South Dunedin Future

What can we do?

DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

Otago Regional Council

Big ideas for a better future!

We are pleased to present 16 ideas that could help South Dunedin adapt to flooding and future climate change.

Over the past four years, we have talked with thousands of locals, as well as mana whenua and community leaders, scientists, engineers and other experts. Overwhelmingly people want to help create a safer and better future for South Dunedin.

All your ideas and everything we have learned so far have been combined into these 16 possible adaptation approaches that could be used in the area in coming decades.

There are a wide range of ideas, including upgraded drainage and innovative floodable parks that double as water storage, clever ways to side-step trouble with new planning rules to manage where and how things are built and ways to create space for new protections, housing and public spaces.

In this flyer, we will introduce you to the 16 approaches, and the framework we used to help come up with them, and explain what happens next.

"Always plan ahead. It wasn't raining when Noah built the ark."

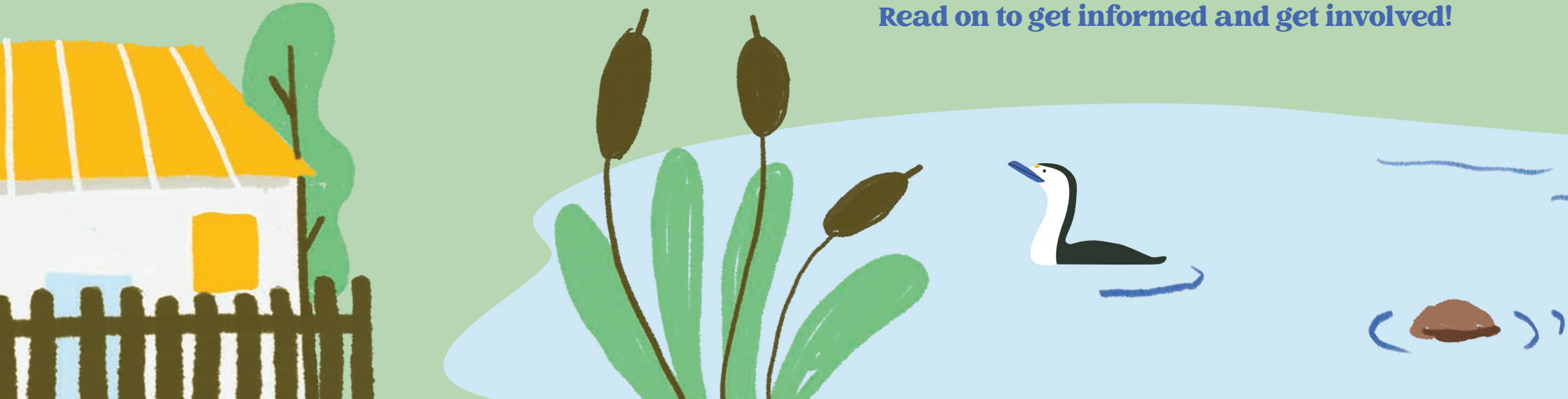
The plans we make today will benefit our children and grandchildren.

The plan we are working on is not just about fixing today's problems; we're planting seeds for a future that will stand strong for the next 100 years. That means preparing for more intense storms, rising seas and groundwater, and making sure our community can weather these challenges for years to come.

This is just our initial long list. Over the next two years we need to narrow down and together figure out which approaches will work best in which parts of South Dunedin. We will need a lot of community involvement to get this right.

There will be many ways for you to get involved. We will be holding weekend expos, running workshops and stalls at festivals, and putting out surveys to get your thoughts.

Read on to get informed and get involved!



About the approaches

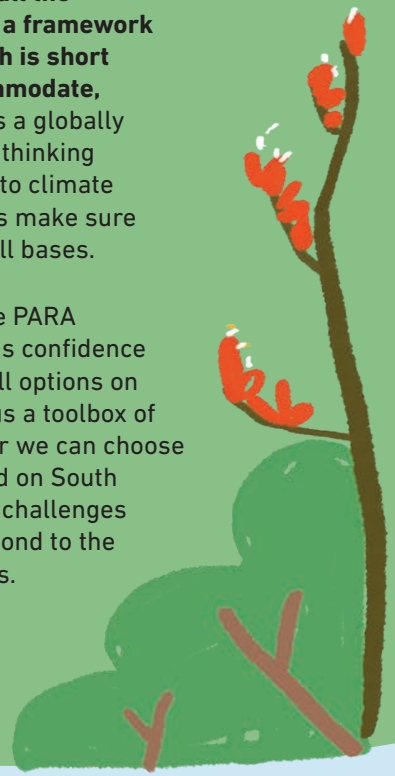
Fight or flight? It's not that black and white.

There has been a lot of talk about staying in South Dunedin or having to leave. Flooding and climate change is not a problem with a black and white solution, and our plan for South Dunedin must include a range of options.

Sure, there are fight and flight options – fight is building seawalls or bigger pipes and pumps and at the flight end, managed retreat and home buyouts might be something we discuss for the decades to come. But those are not our only options. There is a range of ways to adapt to all the water coming our way.

We have grouped all the approaches using a framework called PARA, which is short for Protect, Accommodate, Retreat, Avoid. It is a globally recognised way of thinking about approaches to climate adaption that helps make sure we have covered all bases.

Thinking within the PARA framework gives us confidence that we have put all options on the table. It gives us a toolbox of options so together we can choose the right mix based on South Dunedin's specific challenges and risks and respond to the community's needs.



P is for Protect

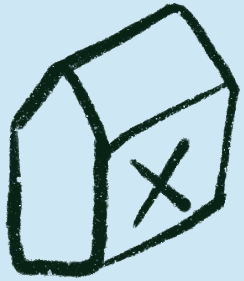
Think seawalls, dykes, berms, drainage upgrades, water storage, floodable infrastructure or wetlands. It is about changing the way water flows to protect your community.

A is for Accommodate

When the water comes, you can't just ignore it. This option is about adapting to the inevitable. Think raising homes, waterproofing first floors, rain tanks and flood-proof buildings. It's about learning to live with the water, not protecting against it.

R is for Retreat

Sometimes, withdrawal is the smartest move. This might be reactive retreat after an emergency event, or planned relocation through voluntary buyouts or moving critical infrastructure from vulnerable sites. To get people and property out of harm's way.



A is for Avoid

Not every battle is worth fighting head-on. This option means avoiding trouble zones. It could involve smart planning rules that restrict building in high-risk areas or allow it in other areas if they are safe. It might involve establishing buffer zones, or zoning high hazard land for purposes like parks, conservation or flood management areas.

PROTECT

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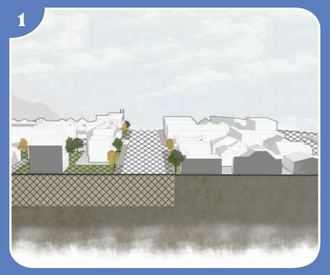

Ground reinforcements

Many different methods can be used to reinforce the ground, which can help to make soil more stable and reduce the chance of liquefaction.

PROTECT

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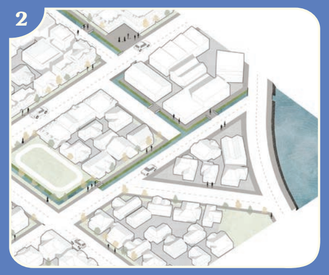

Groundwater / Lowering

When the sea level rises, groundwater also rises and the risk of flooding increases. Additional drainage and dewatering wells are ways to lower groundwater, protecting underground and low-lying infrastructure.

PROTECT

3

Land Grading

The method of 'land grading' or 'land elevation' involves physically raising the ground level above the flood plain, to reduce the risk of buildings and infrastructure being flooded.

ACCOMMODATE

10

Behavioural / Societal Changes

We can't build our way out of everything. Small changes in behaviour can build community resilience, lessen the impacts of climate events and help speed up recovery. Financial rewards or sanctions, education and awareness initiatives and mental health assistance can help create collective change over time.

The 16 Approaches

The list was made by merging around 280 ideas crowdsourced from the community and stakeholders with the best approaches from around the world. Our experts looked for examples from other places with similarities to South Dunedin.

At this early stage, none of the methods have been priced because the costs will vary depending on the extent, size and timeframes for which they are used. That more detailed thinking will come in future stages of this project as we go from a long list to a short list.

For more information about all the options look on our website at *dunedin.govt.nz/southdunedinapproaches* or scan this QR code above on your phone.

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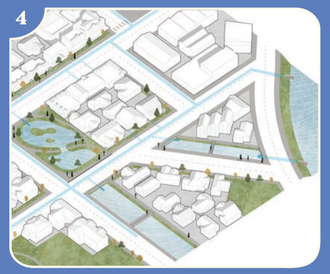

Water Flow Improvements

Water can be dispersed more effectively by changing or improving drainage systems, such as through putting in larger pumps or pipes, diverting flows, or building engineering channels or canals.

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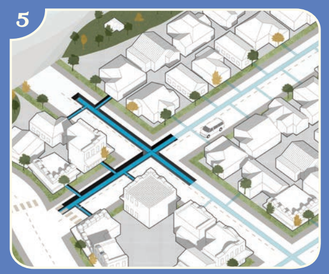

Remove Wastewater Network Overflows

Wastewater spilling out of the water network when it's at full capacity creates health risks. We can remove wastewater network overflows by fixing cracked pipes and manholes, removing accidental connections to the stormwater system and adding capacity.

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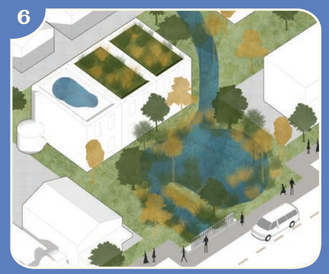

Dedicated Water Storage

Dedicated water storage areas include basins, ponds, and wetlands on the ground surface or underground, that fill during storms and are slowly released.

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Readiness and Response

Community readiness (pre-event) and response (post-event) activities can involve early warning systems, public education campaigns, emergency response plans and providing support services before, during and after a flood event to reduce impacts on communities.

RETREAT

13

Reactive Retreat

A decision could be made to withdraw from or abandon homes or infrastructure after damage has already occurred, due to a major event such as a storm, flooding, tsunami, earthquake or rapid erosion.

AVOID

15

More Restrictive Standards

Vulnerability to hazards can be reduced by tightening development controls. This could be done through more regional and district plan rules or building standards, such specifying minimum floor heights, requiring buildings to be setback from the coast or waterways, or restricting how much land a building can cover.

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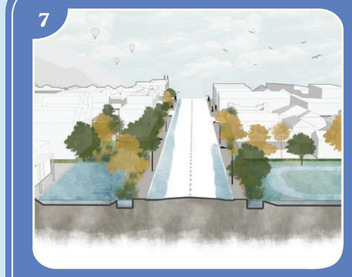

Floodable Infrastructure

Spaces like parks, reserves, carparks or roads can be transformed into intentional temporary flood storage zones or overland flow paths, holding water during weather events and protecting other areas from flooding.

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Increase Permeability

Making the ground more absorbent and 'sponge-like' through methods such as green roofs, reducing paved or concreted areas, introducing rain gardens, bioswales or planting more trees can help manage excess rainwater.

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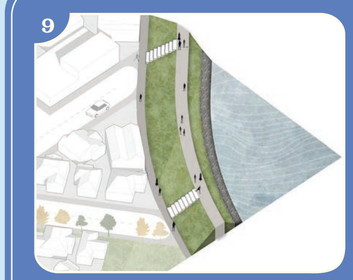

Coastal Protection

Coastlines can be protected from erosion and/or flooding through 'hard engineering' options such as sea walls, dykes, groynes and breakwaters and 'soft engineering' options such as salt marsh, coastal wetlands, sand placement and dune restoration.

12

Property Level Interventions

Individual properties can be modified to make them more resilient against flooding. Measures can include raising homes, waterproofing first floors, or flood barriers.

14

Managed Relocation

A decision could be made to proactively move homes or infrastructure before significant damage occurs from natural or climate hazards, through means such as voluntary buyouts or removing critical infrastructure from a vulnerable location.

16

No New Development

Changes to planning rules can prevent additional development of land in high-risk areas, reducing property exposure to hazards over time, and driving retreat in the longer term through preventing rebuilding or building in areas prone to flooding or coastal inundation.

PROTECT

PROTECT

PROTECT

ACCOMMODATE

RETREAT

AVOID

What happens next?

The South Dunedin Future programme has multiple stages. We are up to "What can we do?" and have a long-list of 16 approaches to talk to mana whenua, the community, and stakeholders about.

We will be gathering feedback and then our technical teams will do more work on costs, feasibility, implications and trade-offs.

The next step is to decide on the specific areas or neighbourhoods for adaptation within South Dunedin. In late 2024, we will come back to involve you in long-lists for these areas that will show how a number of approaches can be used over time.

Our aim is to have a final plan in place in 2026.

Get in touch

Head to our website to learn more.
Sign up for regular updates or drop us a line.
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South Dunedin Future is a joint programme between Dunedin City Council and Otago Regional Council to help the South Dunedin community adapt and prepare for a changing climate, and future flooding problems.

There will be a wide range of opportunities to get involved over the next two years. We encourage you to get involved, hear what others think and play an active role.

SOUTH DUNEDIN FUTURE