

# COASTAL CONVERSATIONS

A wide-angle photograph of a coastal scene. On the left, a dense line of tall, dark green pine trees stands on a gravelly path. The path leads towards the ocean, which is filled with white-capped waves. The sky is a vibrant blue with scattered, light-colored clouds. In the distance, low hills or mountains are visible on the horizon. The overall atmosphere is bright and clear.

Amberley Beach  
6 March 2023

# Bund Consent Update





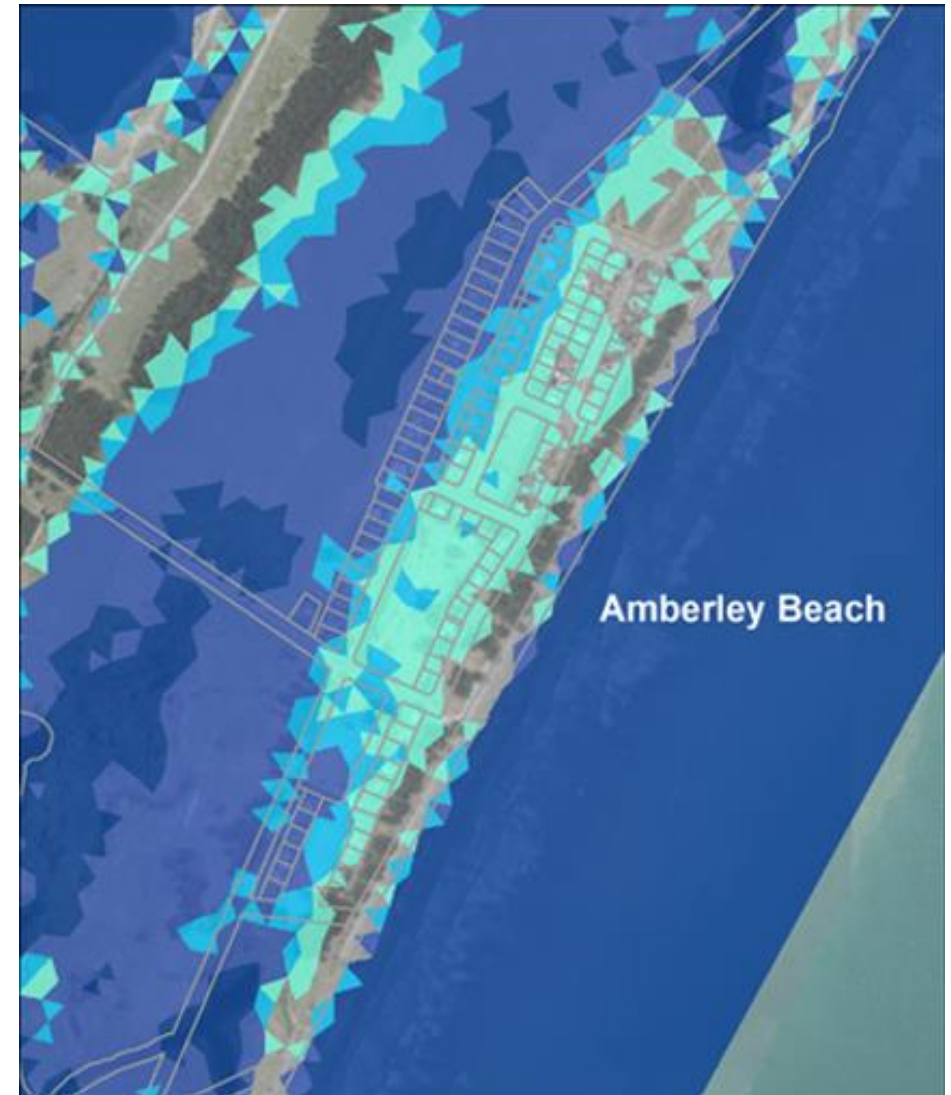
# Agenda for tonight

- 1 – Coastal Adaptation Plan
- 2 – Triggers for change
- 3 – Required monitoring
- 4 – Required actions



# Coastal Adaptation Plan

1. Introduction
2. What is happening?
3. What matters most?
4. What can we do about it?
5. Implementation
6. Actions
7. References



# What can we do about it? - Agreed Pathways?

Managed retreat

Coastal bund / Progressive relocation of coastal bund

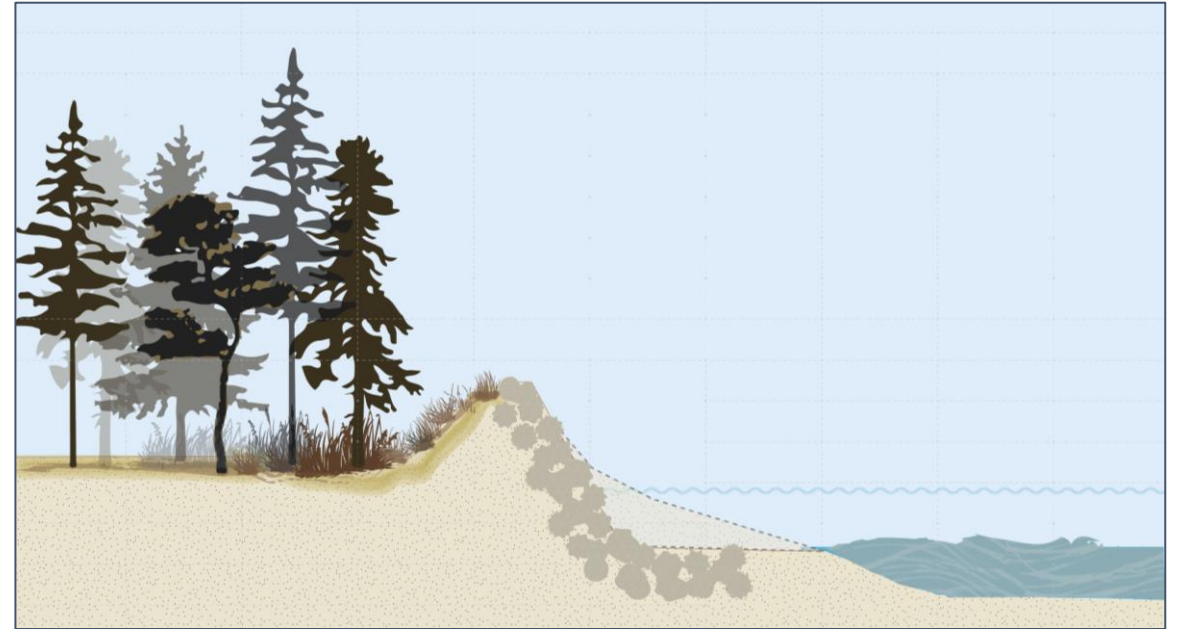
Hard protection, eg. rock revetment

Inundation bund / pump



## Hard Protection – benefits

- Reduces the risk which may enable people to remain at the settlement for longer
- Irregular front face dissipates wave energy reducing wave run-up
- Can be designed to provide walking access along the top
- Durable with limited maintenance
- Adaptable



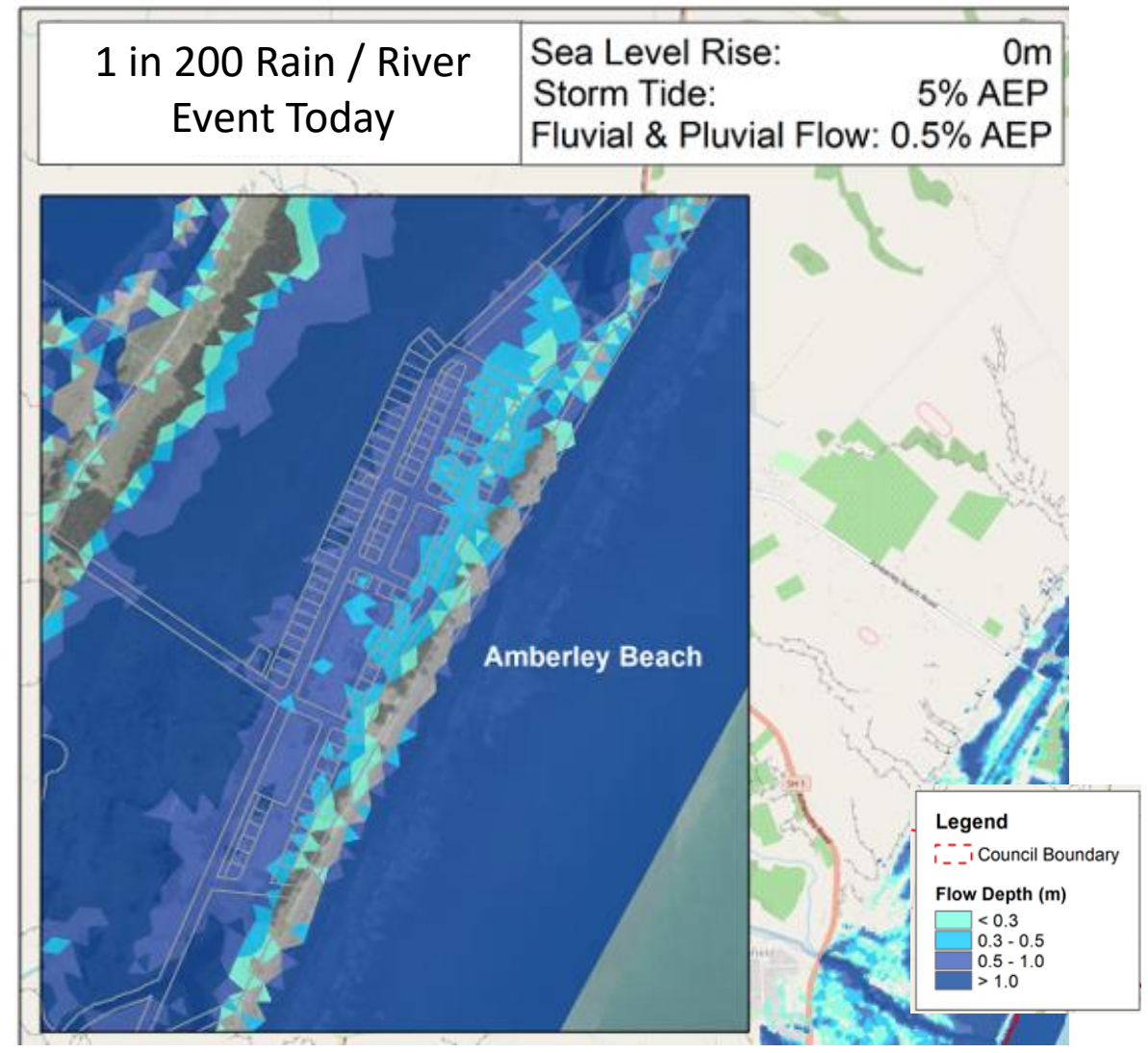
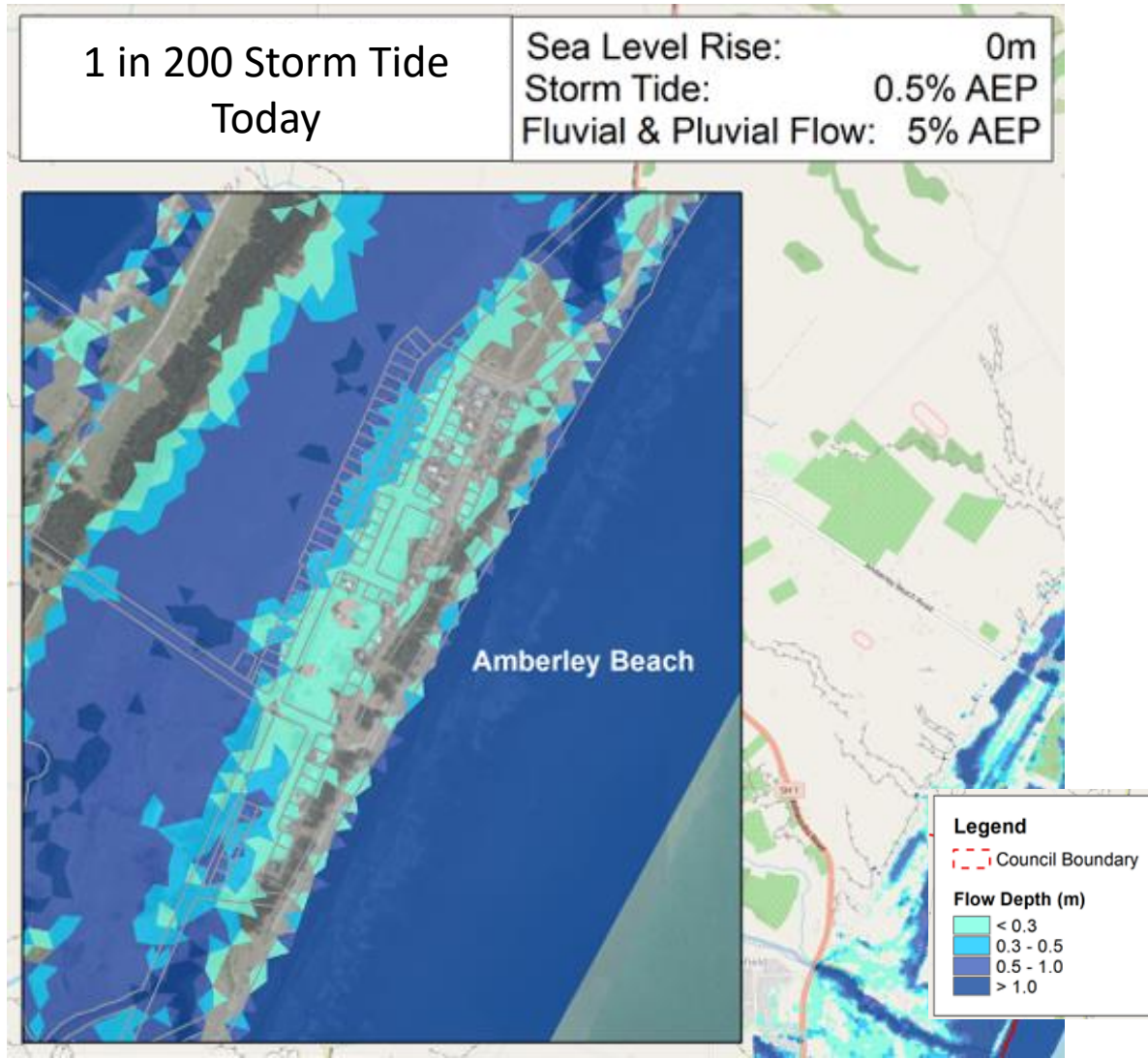


## Hard Protection – limitations

- Reduces but does not remove the risk
- Does not address the fluvial or pluvial flood risk
- May need to adapt again in future
- Requires good tie in to help limit end effects erosion
- Could suffer long-term permanent beach loss
- Challenging consent pathway
- Access is more challenging
- Does not look natural
- Cost

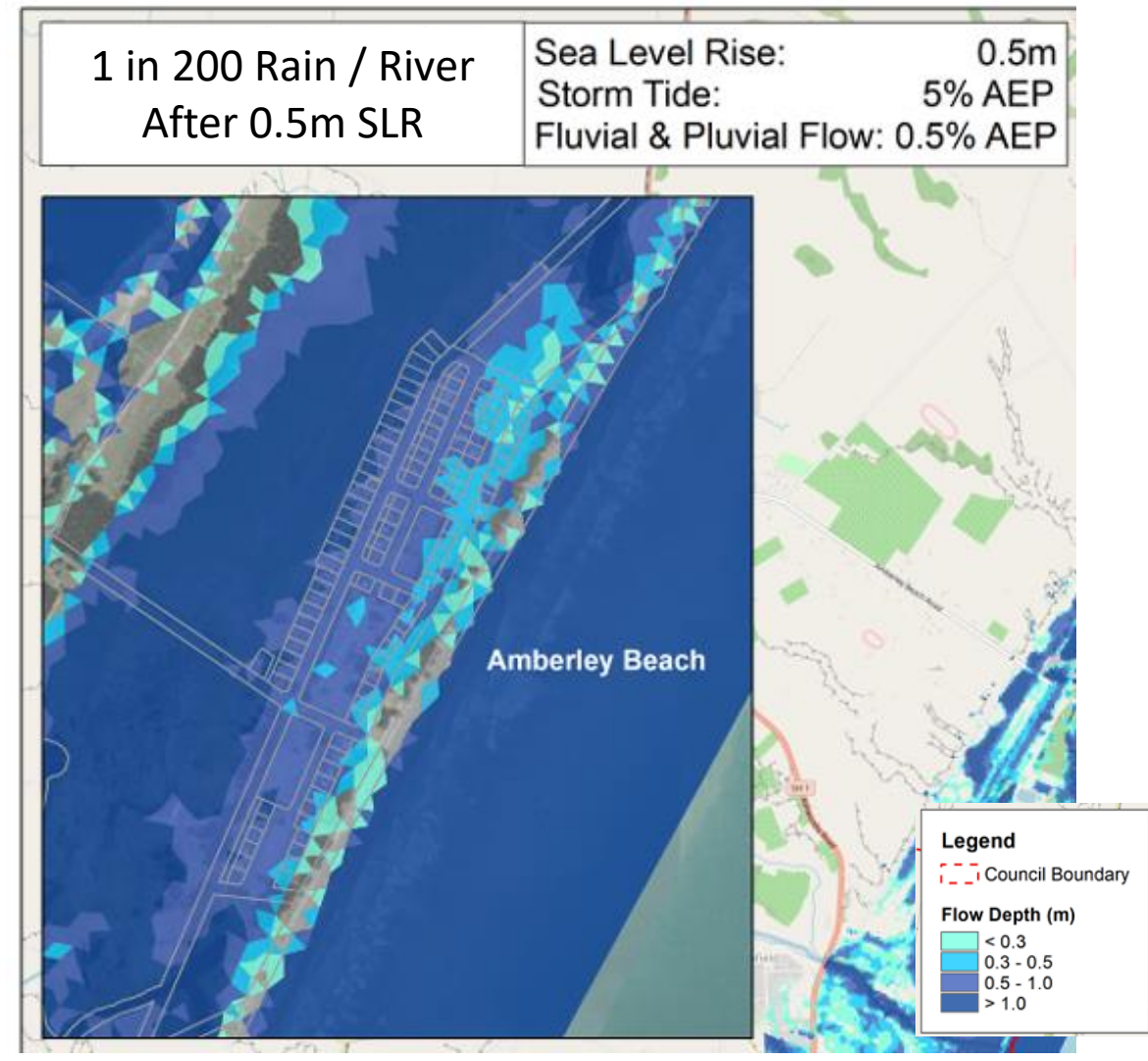
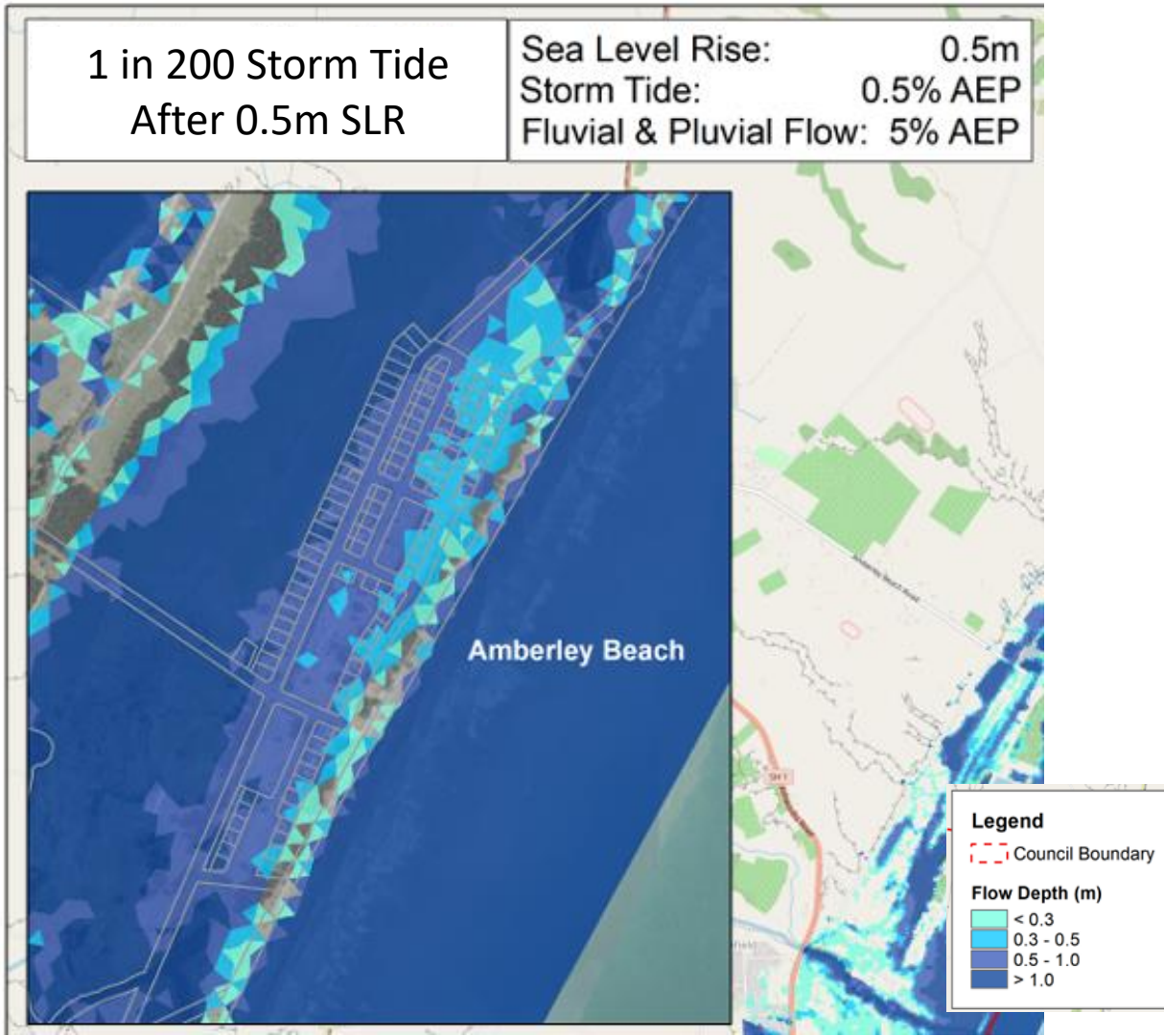


# The need to address fluvial and pluvial inundation





# The changing risk



## Inundation Bund – benefits

- Reduces the risk
- Durable with limited maintenance
- Can be grassed with gentle slope to look more natural
- Can be adapted in future to provide for longer term protection
- Can be designed to provide walking access along the top



## Inundation Bund – limitations

- May cause some backing up of the lagoon water levels
- Overland flooding to west of the settlement boundary
- If overtopped water can be trapped with no pathway back to the sea / river
- The structure works as a “dam” and therefore will likely need to meet dam requirements
- Potential for seepage and compaction of the bund





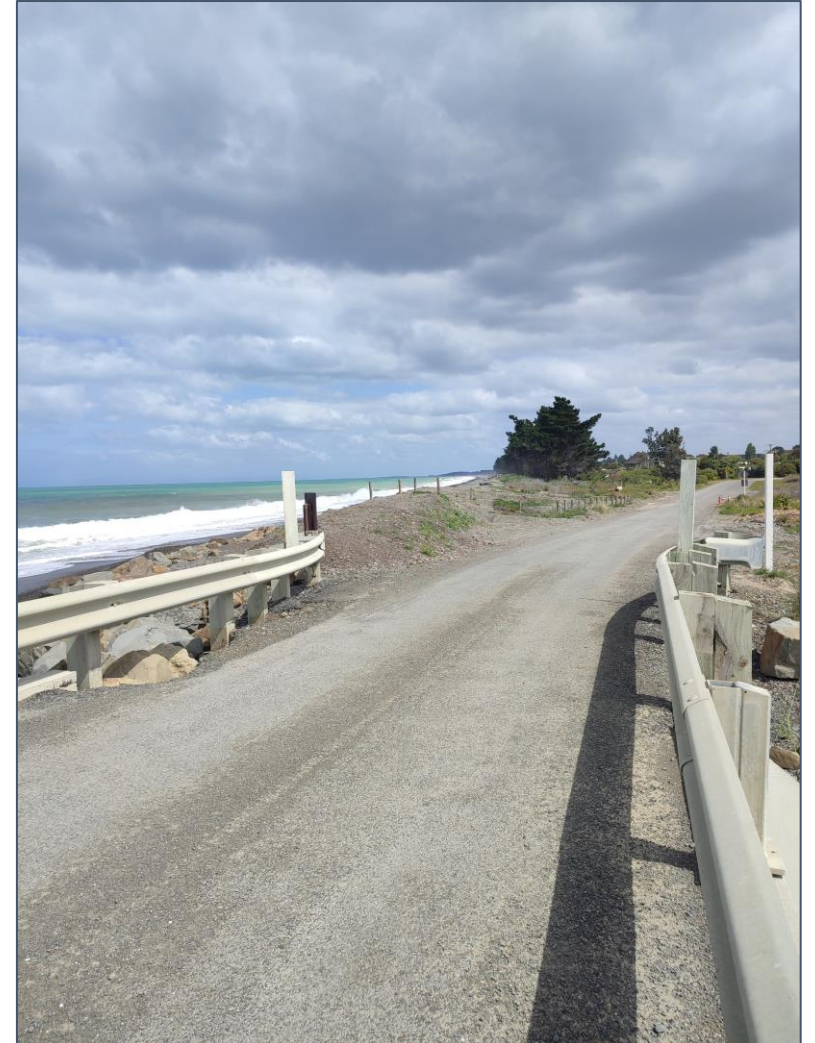
## Retreat

- Removes the risk
- One-off cost / action
- If undertaken proactively owners can be in control of their future
- Opportunities to offset costs
- Old land could be used as a coastal reserve space



## Retreat – limitations

- Proximity to the sea is important for property owners
- Logistics of undertaking retreat are challenging and still under development
- If some retreat and some remain the cost of protection works could become prohibitive for those that remain.
- Cost

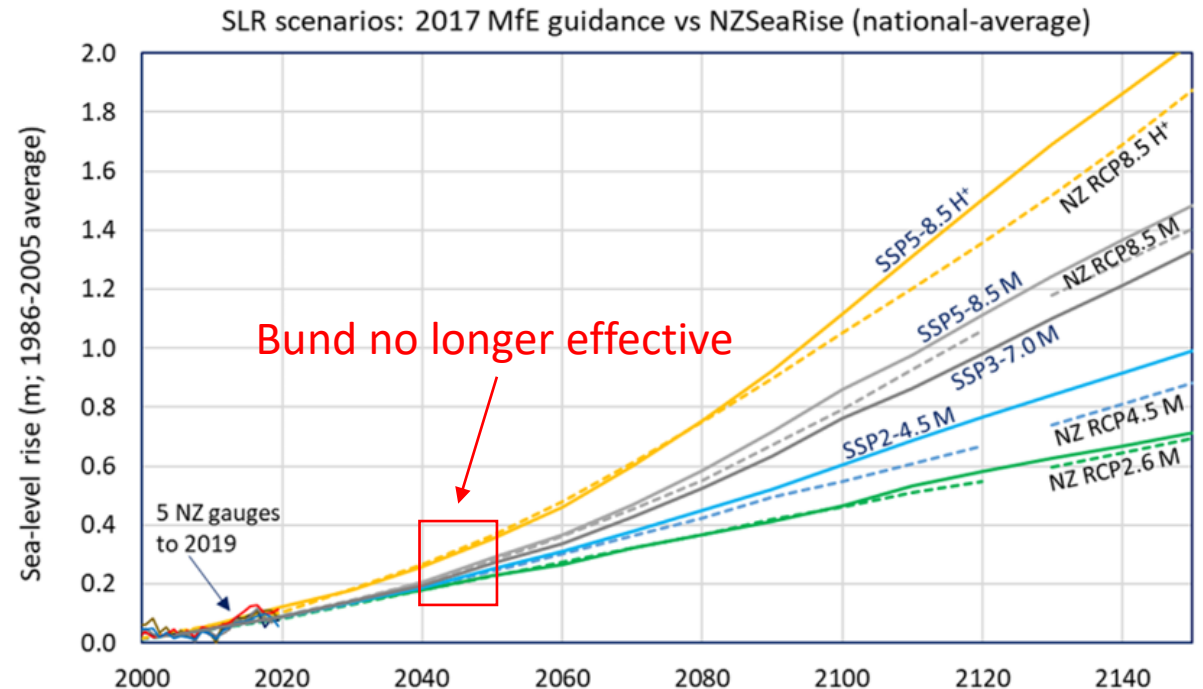


**Implementation – when do we do things differently?**

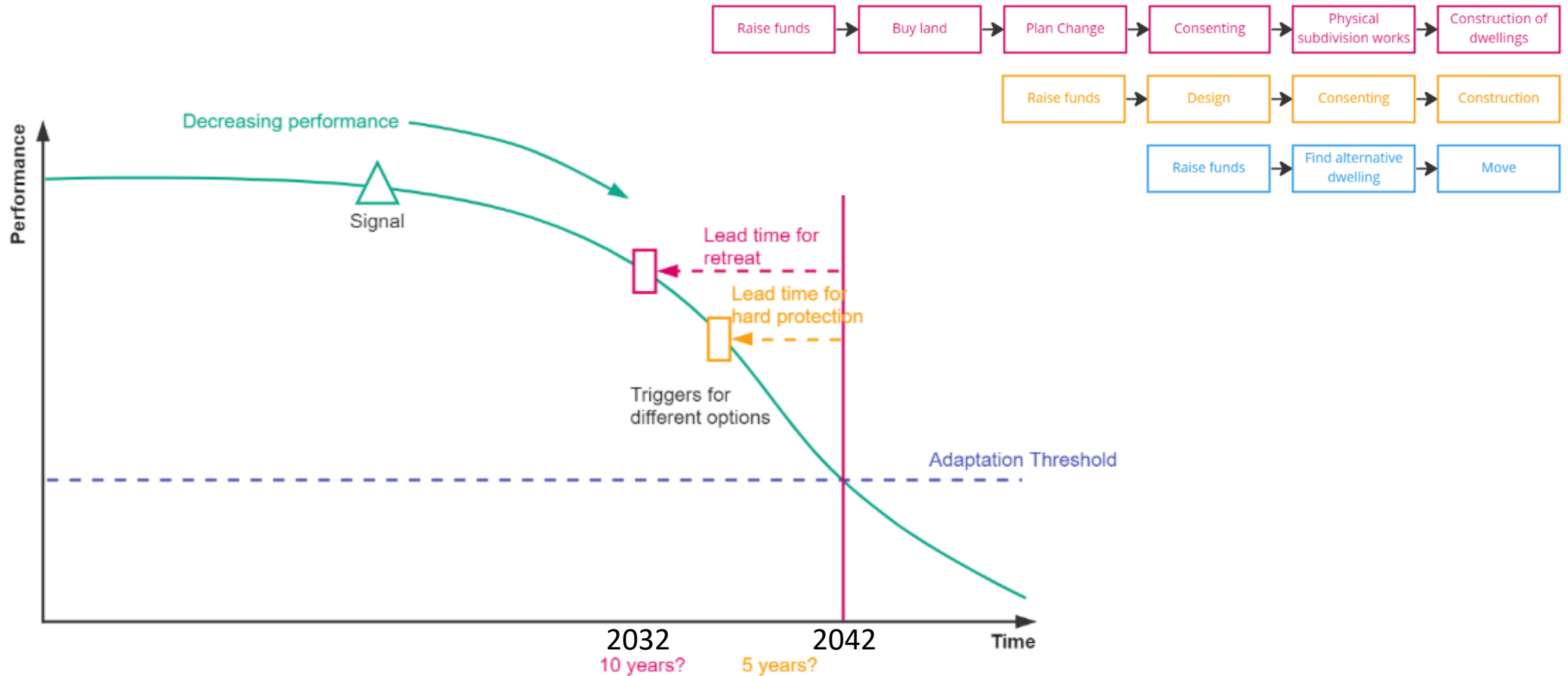


# Adaptive Planning

- The future is uncertain
- Don't want to lock in options – but want to know they exist and can be implemented
- Trigger based not time based
- Allows us to monitor change and act before things deteriorate
- Funding



# Implementation – when do we do things differently?



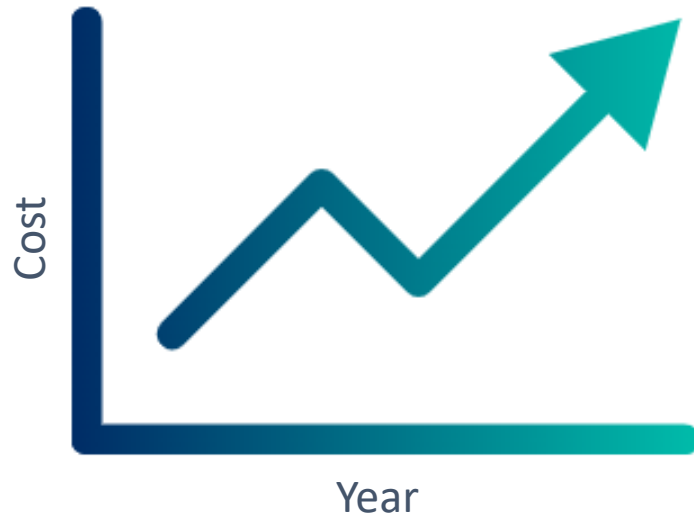
# Triggers for change

- Need something measurable
- Needs to accommodate seasonal variations and year to year variations
- Can monitor trend
- Some might be visible but some could be more subtle

1



2



3





# Triggers for change

1. Distance of the rear toe of the bund to property boundaries?  
5m to nearest properties or road?
2. Number of days water reaches a certain marker? Or duration a marker is underwater.
3. Cost of the bund renourishment rate increases from \$238.60 to \$500 per year?
4. First dwelling loses insurance?
5. No rebuilding after a major event?
6. Groundwater intrusion into the sewer system?



## Triggers for change

7. Contractor is required to camp out for more than x nights per year?
8. New capital works are required?
9. Sea level rise reaches 0.2m based on 1995-2014 midpoint.
10. Groundwater levels?
11. Annual volume loss of the bund exceeds 3,500m<sup>3</sup>?
12. Erosion rate of the bund exceeds 0.9m per year?
13. X number of properties write to HDC requesting change?



## Signals

Warning of change

- Groundwater levels
- Ponding levels
- Shoreline position
- Bund erosion
- Cost of renourishment
- Insurance retreat

## Triggers

Decision points

Five or six agreed trigger points

## Thresholds

Unacceptable conditions based on community values

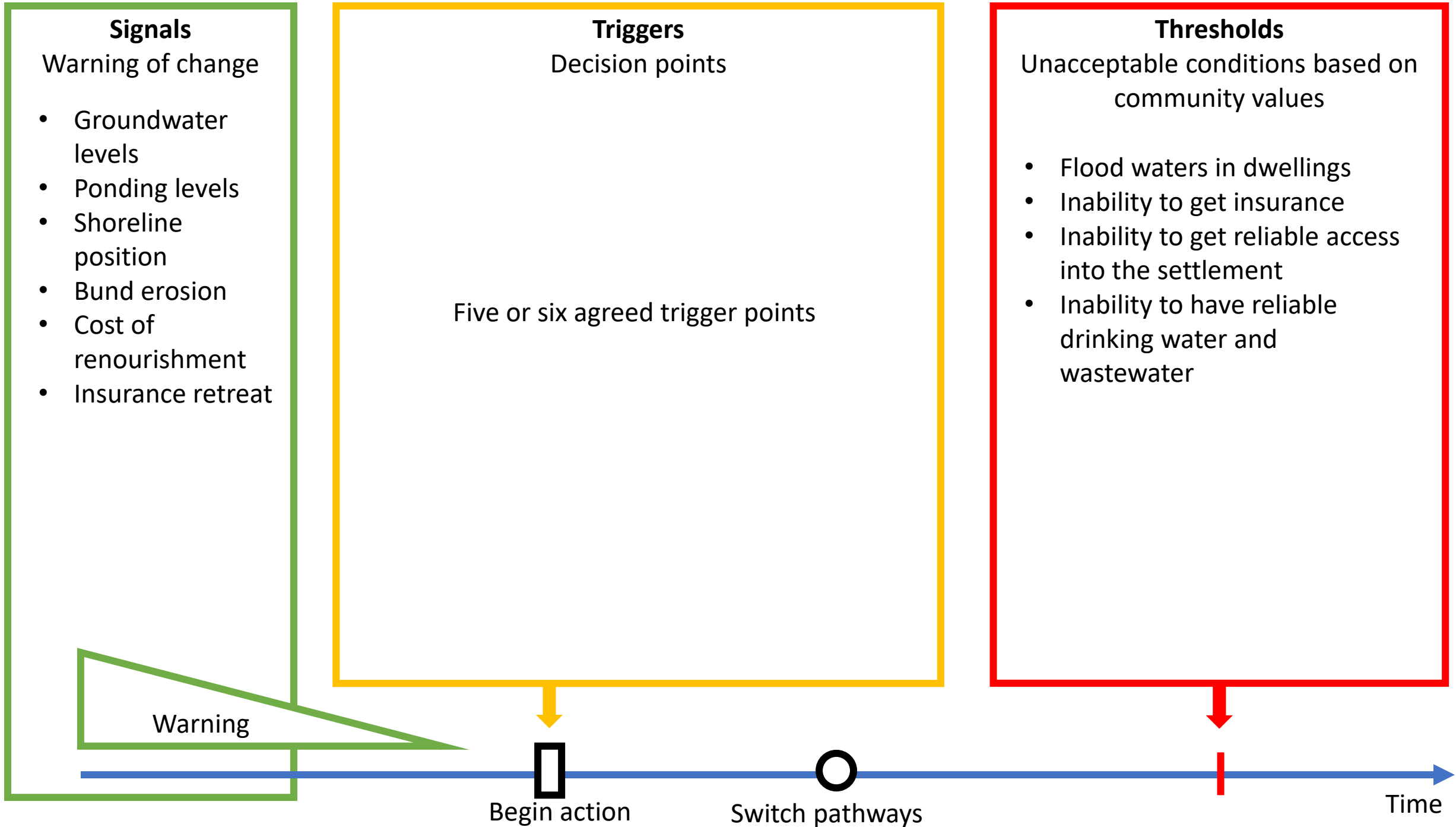
- Flood waters in dwellings
- Inability to get insurance
- Inability to get reliable access into the settlement
- Inability to have reliable drinking water and wastewater

Warning

Begin action

Switch pathways

Time





**Actions**

## Action: CoastSnap Monitoring

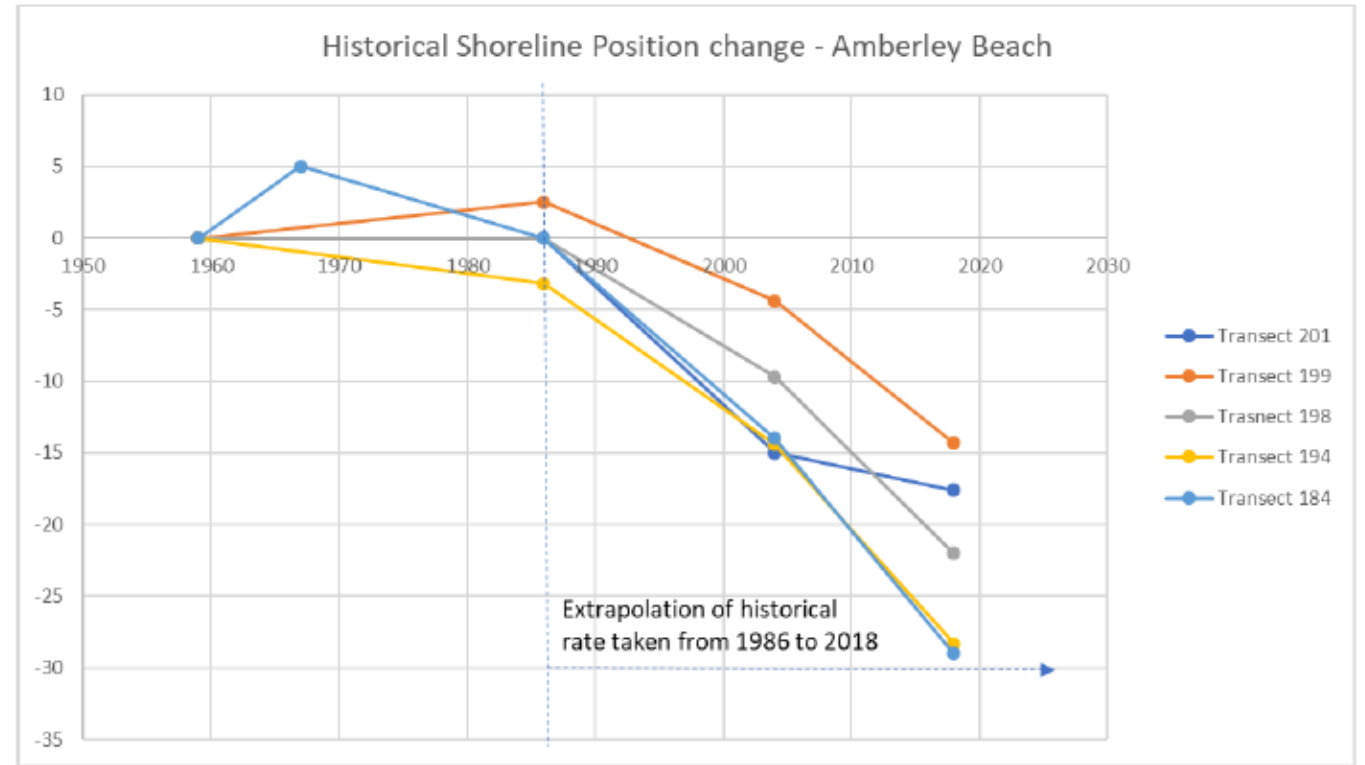
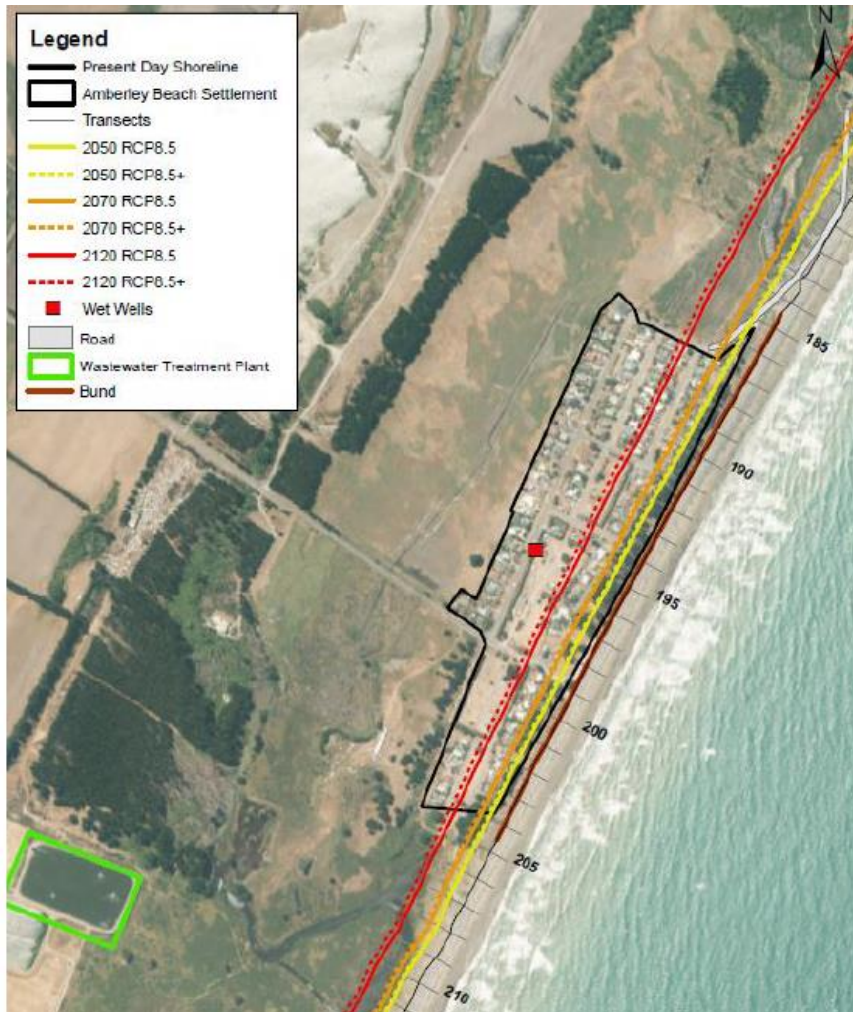


WHO: Hurunui District Council  
FUNDED BY: Hurunui District Council  
STATUS: Complete

Photo compilation ongoing.



# Action: Shoreline monitoring



WHO: Environment Canterbury

FUNDED BY: Environment Canterbury

STATUS: To be completed

Currently includes annual shoreline profiles. To be expanded to include a twice yearly drone survey. This will occur pre and post winter.

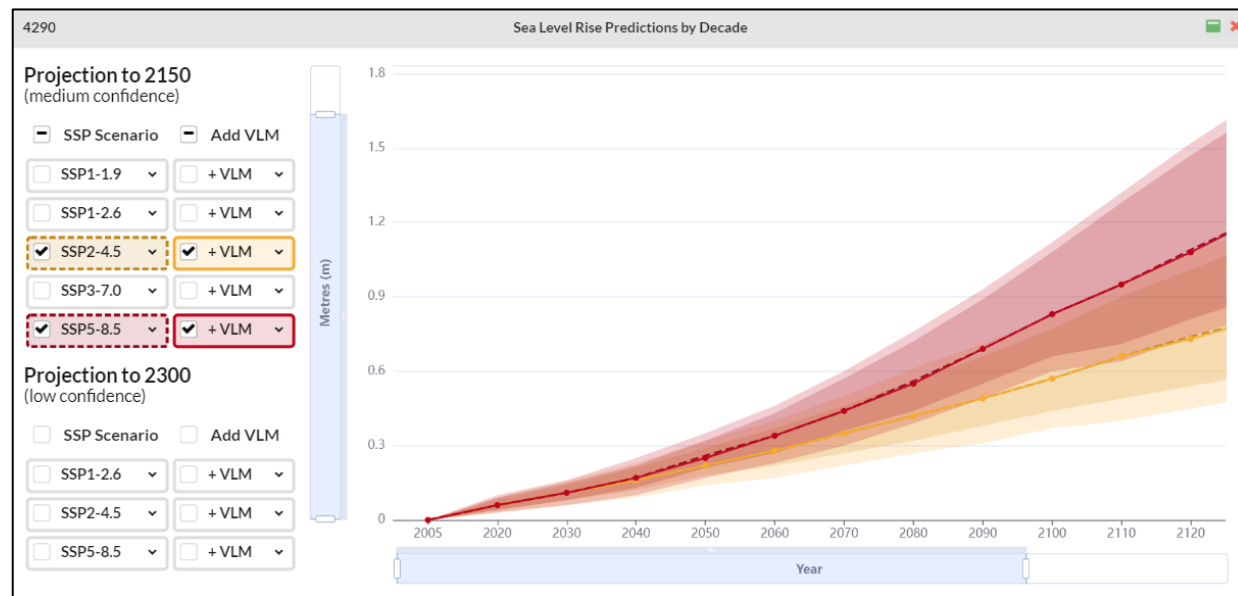


# Action: Review new information and update this Coastal Adaptation Plan

WHO: Environment Canterbury (science) and Hurunui District Council (policy and engagement)

FUNDED BY: Environment Canterbury (science) and Hurunui District Council (policy and engagement)

As required by changes to science or policy.



# Action: Continue to renew the bund consent for as long as practicable

WHO: Hurunui District Council

FUNDED BY: Hurunui District Council

STATUS: 2023 Consent in process with Environment Canterbury

Renewal of the bund consent will continue to be sought until the triggers within this plan are reached or Environment Canterbury advise they will not grant a renewal.





# Action: Stormwater management

WHO: Hurunui District Council

FUNDED BY: Hurunui District Council

STATUS: Ongoing

Hurunui District Council hold a Global Stormwater Discharge Consent and associated consents to enable works to improve stormwater management in the Amberley catchment.

Opportunities for improvements will continue to be identified through the Stormwater Management Plan.





# Action: Proposal to land bank

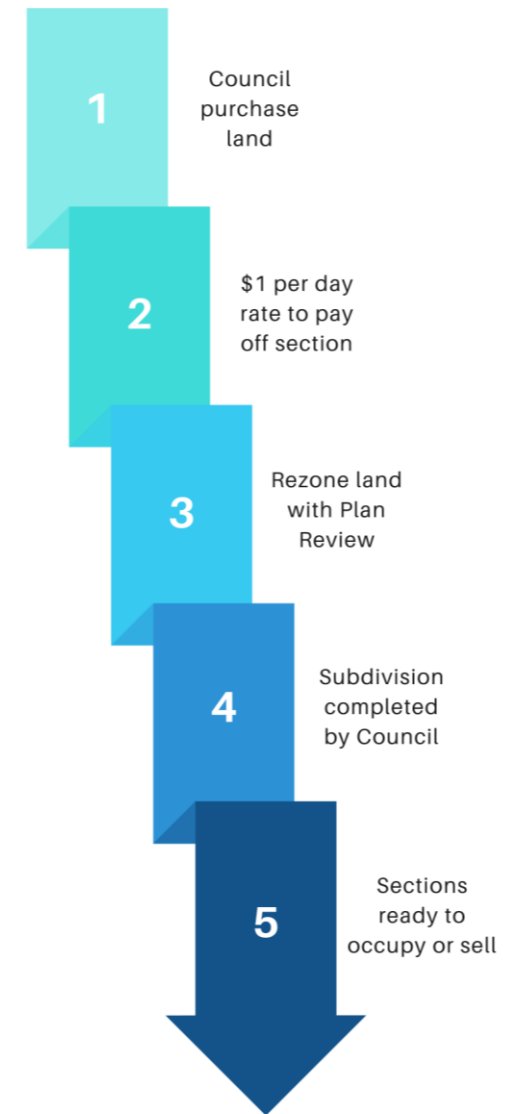
WHO: Hurunui District Council

FUNDED BY: Hurunui District Council and Amberley Beach

STATUS: Proposed

There has been discussion about Council purchasing land on behalf of the community to help enable retreat if required.

Council can continue to refine this and prepare contracts for landowners. A series of actions will be required if this is to be implemented.



# Action: Plan Change to the Coastal Plan and District Plan



PREPARED BY: Hurunui District Council  
FUNDED BY: Hurunui District Council and Environment Canterbury?  
STATUS: Awaiting completion of adaptation planning

The existing Coastal Plan rules are not fit for purpose and require changes to allow for adaptive planning and continued enjoyment. If retreat is to be undertaken planning changes are required to implement this.

There are opportunities to streamline the consent process.

# Action: Changes to the Long Term Plan

PREPARED BY: Hurunui District Council  
FUNDED BY: Hurunui District Council  
STATUS: Awaiting completion of  
adaptation planning

Funding for adaptation actions needs  
to be included in the Long Term Plan.  
This will be notified in May/June  
2024.





# Proposed Pathways

Coastal bund



Progressive relocation of coastal bund



Coastal bund, inundation bund and pump station



Hard protection, eg. rock revetment



Managed retreat



Hard protection, inundation bund and pump station



Hard protection and managed retreat



# Questions