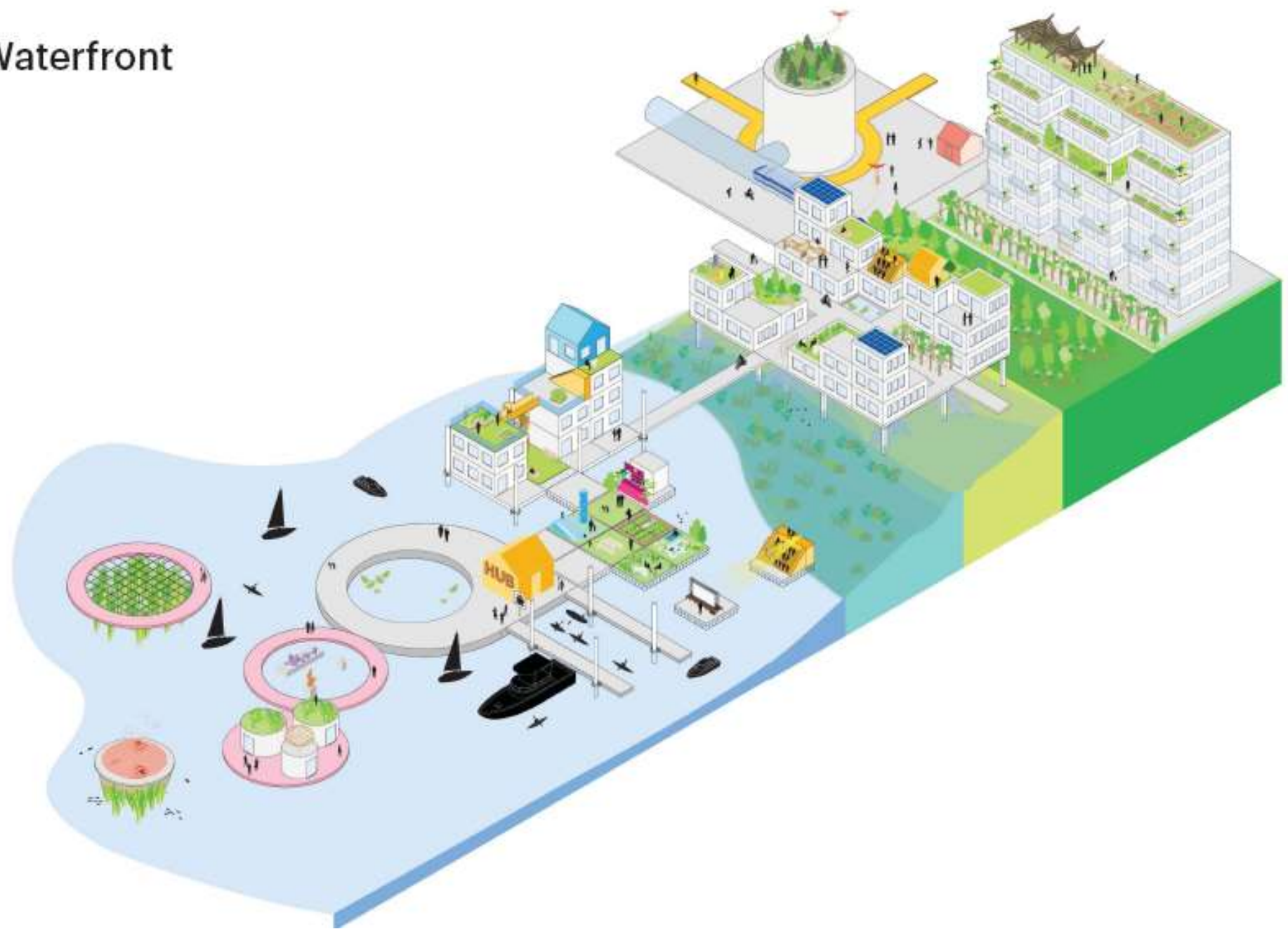
Win-win's for future city systems and community values



Ideas for adaptation of **existing buildings**



The Resilient Waterfront





**In Between
Bridges**

Coopers Park

Coopers Park

Coopers Park today



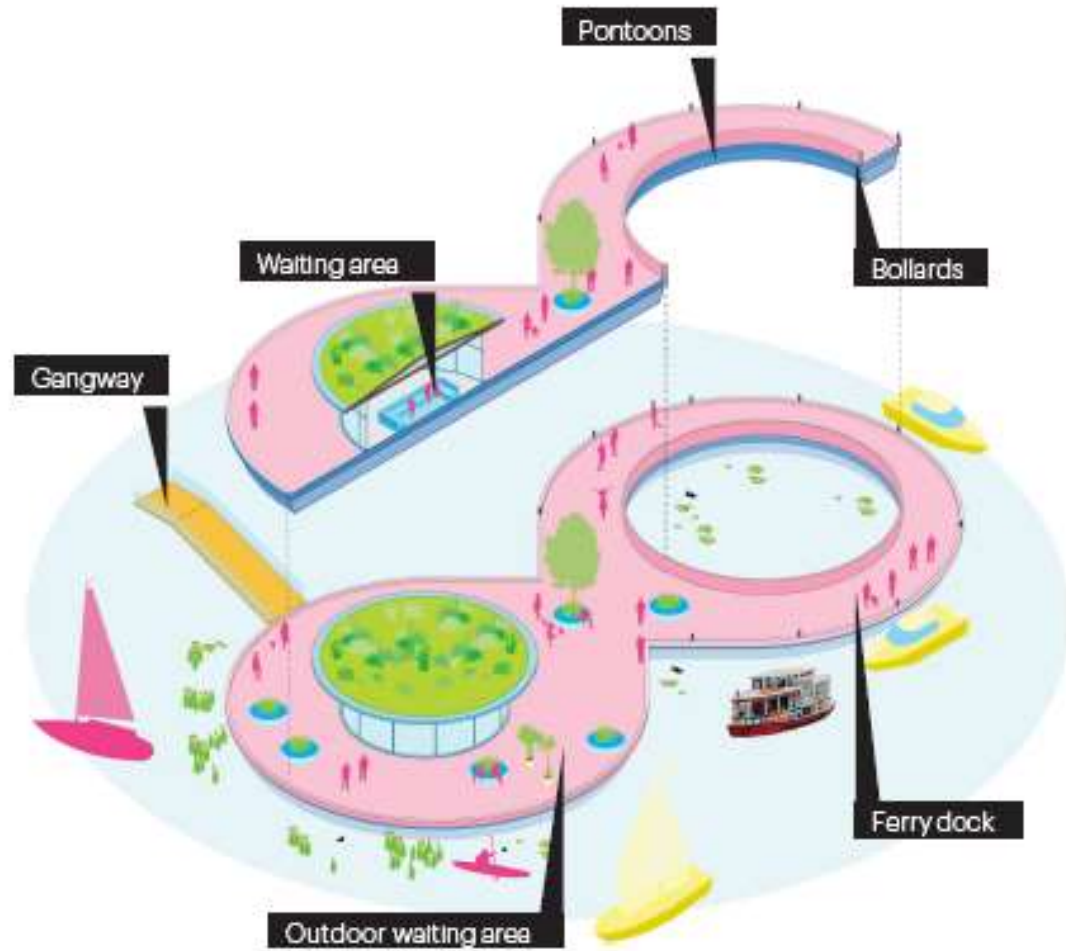
Coopers Park tomorrow



Coopers Park 2100: The Tidal Community of False Creek



Coopers Park Pilot projects: the Water Mobility Hub



Coopers Park Pilot projects: the Floating Walkway





Gagarin Valley

Armenië





Noord Armenië



GAGARIN VALLEY

Sevan Lake















Sion, Switzerland



Spitz, Austria



Jordan Valley, Israel

Valley of 10.000 voices and species



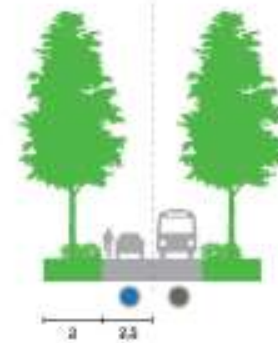
Valley of 10.000 voices and species



The green lanes as connecting thread

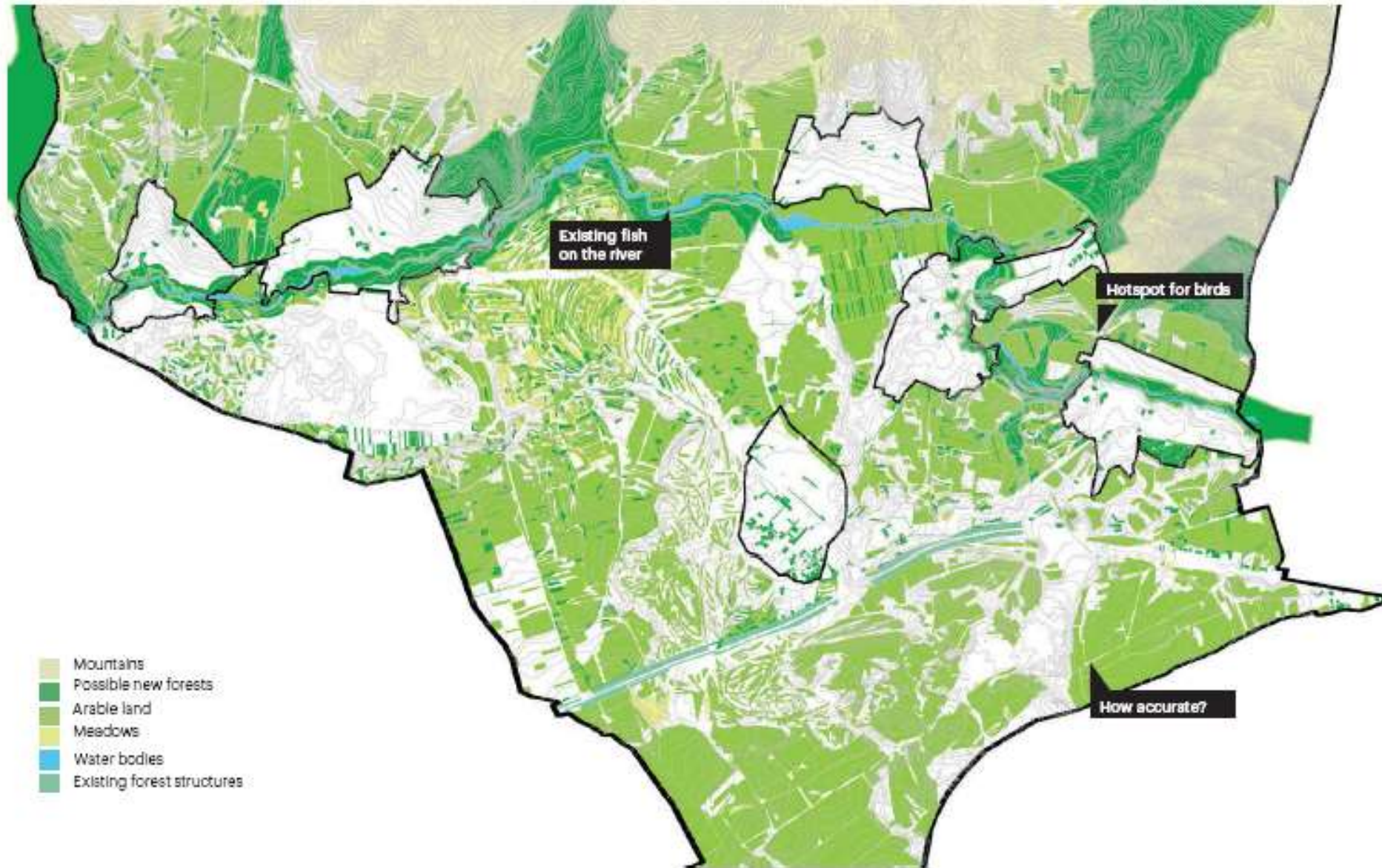


2, dual pedestrian paths

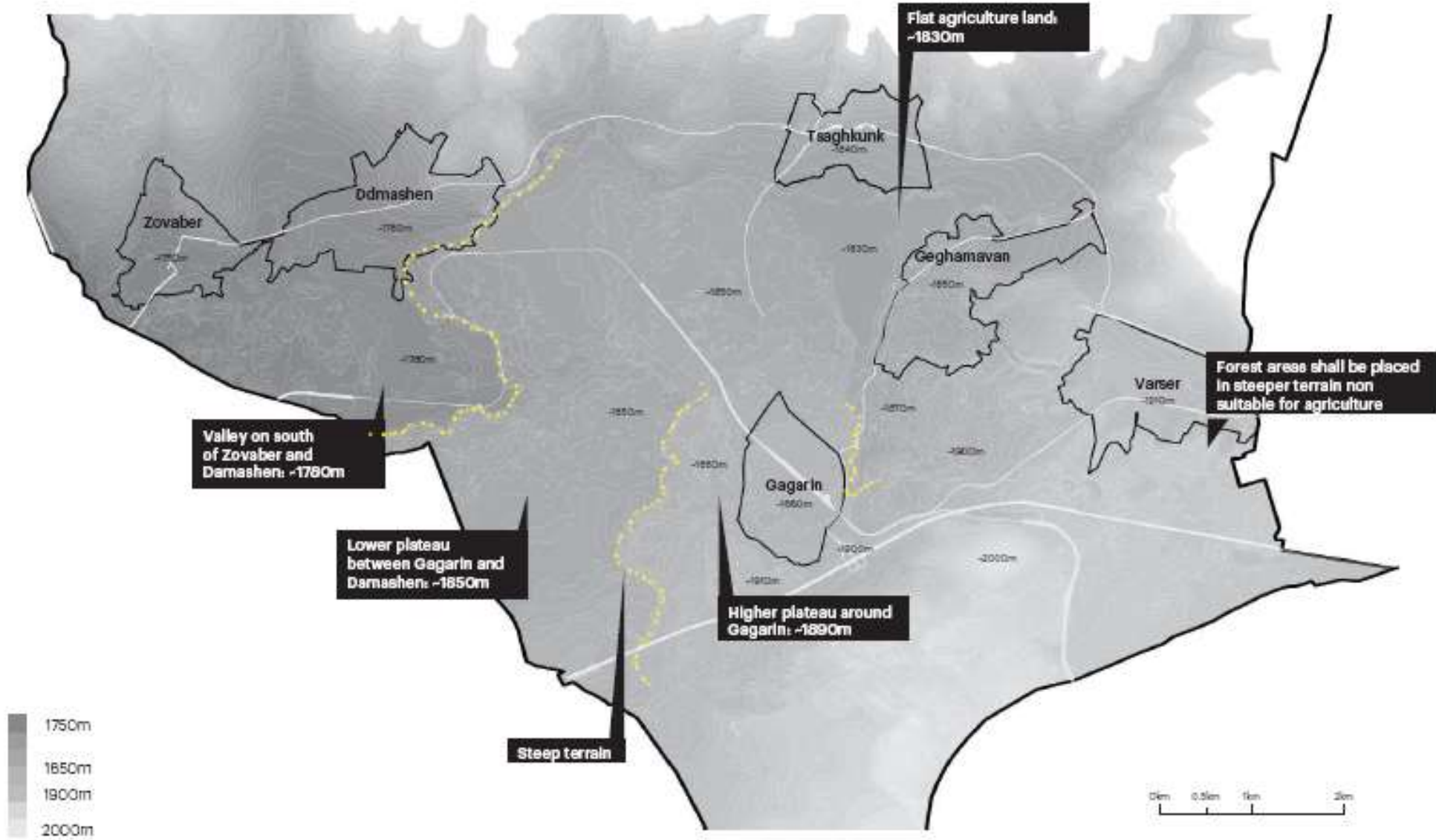




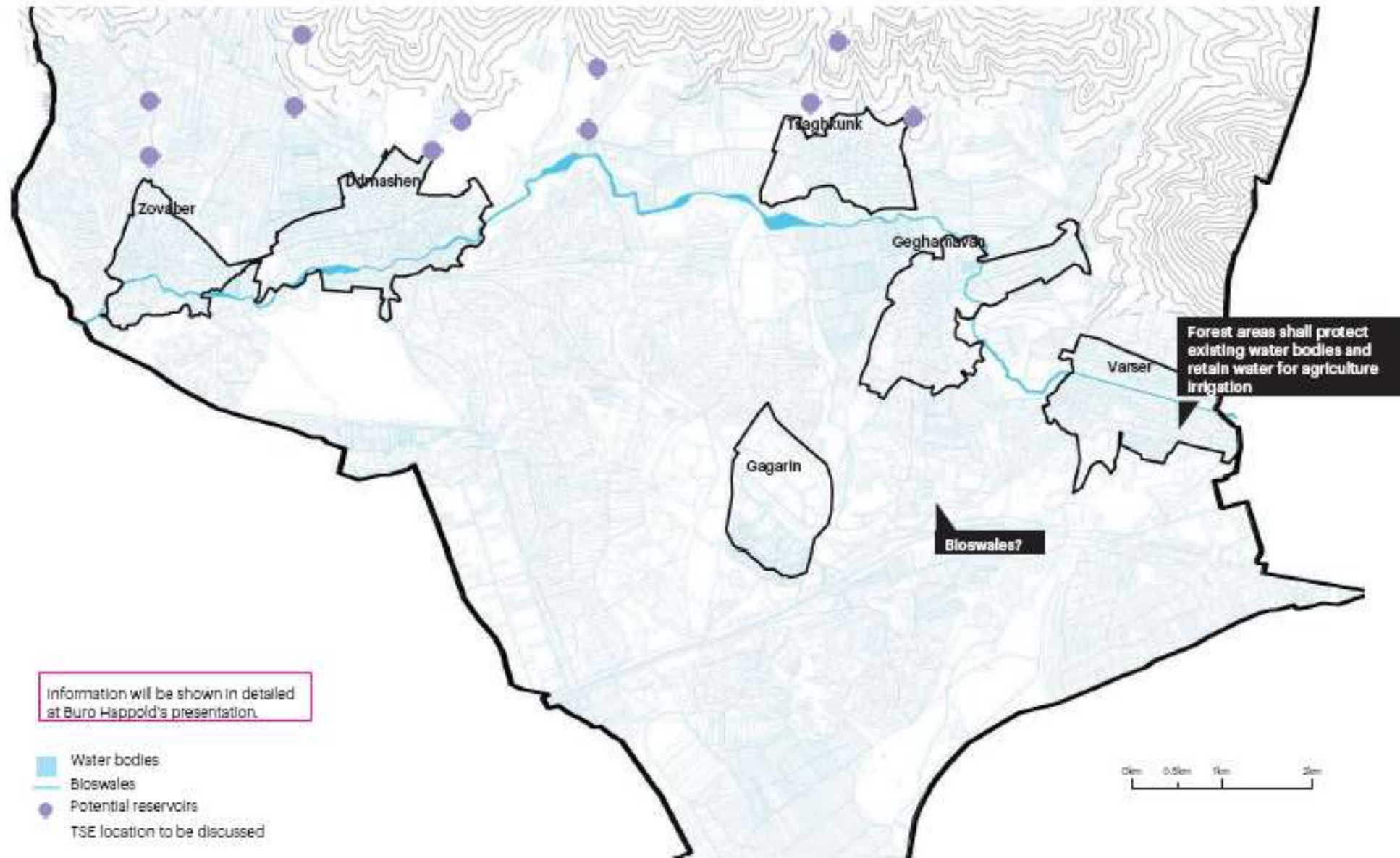
Biomorphological map



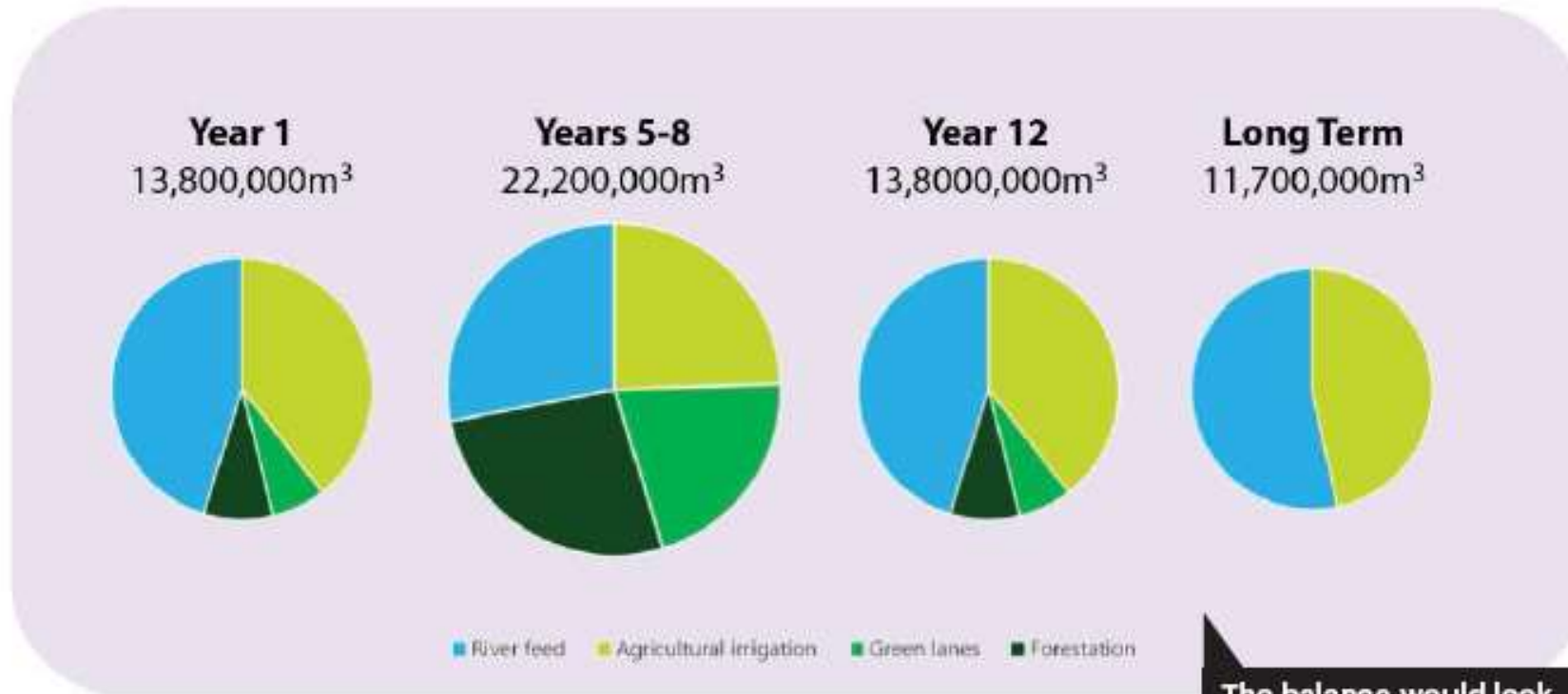
Topography



Water



Non Potable Water: Evolution of Annual Demand



*For 25% arable land drip irrigated scenario.

The balance would look different depending on prioritization of agriculture or forest growth for example

Overall water balance



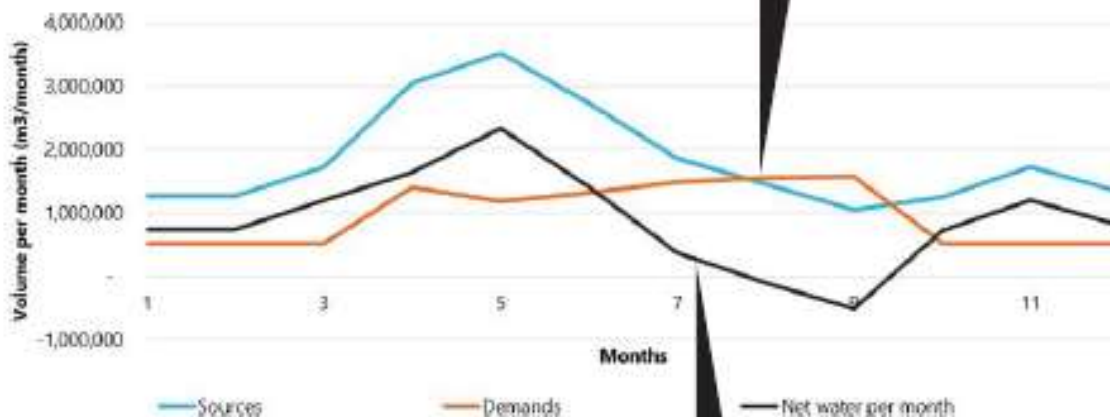
The long-term water balance varies seasonally and is a function of:

- Rainfall,
- Evaporation rates,
- Snow melt,
- Crop seasons and irrigation rates,
- Water remaining in the reservoirs from the previous month.

Where the monthly supply exceeds the demand, the storage in the reservoirs will be used to store water for the following month up to the maximum storage capacity of 641,000m³.



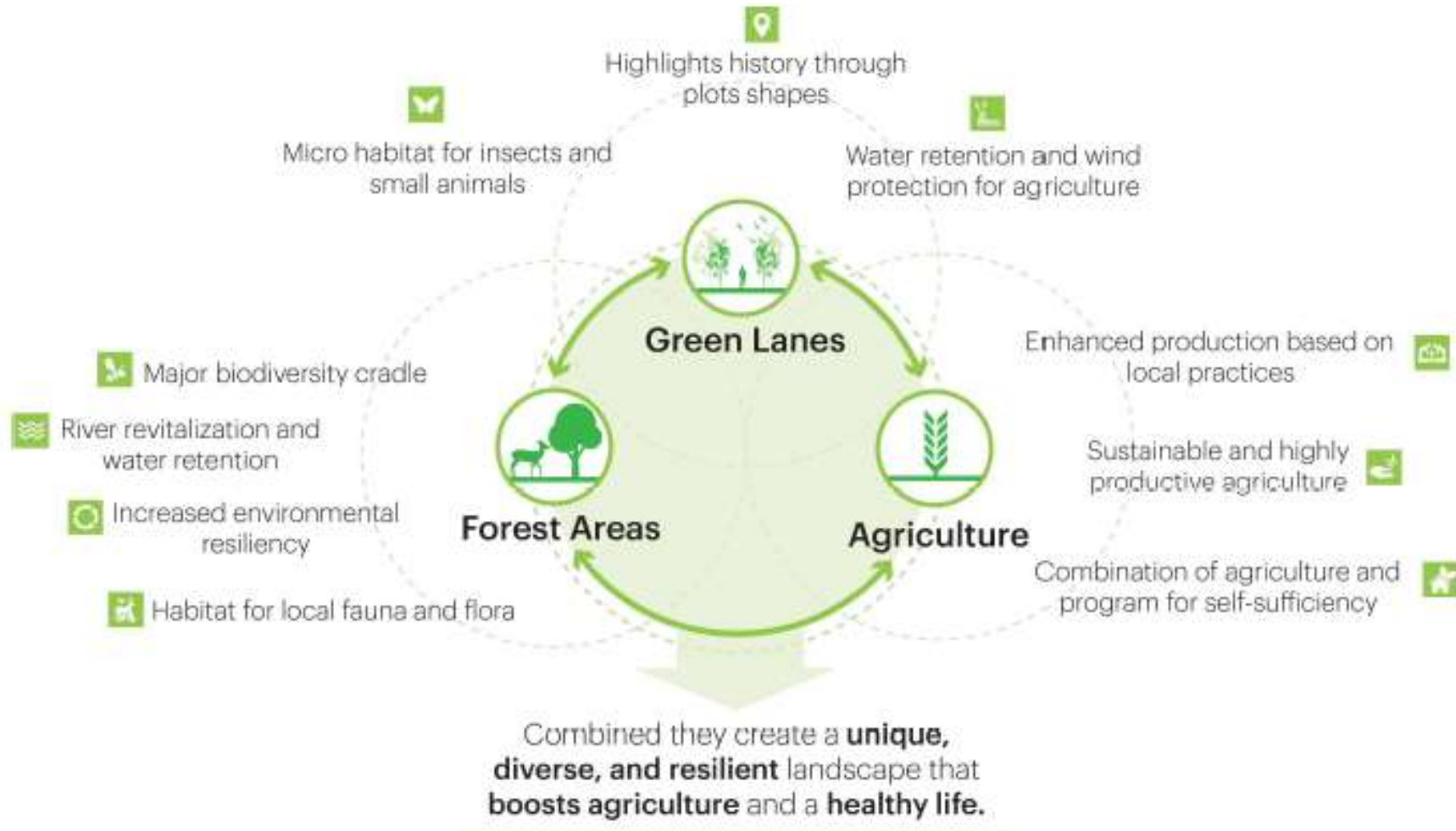
The graph below shows the monthly water balance for the 25% arable land irrigated case:



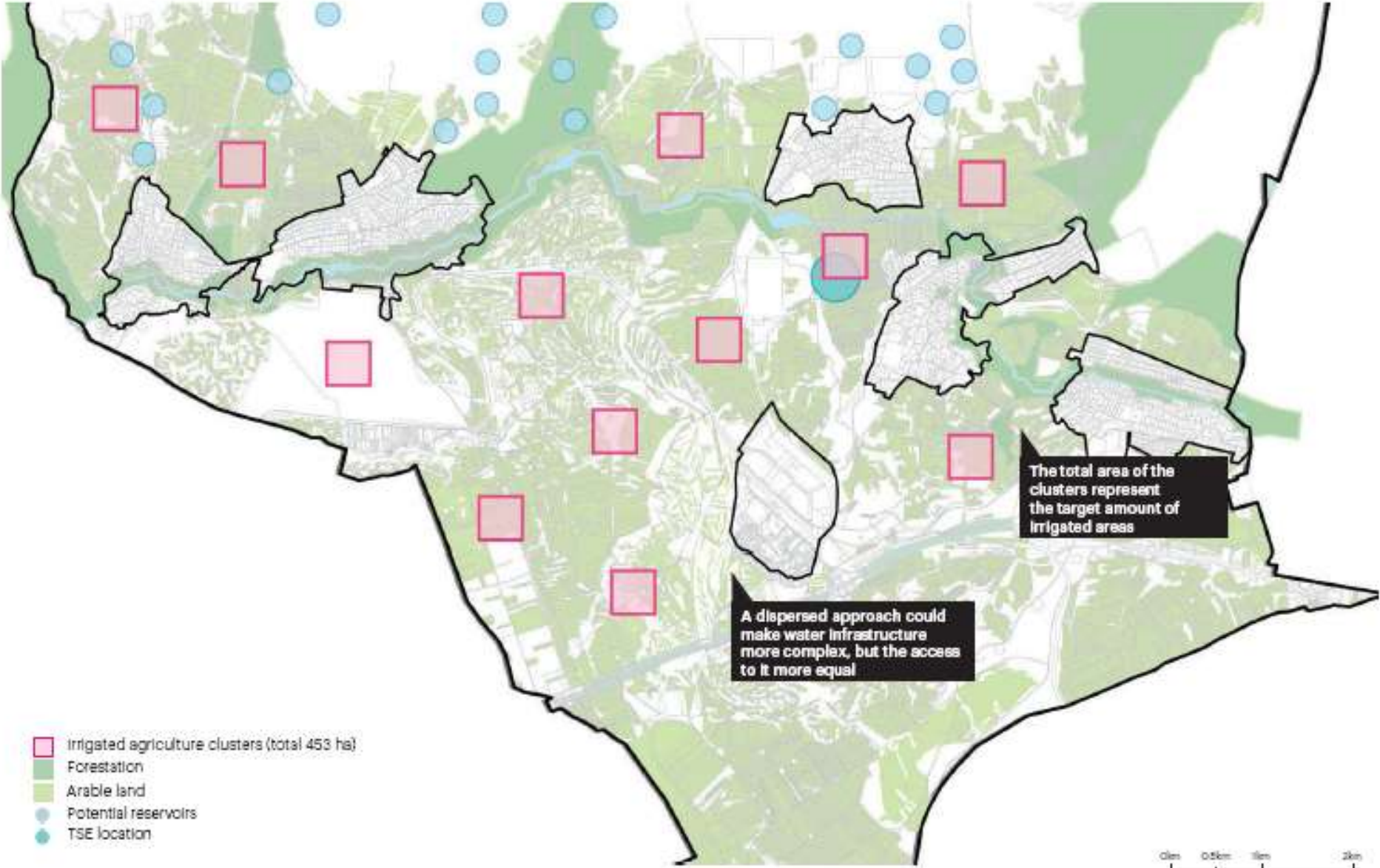
The demand is higher when the supply is the lowest

Possible solutions involve accurate crops selection and harvest periods

Landscape concept



Irrigated land







..the area becomes equipped for more and different species and products.



People mainly working with traditional agriculture



People looking for self-sufficient lifestyle



People looking for sustainable community



People valuing high quality living and healthy food



Employees of new production facilities and their families



Young agricultural researchers



Students, teachers and staff of educational institutions



Qualified professionals returning to Gagari after attending higher education elsewhere



Young families that can work remotely and value high education and a healthy lifestyle for their children

This landscape can attract many different farmers and producers.

Werken met water
Ontwerp als hefboom

What's next?