



Coastal adaptation planning - we want your input

Adaptive Management explained

Adaptive management is a dynamic and iterative decision-making process that allows for adjustments in response to changing conditions and improved understanding of environmental outcomes. It involves continuous learning and active participation from the community and stakeholders.

Communities across Aotearoa are contending with rapid environmental changes that have seen the loss of property, infrastructure, and social cohesion. Central government recommends the Dynamic Adaptive Pathways Planning (DAPP) approach as an assessment tool for developing adaptation options. It helps decision-makers and communities consider the conditions under which policies will fail to reduce risks and provides stress-test options using plausible socioeconomic scenarios of the future.

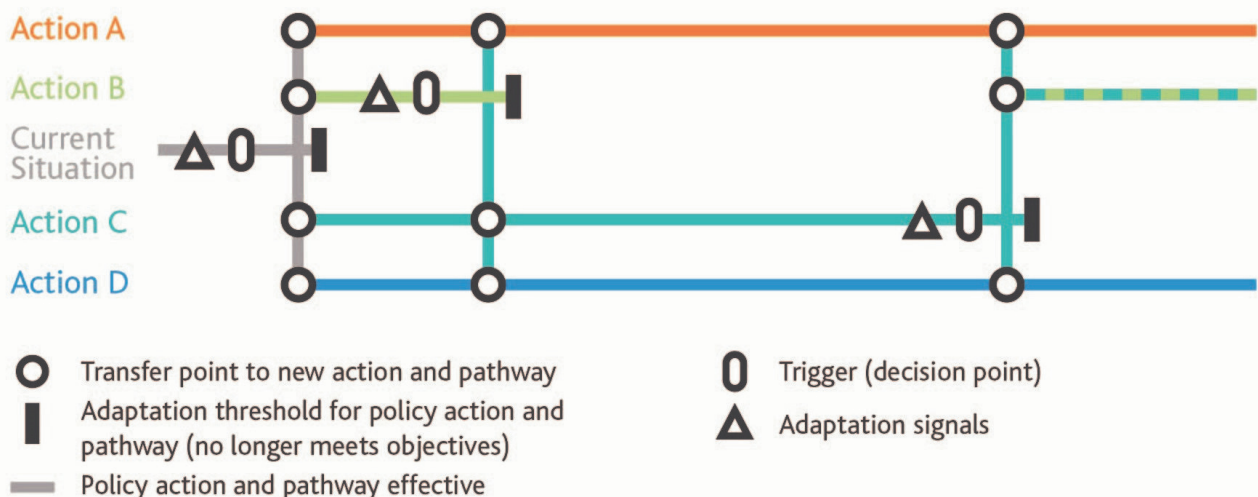


Figure 1. Example DAPP 'map' showing a range of actions available (left axis) and potential transfer points (circles) between actions (coloured lines). Some actions will reach adaptation thresholds faster than others, and therefore have shorter life spans.

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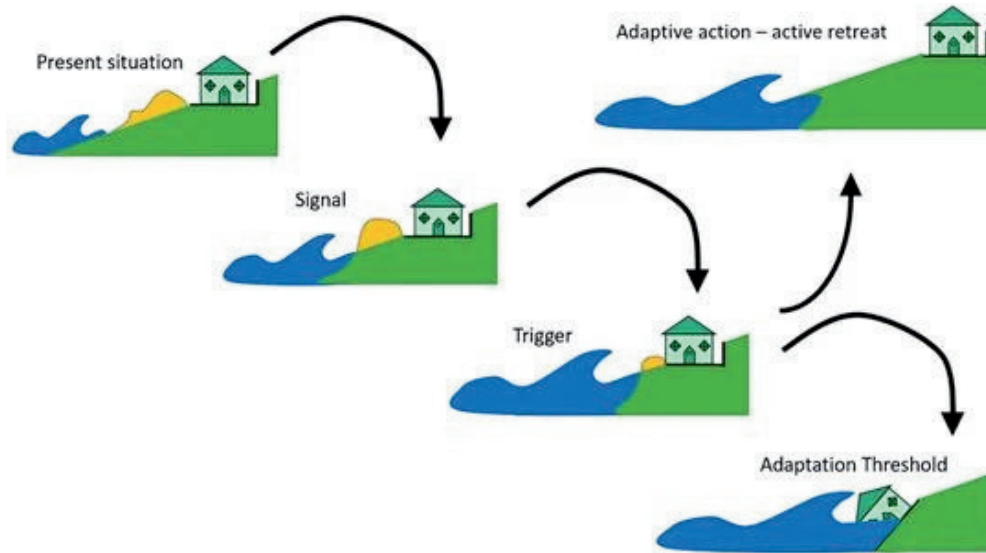


Figure 2. An example sequence of events under climate change. DAPP uses the trigger to instigate a change in action to avoid the adaptation threshold occurring (Simulating the Impacts of Applied DAPP - Allison et al1, 2023: <https://www.mdpi.com/2077-1312/11/2/343>).

The Waikato District Resilience Project

The Waikato District Resilience Project is a joint project with the Waikato District and Regional Councils, tangata whenua, and communities, based on the DAPP approach. It seeks to improve resilience throughout the district, with Port Waikato as the highest priority.

The project will build on the previous work carried out by the Port Waikato Resilience Group and the Councils. The Port Waikato community and mana whenua will ultimately decide what resilience means to them and what actions they think are appropriate. The project will integrate maori values such as kaitiakitanga (guardianship) and mauri (life force) into decision-making processes.

Develop a vision for the future

Create a resilient Port Waikato, protecting the place's community values and mauri while addressing climate change and coastal hazards. What does a sustainable future look like preserving the environment and the community's well-being?

Determine community's values

Community values may include, for example:

- **Love for local nature:** Preserving our beaches, dunes, and wetlands through nature-based solutions and community endeavour.
- **Desire for safety:** Reducing risk to life and property from flooding and erosion where possible.
- **Infrastructure:** Maintaining and improving our roads, drainage, and facilities where we can minimise the impacts of weather events

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Key issues facing Port Waikato

- **Reduced natural sand volumes, erosion and rising sea levels:** There is significant reduction of sand entering the Sunset Beach system, high wave energy and an increasing risk of flooding, coastal erosion, and inundation. This may be cyclical (based on historical records), but we are currently going through erosion. This may change to accretion (build up of sand), but we don't know when so we must plan for the unexpected.
- **Natural hazards:** Storm surges, extreme weather events, flooding, drought and land slides.
- **Environmental issues:** Protecting our natural habitats and biodiversity.
- **Infrastructure stress:** Ensuring our roads, drainage, power, telecommunications and community facilities are resilient.

Strategies for Coastal Adaptation for Port Waikato

1 - Short-Term Actions (0-2 years): Foundation planning, triggers and quick wins

- Monitoring and maintenance of Sunset Beach and urban areas of Port Waikato: support community-led monitoring programs to empower local residents in data collection and reporting.
- Enhance natural defences like dunes and wetlands when we are in an accretion phase.
- Improve drainage systems to manage stormwater and flooding (see 31st August meeting).
- Conducting regular maintenance on the stormwater system and river stop banks, particularly before storm events.
- Maintain a steering committee with cross community membership, mana whenua, local government and central government. Include communications channels (through the Council website, social media, newsletters, and public information boards).
- Initial council workshops to support the Port Waikato Project in Natural Built Solutions (Dune restoration, sand replenishment etc)
- Develop emergency response plans and drills for property owners, and include marae resilience and what resourcing all of them need.

2 - Medium-Term Actions (1-5 years): Pathway development

- Facilitate scenario planning workshops so the community identifies the triggers for adapting community facilities, infrastructure, and property (research should incorporate traditional ecological knowledge for scenario planning and policy development).
- Implement monitoring systems and initiate policy updates.
- Plan for possible relocation of vulnerable infrastructure and community facilities.
- Promote sustainable land use practices to reduce environmental impact.
- Engage in capacity building activities and community led projects. Invest in resilient infrastructure that can withstand future hazards where feasible.
- Develop up key indicators that will signal when it's time to implement different adaptive actions.

3 - Long-Term Actions (1-10+ years): Long-term adaptation and continuous improvement

- Explore options for managed retreats (within and outside the community) in the most at-risk areas (including cost-benefit analysis and government support).
- Develop long-term plans for community relocation if necessary.
- Continue monitoring and adapting to changing conditions.

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Key planning decisions

- **Enhancing natural defences:** Strengthening dunes and wetland areas as natural buffers against sea-level rise, storm surges and river changes where possible.
- **Infrastructure upgrades:** Ensuring roads, drainage, and public facilities are built to withstand extreme weather and future sea-level rise.
- **Community involvement:** Establish a community advisory board with representation from various stakeholders, including mana whenua, to provide continuous input and oversight on adaptation planning.
- **Environmental protection:** Prioritising the health of our ecosystems to ensure they continue to provide natural defences and recreational opportunities
- **Adaptive Management:** Over time, the environment will change and may continue to impact property and infrastructure. We need to agree on some options for how we deal with this in the future.

How you can get involved

- **Stay informed:** Attend community meetings and stay updated on the latest plans and actions.
- **Give feedback:** Share your thoughts and ideas on proposed actions, plans and strategies.
- **Volunteer:** Join successful initiatives like the dune restoration project or participate in citizen science programs monitoring coastal changes. Engage in training workshops to build resilience skills within the community.

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