

A wide-angle landscape photograph showing a river winding through a lush green valley. In the background, a range of mountains with patches of snow is visible under a clear blue sky.

**For now &  
our future**

# Long-Term Plan Workshop

**24<sup>th</sup> August 2023**

# Workshop Outline

1. Leigh Griffith - Sharing Environment Canterbury's experience
2. Randal/Ella
  1. National Direction, Update and Feedback
  2. Cap Ex consultation projects
  3. Floodplain management
  4. Adaptation
3. Tanea/Stephen
  1. Rating and funding

# 1. National Direction

Urutau, ka taurikura: Kia tū pakari a Aotearoa i ngā huringa āhuarangi

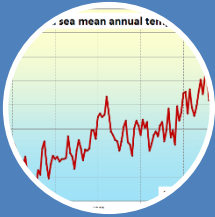
***Adapt and thrive: Building a climate-resilient New Zealand***

***- New Zealand's first national adaptation plan***

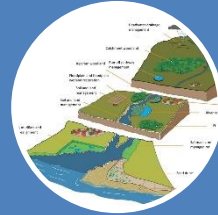
New Zealand's Long-Term Adaptation Goals

- Reduce vulnerability.
- Enhance our ability to adapt.
- Strengthen resilience.

# Community Resilience



Understanding and responding to a Changing Climate



Integrated Catchment Management



Providing for Climate Adaptation Funding

**Promotion of Environmental, Economic, Social, and Cultural Wellbeing**

# Previous workshop

A changing climate and Southland's need to adapt

A decreasing level of flood protection

Need for more info to understand impacts and options

Condition of assets and defects, along with data gaps

CAPex programme

# Feedback

- Consider review of the old by-laws.
- LOS – transition to using the capacity of the flood protection scheme rather than the size of the event, i.e. 1/20
- More insight into what the science is and what it means.

# LOS

	Traditional	Annual Event Probability	Flood Capacity Cumecs
Gore	1:100	1% AEP	2,400 cumecs

## 2. CAPex Consultation Projects

We currently invest 0.08% of Southlands GDP into flood control and protection.

Proposing consultation options for our rural urban banks

1. Winton
2. Lumsden
3. Waihopai – detention dam



# Winton TLB 3km



## Winton Stopbank Upgrade Proposal

### Legend

- Stopbank Segments selection

Scale: 1:20,000  
Map created: 12/05/2023

While every effort has been made to ensure the content is correct, Environment Southland cannot guarantee the accuracy of the data. This information should not be used in any manner without consultation.

DATA SOURCE: ES GIS 2023

# Winton

- 1:50 yr with 3m crest 2.5:1 batter
- 1:100 yr with 3m crest 2.5:1 batter

# Lumsden TLB 3km



## Lumsden Stopbank Upgrade Proposal

### Legend

- Stopbank Segments selection

Scale: 1:25,000  
Map created: 12/05/2025

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DATA SOURCE: ES GIS 2025

# Lumsden

- 1:50 yr with 3m crest 2.5:1 batter
- 1:100 yr with 3m crest 2.5:1 batter

# Waihopai

- Secondary detention area
- There is currently no mechanism to have water from the spillway enter back into the Waihopai channel

# Additional capacity

- 1,000 litres per sqm of storage
- = 608,000,000 litres of storage per metre of height
- With the spillway operating at 10 cumecs p/s over 24 hour period = 864,000,000 litres

# 3. Floodplain Management Plan

- Complex landscape of policy change, regulatory change and climate change.
- Science takes time, we need to show the intention and set direction of travel.
- The climate is changing and the water is speeding up.
- We need to transition from how we do things now, to a long-term integrated approach.
- We do not currently fund climate resilience. There is only going to be limited funding, need to be strategic.
- The community has not heard a lot about climate adaptation in Southland, the risks, challenges and opportunities.

## REGIONAL APPROACH

Southland Strategic Direction

**Murihiku Southland  
Climate Change Strategy**  
Regional CC Inter-agency  
Working Group

## ENVIRONMENT SOUTHLAND

**ES Strategic Direction and Mission**

**Long Term Plan**

**ES Strategies and Policies**

- Wellbeing Framework
- ES CC Mitigation Policy
- **Floodplain Management Plan**

**Southland Plans**

- pSLWP & PCT – rules and regulations
- Regional Pest Plan
- Coastal Plan

**Operational Plans**

- Gravel Management
- Drainage Operations Manual

FMU Action Plans

## LOCAL

**Murihiku Slow the Flow**

**Community Catchment Plans**



# More water is expected

*Southland climate change impact assessment.* Prepared for Environment Southland, Invercargill City Council, Southland District Council and Gore District Council. August 2018

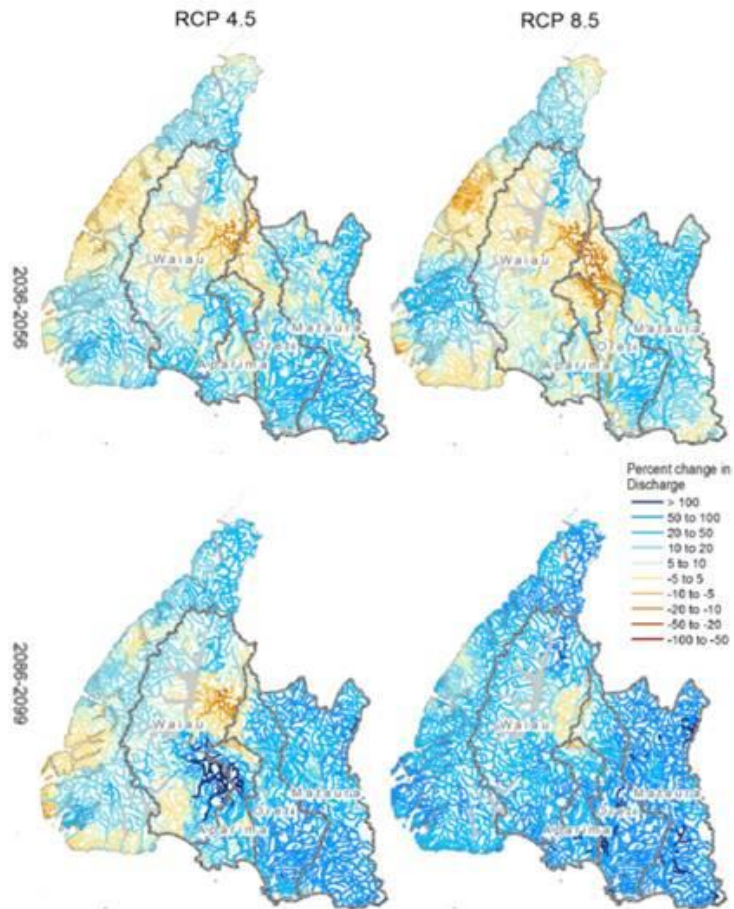
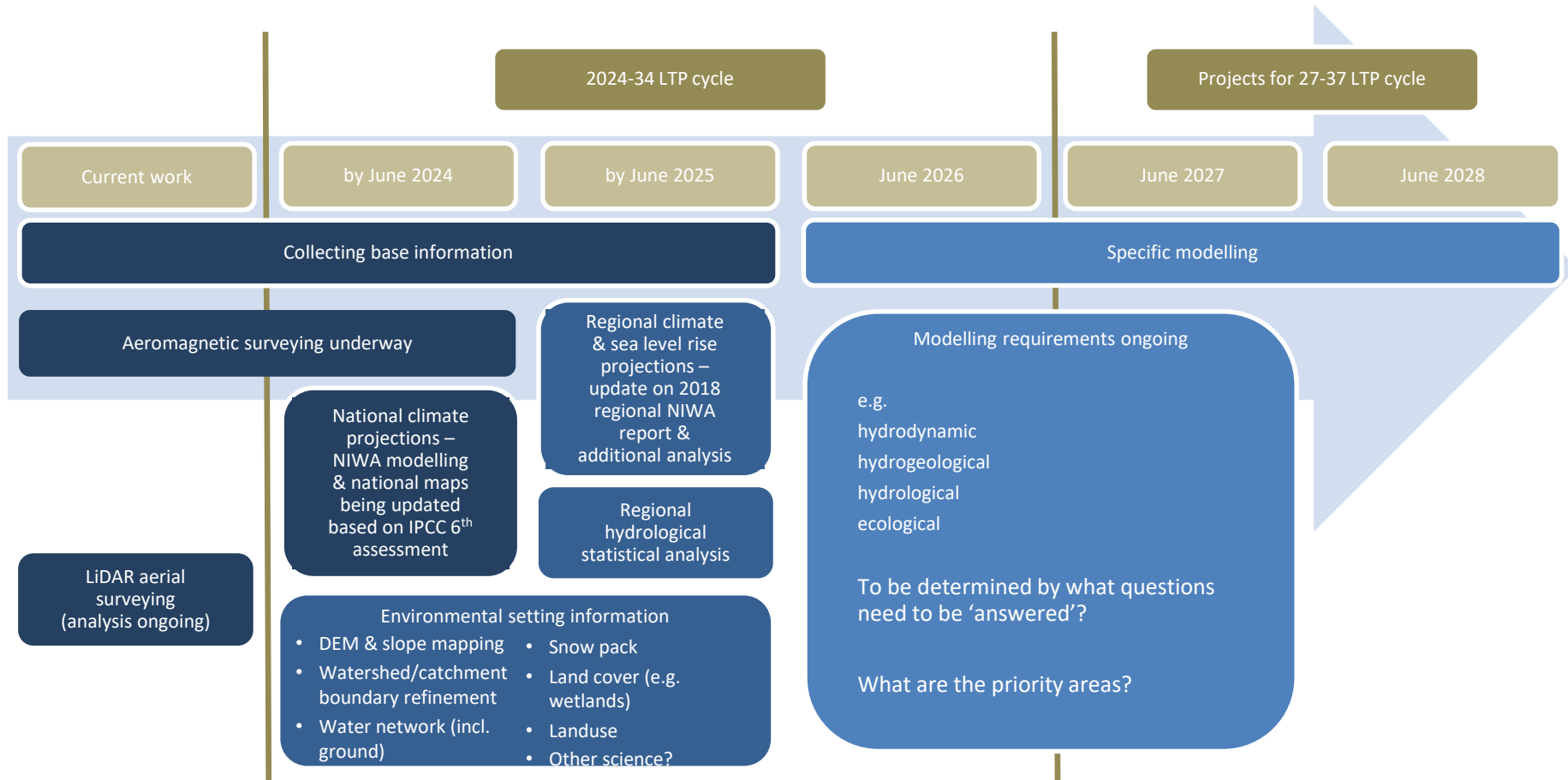


Figure 8-7: Percent changes in multi-model median of MAF across Southland for mid (top) and end of century (bottom).



## ES adaptation information – draft project pathway

# Floodplain Management Plan

- Facilitates the discussion about the need for a proactive response with the community.
- Creates a plan to ensure the right science, modelling and planning is being carried out.
- Identify the risks in each catchment.
- Integrated Catchment Management - right mitigations, right place.
- Ensure we have a plan for how we are meeting all responsibilities under the four wellbeings.

# Floodplain Management

**“This FMP aims to keep people and property ... safe. Its implementation involves proactively managing the river channels and using land use and protection measures to support the continued and appropriate use of rural and urban land and resources in potential flood- and erosion-prone areas.”**

- Te Kāuru Upper Ruamāhanga Floodplain Management Plan, Greater Wellington Regional Council December 2019

# Murihiku

## Floodplain Management Plan

Completed 2025

A 100-year vision

A plan to transition

Science/data required

Operational plans

Conversation with the community

# Murihiku Slow the Flow Project

2-year funded co-designed pilot.

A collective approach to understanding how nature-based climate adaptation solutions can reduce the impact on high flood-risk areas of Murihiku Southland.

Pilot the Climate Change Action Framework in a specific location.

Model 1-2 nature-based solutions.

## INTEGRATED FLOOD RISK MANAGEMENT METHODS

### STRUCTURAL

### NON-STRUCTURAL

#### HARD

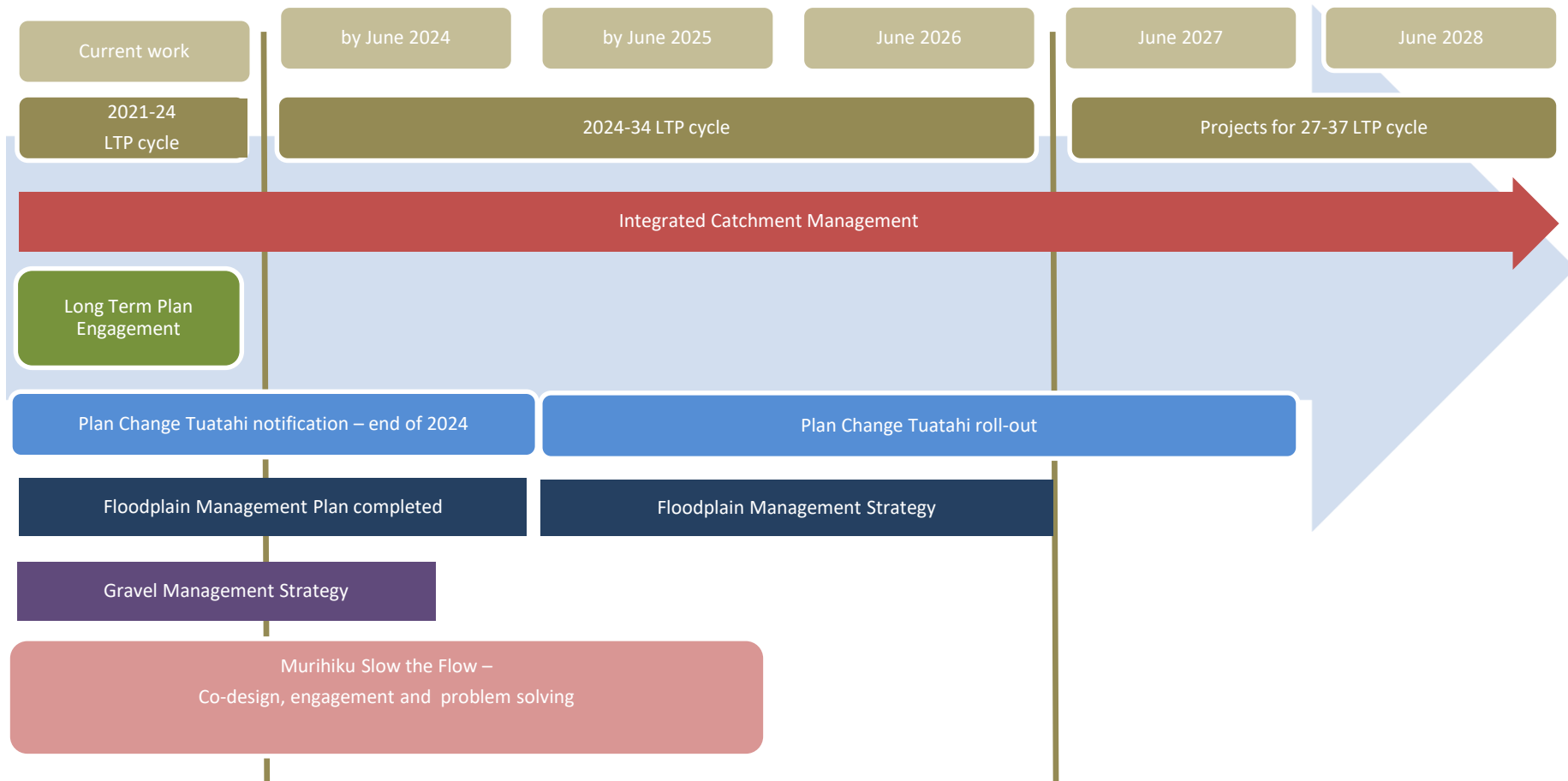
- AX1 Dams and reservoirs
- AX2 Diversions
- AX3 Constructed wetlands
- AX4 Levees
- AX5 Canal widening and deepening
- AX6 Floodways
- AX7 Pumping
- AX8 Engineered drainage systems
- AX9 Groynes and revetments
- AX10 Multipurpose infrastructure
- AX11 Warning/evacuation infrastructure

#### SOFT

- AY1 Upper watershed restoration
- AY2 Soil conservation measures
- AY3 Wetlands restoration
- AY4 Swales and infiltration devices
- AY5 Rainwater harvesting
- AY6 Detention basins and retention ponds
- AY7 Natural drainage path restoration
- AY8 Riparian vegetation restoration
- AY9 Removal of barriers
- AY10 Green roofs/walls and blue roofs
- AY11 Coastal and reef restoration

- B1 Soil and watershed protection legislation
- B2 Land use planning (regional/community)
- B3 Flood- and waterproofing (building regulations)
- B4 Regular maintenance of headworks
- B5 Flood monitoring and warning framework
- B6 Crop change and alternative land use
- B7 Community flood awareness and preparedness

Natural and  
Nature-Based  
Flood  
Management:  
Green Guide  
(2017, WWF)

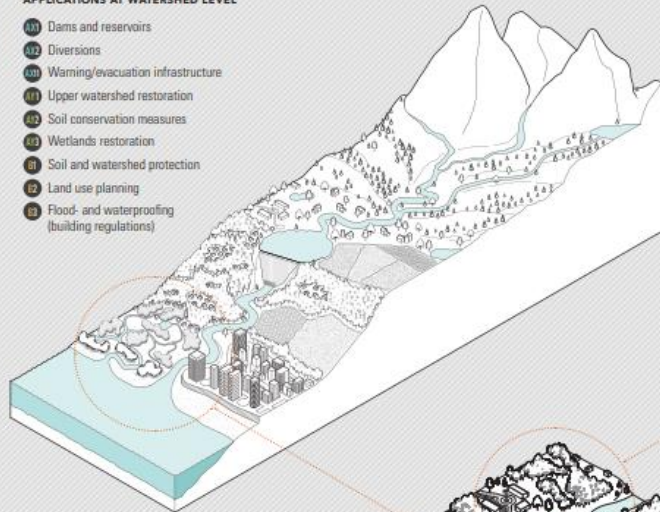


## Overlapping Timelines



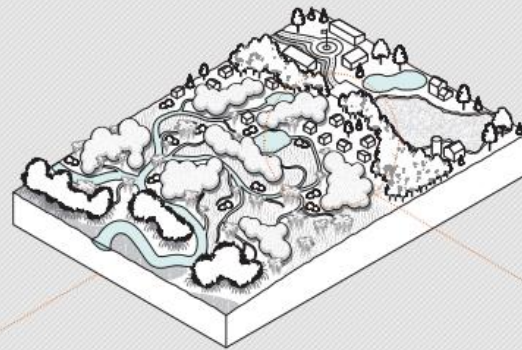
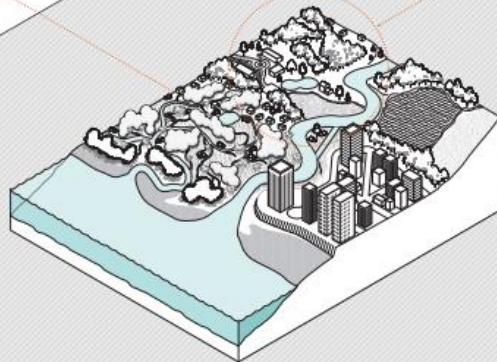
#### APPLICATIONS AT WATERSHED LEVEL

- A11 Dams and reservoirs
- A12 Diversions
- A13 Warning/evacuation infrastructure
- A14 Upper watershed restoration
- A15 Soil conservation measures
- A16 Wetlands restoration
- A17 Soil and watershed protection
- A18 Land use planning
- A19 Flood- and waterproofing (building regulations)



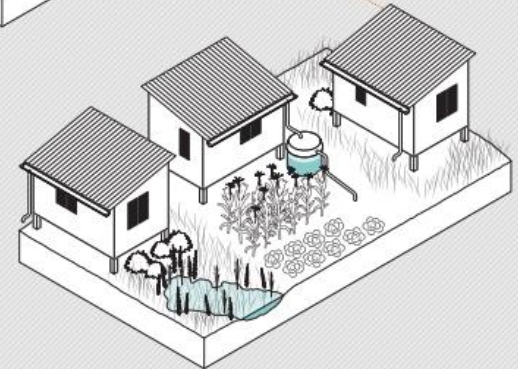
#### APPLICATIONS AT FLOODPLAIN LEVEL

- A13 Constructed wetlands
- A14 Levees
- A15 Canal widening and deepening
- A16 Floodways
- A17 Pumping
- A18 Engineered drainage systems
- A19 Groynes and revetments
- A20 Multipurpose infrastructure
- A21 Detention basins and retention ponds
- A22 Natural drainage path restoration
- A23 Riparian vegetation restoration
- A24 Removal of barriers
- A25 Land use planning
- A26 Regular maintenance of headworks
- A27 Flood monitoring and warning framework
- A28 Community flood awareness and preparedness



#### APPLICATIONS AT COMMUNITY LEVEL

- A17 Pumping
- A18 Multipurpose infrastructure
- A19 Swales and infiltration devices
- A19 Rainwater harvesting
- A18 Detention basins and retention ponds
- A17 Natural drainage path restoration
- A18 Riparian vegetation restoration
- A25 Land use planning
- A19 Flood- and waterproofing (building regulations)
- A26 Crop change and alternative land use
- A28 Community flood awareness and preparedness



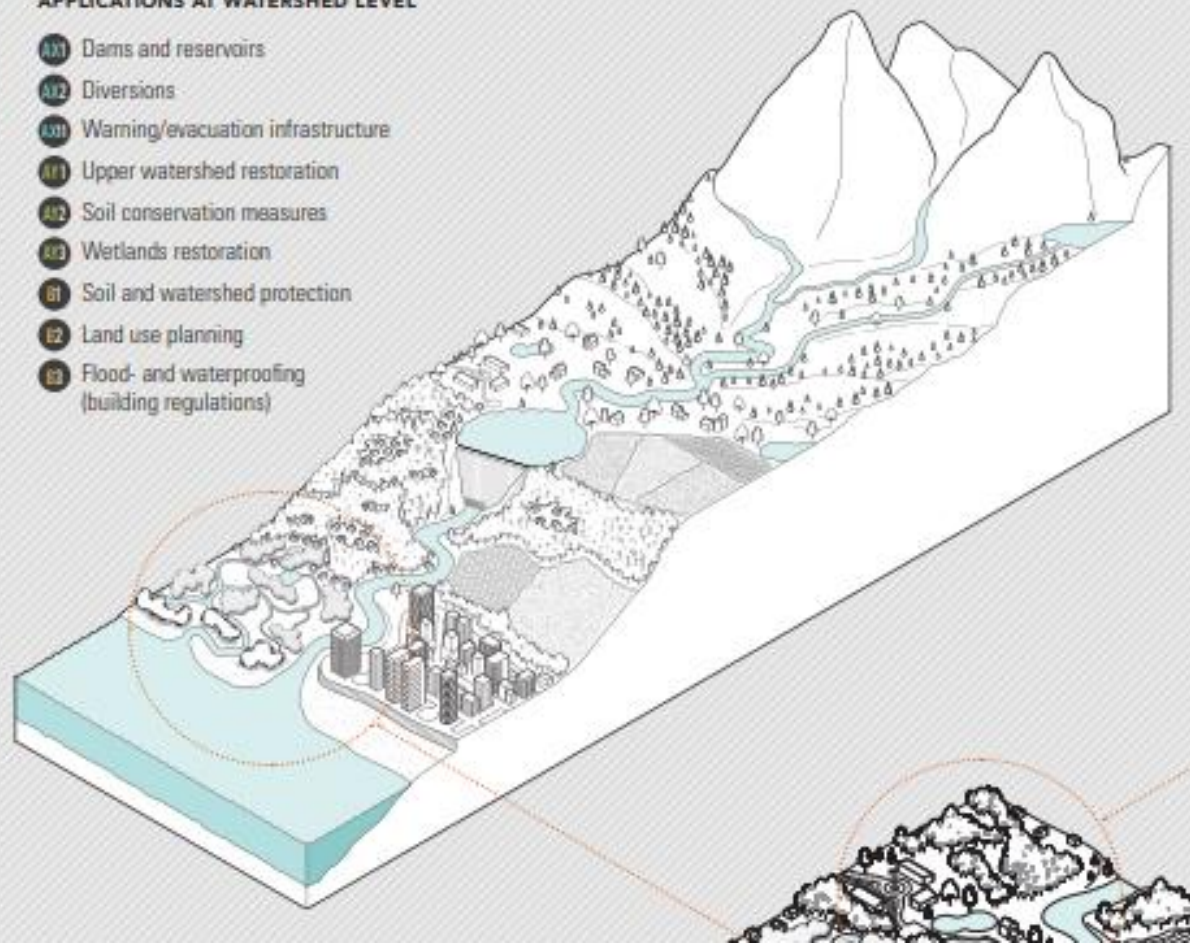
#### APPLICATIONS AT HOUSEHOLD LEVEL

- A19 Swales and infiltration devices
- A19 Rainwater harvesting
- A19 Flood- and waterproofing (building regulations)
- A28 Community flood awareness and preparedness

FIGURE 5.2 SCALE OF APPLICATION OF STRUCTURAL AND NON-STRUCTURAL METHODS

#### APPLICATIONS AT WATERSHED LEVEL

- A31** Dams and reservoirs
- A32** Diversions
- A33** Warning/evacuation infrastructure
- B11** Upper watershed restoration
- B12** Soil conservation measures
- B13** Wetlands restoration
- B1** Soil and watershed protection
- B2** Land use planning
- B3** Flood- and waterproofing  
(building regulations)



# Workshop Questions

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[www.es.govt.nz](http://www.es.govt.nz)