

CITYWIDE CLIMATE RESILIENCE FRAMEWORK

Department: Climate and City Growth

EXECUTIVE SUMMARY

- 1 The purpose of this report is to seek Council endorsement of a proposed citywide climate resilience framework and approval of a preferred option for implementation.
- 2 The framework will enhance council's climate adaptation and resilience work, enabling a more effective citywide response to the current and anticipated impacts of natural hazards and climate change.
- 3 A proposed Citywide Climate Resilience Framework graphic is at Attachment A.
- 4 A summary of implementation options and scheduling is at Attachment B.

RECOMMENDATIONS

That the Council:

- a) **Notes** the Citywide Climate Resilience Framework report.
- b) **Decides** a preferred option.
- c) **Notes** that any resource required for the preferred option will be added to draft budgets.
- d) **Notes** that staff will partner with mana whenua and consult with Otago Regional Council (ORC) on the scope, design, and implementation of the framework.

BACKGROUND

- 5 In May 2023, Council discussed the anticipated impacts of sea-level rise on selected council assets and the potential costs associated with their ongoing maintenance and renewal. Subsequently, Council resolved:

Moved (Cr Sophie Barker/Cr Kevin Gilbert):

That the Council:

- a) **Adds** the development of a Climate Adaptation Plan to its forward work plan.
- b) **Notes** that progress updates will be reported to the Strategy Planning and Engagement Committee.

anticipate and cope with shocks or adverse events, and to recover from the associated impacts in a timely and efficient manner. In this sense, adaptation is part of and contributes to resilience.

- 9 While the original Council motion (CNL/2023/117) called for development of a ‘climate adaptation plan’, subsequent exchanges with Councillors and work by staff have identified a wider set of relevant considerations. As such the broader term ‘climate resilience’ is used in this report to reflect the more holistic approach represented by the proposed framework.

Existing approach to climate resilience

- 10 The Dunedin City Council (DCC) and Otago Regional Council (ORC) undertake a wide range of resilience-related activities as part of core council business.
- 11 Climate change is central to infrastructure and land use planning, where council considers natural hazards and the associated risks, now and in the future. Considerations can include adapting legacy infrastructure and land use, where previous planning may not have accounted for new and emerging risks, or developing new and improved infrastructure and land use, to account for anticipated risks and increase resilience. In some instances, the uncertainties and complexities associated with potential impacts of climate change have exceeded normal council capacities and required the establishment of dedicated projects and programmes.
- 12 DCC currently has two such climate resilience initiatives, South Dunedin Future and St Clair-St Kilda Coastal Plan, with other climate resilience-related work occurring as part of standard infrastructure and land use planning activities. ORC has two discrete resilience-focussed initiatives, in Glenorchy and the Clutha Delta, supplemented by several smaller climate resilience and adaptation projects incorporating natural hazards monitoring, investigation, and prediction.
- 13 The councils occasionally collaborate on climate resilience-related issues, including strategic land use planning processes such as the Future Development Strategy, infrastructure-related issues such as pluvial flood schemes, and programmes and projects like South Dunedin Future.

Case for enhanced climate resilience

- 14 There is a growing appreciation of both the challenges presented by a changing climate, and the limitations of existing climate resilience approaches. The increasing frequency and severity of weather events, such as the Auckland Anniversary floods and Cyclone Gabrielle in 2023, combined with gradual changes, such as coastal erosion and rising groundwater affecting South Dunedin, are indications of the growing speed, scale, and complexity of climate impacts.
- 15 The Ministry for the Environment’s best practice guidance on climate adaptation, and the Finance and Expenditure Committee’s October 2024 inquiry into climate adaptation, have both highlighted the importance of, and need for, better quality natural hazard information, risk assessment, and adaptation planning to strengthen climate resilience. In a recent report examining how well councils are responding to a changing climate, the Office of the Auditor General (OAG) described climate change and its impacts as “the most enduring and pervasive challenge they [councils] will face, extending beyond council boundaries and across multiple electoral terms”. The OAG recommended collaboration across councils, establishing clear and measurable climate strategies and priorities, effective governance, and transparent public reporting and accountability.
- 16 Such measures are already in place for many of New Zealand’s large financial organisations. Since January 2023, the Government has made climate-related disclosures mandatory for some financial market participants, including large publicly listed companies, insurers, banks, non-

bank deposit takers and investment managers. Improving transparency and revealing climate-related information is intended to ensure climate change impacts are routinely considered by financial markets, support greater foresight and responsibility, and lead to more efficient allocation of capital. The intent is to increase the resilience of the financial system and smooth the transition to a more sustainable, low emissions economy. Mandatory disclosures will also help address risks outlined in the National Climate Change Risk Assessment.

- 17 While climate resilience is already factored into a wide range of council business and is a feature in some existing systems and processes, this currently occurs sporadically and without a clear strategy or central coordination. The cross-cutting nature of climate change requires purposeful collaboration across teams, sectors, and organisations to develop and implement fit-for-purpose adaptation responses and enhance wider climate resilience.

Māori participation in the adaptation and resilience process

- 18 As noted in DCC's submission to the Government's Inquiry into Climate Change (October 2023), Māori participation in the adaptation process is of critical importance. Māori involvement throughout the climate adaptation planning process will be essential, enabling mana whenua to partner with councils, while also affording space for Māori to also determine their own approach to adaptation and developing wider climate resilience.
- 19 There are a range of barriers to Māori adaptation that need to be acknowledged and addressed. For example, consideration must be given to the special nature of Māori land in adaptation planning and an adaptation system needs to account for the potential for climate change to have a disproportionate impact on Māori.
- 20 It will be important to ensure access to relevant information, and to seek to embed te ao Māori and mātauraka Māori in the design and operation of the citywide climate resilience framework. Such considerations will require partnering with mana whenua and local Māori communities to support the design, establishment, and operation of the proposed framework.

Overview of proposed citywide climate resilience framework and adaptation plan

- 21 This report proposes an approach to enhancing councils' climate resilience response, making it more effective, efficient, and sustainable – and ultimately 'fit for purpose'. This includes putting a more formal structure around councils' climate resilience work, which would include a citywide climate resilience framework and adaptation plan. The framework seeks to utilise existing council systems and processes across both city and regional councils, enhancing these with additional climate resilience-focussed activities where required, and scheduled to feed into council planning and budgeting cycles as appropriate.
- 22 The framework includes four key stages, operating in a cycle: (i) natural hazard assessment; (ii) risk assessment; (iii) adaptation planning; and (iv) adaptation action. The key elements of each stage would be summarised to form a citywide adaptation plan. The proposed citywide climate resilience framework is detailed below and summarised in **Attachment A**.

Stage 1 – Natural Hazards

- 23 The first stage of the framework would focus on natural hazards to gain an understanding of the 'hazard scape' affecting Dunedin now and in the future. The ORC plays a central role in monitoring, investigating, and predicting natural hazards across Otago, including in Dunedin, where there is an extensive body of knowledge and existing work programmes.

- 31 An adaptation planning-led response might occur, for example, when: (i) a risk cannot be satisfactorily managed through normal infrastructure and land use planning processes; (ii) where the affected area(s) include extensive residential, commercial, or industrial development; (iii) or where complexities, uncertainties, or special circumstances are such that it justifies a dedicated place-based adaptation planning process.
- 32 Adaptation planning is scalable, and in the framework is proposed to occur at three levels: (i) streamlined adaptation planning to supplement standard infrastructure and land use planning processes (e.g. support with best practice, communications, and community engagement); (ii) a place-based adaptation planning project (e.g. St Clair-St Kilda Coastal Plan); or (iii) a complex place-based adaptation planning programme (e.g. South Dunedin Future).
- 33 The adaptation planning work would have various information needs, including in terms of natural hazards and risk. These information requirements would be fed back into Stage 1 and 2 of the framework, informing the focus of the natural hazards investigation, monitoring and prediction, as well as guiding the focus of subsequent cyclical risk assessment work (or identifying if or where additional risk assessment work was required).
- 34 The primary outputs from Stage 3 would be adaptation plans, which would detail a range of adaptation actions recommended to mitigate the risks and hazards identified in previous stages. The intention would be to scope, scale, and schedule this adaptation planning work so that it fed directly into the cycle of council decision making processes – which would form the bridge between planning and implementation (or ‘adaptation action’ undertaken in Stage 4).

Stage 4 – Adaptation Action

- 35 The adaptation plans developed in Stage 3 would provide a range of stakeholders with detailed assessments of hazards, risk, and recommended options for mitigating those risks through infrastructure, land use planning, and other adaptation actions. These would effectively be blueprints for enhancing climate resilience across the city. For internal stakeholders, this information would inform a range of strategic, operational, planning, and budgeting decisions – enabling the mainstreaming of climate resilience considerations within council’s core business.
- 36 Council groups, departments, and teams would be able to integrate those climate resilience considerations as appropriate, determining their level of importance relative to other council objectives and priorities. If climate resilience considerations were assessed as sufficiently important, they could be prioritised by council teams, and subsequently fed into council’s corporate planning processes (e.g. annual plan, long term plan, budget setting), infrastructure processes (e.g. capital expenditure plan, 30-year infrastructure strategy, building regulations), and land use planning (e.g. Future Development Strategy, District Plan changes), as appropriate.
- 37 The funding of adaptation actions would be subject to standard council processes and would occur only if adaptation actions formed part of each council team’s approved operational or capital expenditure. If or when approved, for example through council’s annual plan or long-term planning processes, the adaptation actions could roll out according to respective implementation plans. The expectation would be that these adaptation actions would materially reduce the corresponding climate or natural hazard risk thereby enhancing climate resilience. The resulting reduction in risk profile could be accounted for in subsequent stages and cycles of the climate resilience framework, informing a revised assessment of the relevant risk, associated adaptation planning requirements, and adaptation actions (if or as required).

- 38 In essence, Stage 4 of the citywide climate resilience framework would use council’s *existing* corporate planning, infrastructure, and land use planning processes to assess whether proposed adaptation actions produced in Stage 3 justify funding, relative to other council priorities. The key change is that this assessment would be informed by detailed hazard, risk, and adaptation planning information and occur within a wider, more coherent strategic framework.

Adaptation Plan

- 39 Key elements of each of the four stages of the framework would be summarised into a citywide adaptation plan for Dunedin. This plan could take a number of different forms but would capture important information relating to the current and future environment, the risks presented to Dunedin, adaptation planning processes associated with those risks, and actions being taken in response. It would provide a clear and holistic picture of the climate change challenges facing Dunedin and the work being undertaken to address these and enhance climate resilience.
- 40 This plan would be updated periodically, on a sequence best aligned to relevant council processes (e.g. every 3 years, to align with long term plan and budget cycles), to ensure it remained relevant and fit for purpose.

Benefits of the proposed citywide climate resilience framework

- 41 The key benefits of establishing a citywide climate resilience framework would be:
- a) Efficiency - Improved efficiency by using existing council systems and processes; avoiding the duplication and transaction costs associated with bespoke, disconnected, and one-off climate adaptation and resilience projects and other temporary parallel structures.
 - b) Effectiveness - Improved effectiveness by implementing pro-active, evidence-based, and prioritised adaptation actions only; avoiding reactive, dis-jointed, and ineffective actions that do not make a material difference to risk reduction; and
 - c) Sustainability – Improved sustainability by using mostly existing resources to operate a coherent internal system on a cyclical basis, allowing for periodic review of hazards, risk, adaptation options, and holistic decision-making, avoiding reactive surges in potentially unsustainable adaptation actions and expenditure after disaster events.

Implementation of the citywide climate resilience framework

- 42 A key strength of the proposed citywide climate resilience framework is that it would largely utilise existing council systems and processes, enhancing these where required, to align DCC’s response to the growing climate challenges facing Dunedin. This approach is expected to be more efficient, effective, and sustainable for council that would enhance the city’s climate resilience. It does, however, represent a different state of operating and additional effort and an internal change process would be required to finalise design of the framework, establish and transition from current to new operating model, and to run that new model on a day-to-day basis.
- 43 This anticipated additional effort is summarised below:
- a) Finalise design of the citywide climate resilience framework: This would include completing the key design elements of the framework; engaging with mana whenua and ORC to confirm support, agree governance and management arrangements, operational

- 49 The staged implementation option would similarly involve an initial, desk-top exercise to complete a stocktake of existing or planned activities in each of the four stages of the proposed citywide climate resilience framework. Key elements of this stocktake would then be summarised into an interim climate adaptation plan for Dunedin. This interim plan would be a snapshot of business-as-usual activities, forming the basis for more detailed work to design, establish, and implement the new framework from 1 July 2025.
- 50 Under this option, the interim plan could be delivered by 30 June 2025. The design, establishment, and implementation of the citywide climate resilience framework could commence from 1 July with additional resourcing. A final adaptation plan could be delivered by 31 December 2026 (following implementation of each of the four stages of the framework).
- 51 This option would require additional resources during the 18-month period 1 July 2025 – 31 December 2026, to enable the design, establishment, and implementation of the framework. It would also require ongoing and periodic additional resourcing thereafter to operate the framework (e.g. six-yearly risk assessments, three-yearly plan updates, coordination of adaptation planning work, etc).
- 52 The estimated additional resourcing required is \$702,500 over two financial years (2025/26 – 2026/27), comprising personnel costs and operating expenditure. In 2027, existing South Dunedin Future resource (personnel and operating budget) could be transferred to continue implementation of the citywide climate resilience framework.

Accelerated implementation

- 53 The accelerated implementation option would involve a stocktake of existing or planned activities in each of the four stages of the proposed citywide climate adaptation framework supplemented by an initial ‘test-run’ of the framework cycle to develop a high-level risk assessment and risk screening, scope initial adaptation planning, and develop recommendations about key adaptation actions.
- 54 Key elements of the stocktake and test-run of the cycle would then be summarised into an initial climate adaptation plan for Dunedin by 30 June 2025. This initial plan would be a snapshot of business-as-usual activities but enhanced by the new insights and processes produced by the test-run. It would enable design, establishment, and implementation of the citywide climate resilience framework to commence from 1 July 2025.
- 55 This option would require additional resources during the 18-month period 1 January 2025 – 30 June 2026, to enable design, establishment, and implementation of the framework. A final climate adaptation plan would be delivered by 30 June 2026 (following implementation of each of the four stages of the framework). Further updates and refinements of the adaptation plan would occur as required, based on subsequent cycles of the framework.
- 56 The estimated additional resourcing required is \$1.074 million over two financial years (2025/26 – 2026/27), comprising personnel costs and operating expenditure. In 2027, existing South Dunedin Future resource (personnel and operating budget) could be transferred to continue implementation of the citywide climate resilience framework.

OPTIONS

57 Three options are presented for implementing the proposed citywide climate adaptation framework and developing an adaptation plan for Dunedin. The scheduling of the options is illustrated in **Attachment B**.

Option One – Deferred Implementation

58 The deferred implementation option as described above involves a desk-top exercise now to complete a stocktake of existing and planned activities in each of the four stages of the proposed citywide climate resilience framework.

59 Implementation of this option requires no additional resource at this time, however, design, establishment and implementation of the citywide climate resilience framework is deferred until 1 January 2027.

Advantages

- Does not require any additional budget to be added to the 9-year plan.
- Activities described in this option would inform DCC and ORC’s climate resilience-related work, enabling some enhancement of councils’ overall adaptation response, which could be built on at a later date (e.g. allow for an incremental approach).

Disadvantages

- Benefits of adaptation planning and wider resilience work are delayed.
- This approach does not allow for engagement with affected communities and mana whenua before 1 January 2027.

Impact on debt, rates, and zero carbon

- This option would have no impact on debt or rates at this time, as all costs would be deferred or covered from within existing resources.
- The expected impact of this option on both Dunedin’s city-wide greenhouse gas emissions and the DCC’s own emissions is negligible. There is potential for climate resilience actions resulting from the framework to both increase emissions (e.g. hard infrastructure) or reduce emissions (e.g. nature-based solutions), but that would not be determined until early 2028 during design of those actions.

Option Two – Staged Implementation

60 The staged implementation option described above involves a desk-top exercise now to complete a stocktake of existing or planned activities in each of the four stages of the proposed citywide climate resilience framework. Key elements of this stocktake would then be summarised into an *interim* climate adaptation plan for Dunedin.

Advantages

- This option would allow for more substantive engagement sooner with affected communities and mana whenua, enabling some co-design of the framework, and integration of community engagement during implementation.
- The staged implementation would enable the benefits to be realised over time, while balancing the scope, scale, and costs associated with the work.

Disadvantages

- Requires additional operating budget (\$702,500) to be added in financial years 25/26 and 26/27.

Impact on debt, rates, and zero carbon

- This option would have no impact on debt, but additional rate funding of \$702,500 would be required, split across financial years 25/26 and 26/27.
- The expected impact of this option on both Dunedin’s city-wide greenhouse gas emissions and the DCC’s own emissions is negligible.

Option Three – Accelerated Implementation

61 The accelerated implementation option involves a stocktake of existing or planned activities in each of the four stages of the proposed citywide climate resilience framework supplemented by an initial ‘test-run’ of the framework cycle to develop a high-level risk assessment and risk screening, initial adaptation planning, and developing recommendations about key adaptation actions. Development of the framework, including engagement with mana whenua and the community begins immediately.

Advantages

- Responds to concerns raised by Councillors about perceived delays to developing a citywide climate resilience framework.
- A citywide climate resilience framework is developed and implemented sooner and represents the fastest manageable way to realise the benefits described in this report.
- Allows for accelerated engagement with affected communities and mana whenua, enabling co-design of the framework, and integration of community engagement in the transition and implementation.

Disadvantages

- Requires \$1.074 million to be added to the operating budget.
- This option is the most expensive, prioritising time over cost, and would place the most pressure on existing resources.

Impact on debt, rates, and zero carbon

- This option would have no impact on debt, but additional rate funding of \$1.074 million would be required, split across financial years 24/25 and 25/26.

- The expected impact of this option on both Dunedin’s city-wide greenhouse gas emissions and the DCC’s own emissions is negligible.

NEXT STEPS

62 Next steps will be determined by Council’s decision.

Signatories

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Authoriser:	Scott MacLean - General Manager, Climate and City Growth

Attachments

	Title	Page
A	Citywide Climate Resilience Framework - Summary Graphic	
B	Citywide Climate Resilience Framework - Scheduling of Options	

SUMMARY OF CONSIDERATIONS

Fit with purpose of Local Government

The cross-cutting nature of climate resilience and adaptation, and associated links to a wide range of council core business, means there would be close alignment with the purpose of local government, including (but not limited to):

- Enabling democratic local decision making and action by, and on behalf of communities.
- Promotes the social well-being of communities in the present and for the future.
- Promoting the economic well-being of communities in the present and for the future.
- Promoting the environmental well-being of communities in the present and for the future.
- Promoting the cultural well-being of communities in the present and for the future.

Fit with strategic framework

	Contributes	Detracts	Not applicable
Social Wellbeing Strategy	✓	<input type="checkbox"/>	<input type="checkbox"/>
Economic Development Strategy	✓	<input type="checkbox"/>	<input type="checkbox"/>
Environment Strategy	✓	<input type="checkbox"/>	<input type="checkbox"/>
Arts and Culture Strategy	✓	<input type="checkbox"/>	<input type="checkbox"/>
3 Waters Strategy	✓	<input type="checkbox"/>	<input type="checkbox"/>
Future Development Strategy	✓	<input type="checkbox"/>	<input type="checkbox"/>
Integrated Transport Strategy	✓	<input type="checkbox"/>	<input type="checkbox"/>
Parks and Recreation Strategy	✓	<input type="checkbox"/>	<input type="checkbox"/>
Other strategic projects/policies/plans	✓	<input type="checkbox"/>	<input type="checkbox"/>

The proposed citywide climate resilience framework would directly contribute to implementation of Dunedin’s Environment Strategy 2016-26, *Te Ao Tūroa – The Natural World*, by fulfilling the action described in the Strategy that relates to “developing and implementing a climate change adaptation plan and investigate options for areas affected or threatened by sea level rise”.

Māori Impact Statement

Accurately reflecting and integrating the principles of the Treaty of Waitangi, and Crown’s partnership with Māori, is proposed to be a central component of the citywide climate resilience framework. The scope of this is yet to be determined, about would be subject to engagement with mana whenua and Māori communities, as proposed in this report.

Sustainability

Sustainability will be a central component of the citywide climate resilience framework as it guides design and delivery of Dunedin’s response to the impacts of climate change over short-, medium- and long-term timeframes. The proposed design of the framework has a focus on sustainability, including by utilising existing systems, processes, and resourcing. More specifically, it is envisaged that the framework will seek to incorporate DCC’s Emissions Management and Reduction Plan 2022 and Zero Carbon Plan 2023.

SUMMARY OF CONSIDERATIONS

Zero Carbon

There is potential for climate resilience actions resulting from the framework to both increase emissions (e.g. through creation of hard infrastructure) or reduce emissions (e.g. through nature-based solutions), but that could not be determined until adaptation planning identified the preferred interventions and those were then designed. Opportunities to reduce emissions could include factoring emissions into the assessment criteria for different climate adaptation options.

LTP/Annual Plan / Financial Strategy /Infrastructure Strategy

Subject to Council decisions, staff will undertake further development of the framework and preferred approach to implementation, reflecting this work in advice and budgets for the long-term plan (2025-2033) presented to Councils in February 2025. Potential resourcing requirements are otherwise described in the report.

Financial considerations

No budget has been provided for in the 9 year plan for the development of a citywide climate resilience framework. Two of the options require additional resource to be added to the budget.

Significance

This issue is considered high in terms of the Council’s Significance and Engagement Policy. Community engagement will be a central element of the citywide climate adaptation framework, and engagement is factored into the assessment of options presented in the report.

Engagement – external

Development of the proposed citywide climate adaptation framework and drafting of this report has included engagement with staff across ORC commonly involved in climate adaptation work, including those actively involved in South Dunedin Future. Initial discussions have also occurred with Aukaha in relation to anticipated mana whenua interest and engagement in climate adaptation mahi.

Engagement - internal

Development of the proposed citywide climate adaptation framework and drafting of this report has included engagement with the following internal teams: City Development; 3 Waters; Transport; Parks & Recreation; Zero Carbon; Building Services.

Risks: Legal / Health and Safety etc.

Work is ongoing to identify and understand Council’s climate adaptation-related risks and potential mitigations.

Conflict of Interest

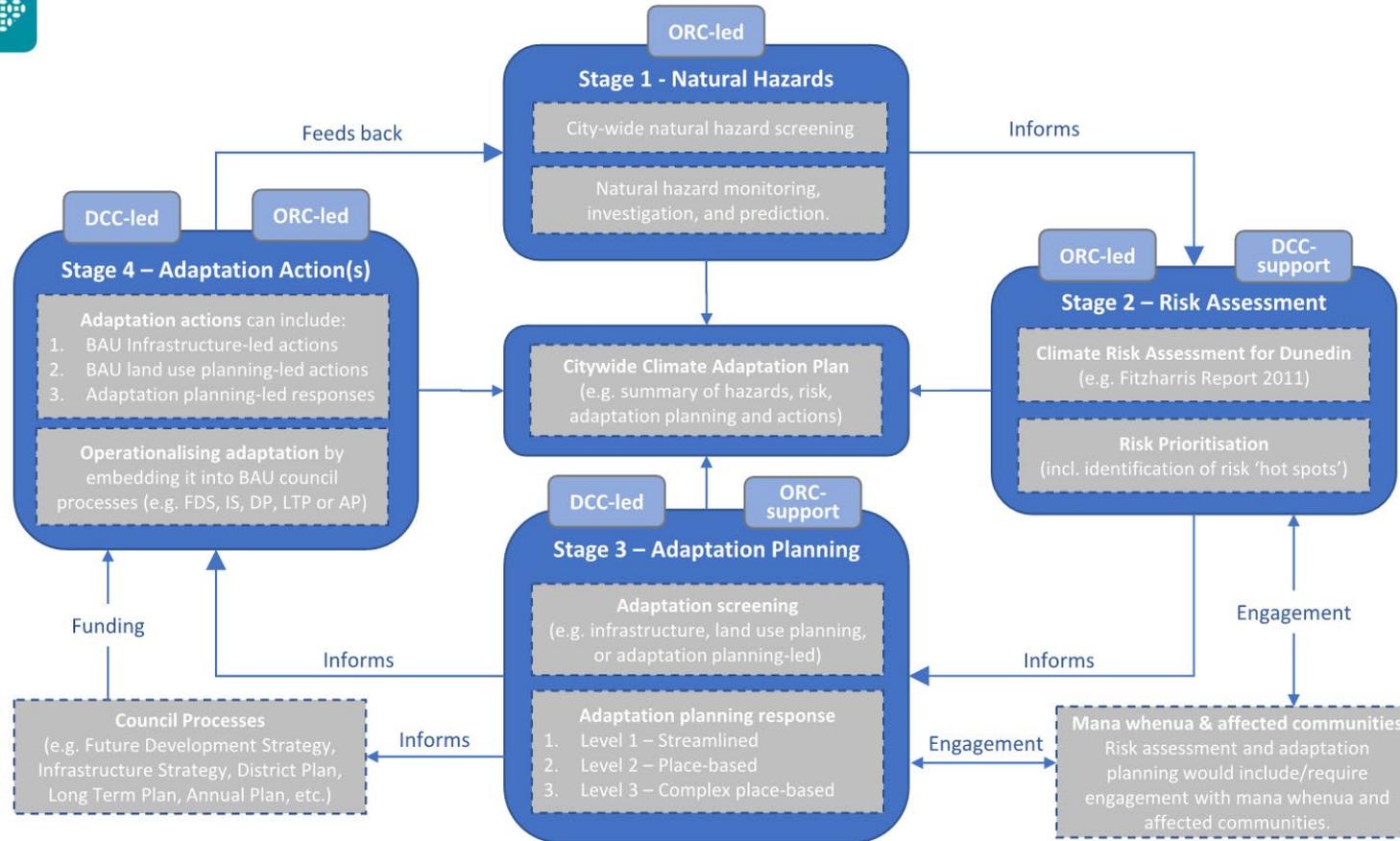
No conflict of interest have been identified.

Community Boards

Climate change, resilience, and adaptation are of interest to all Community Boards. Community Boards will be key contributors to the design and implementation of a citywide climate adaptation.

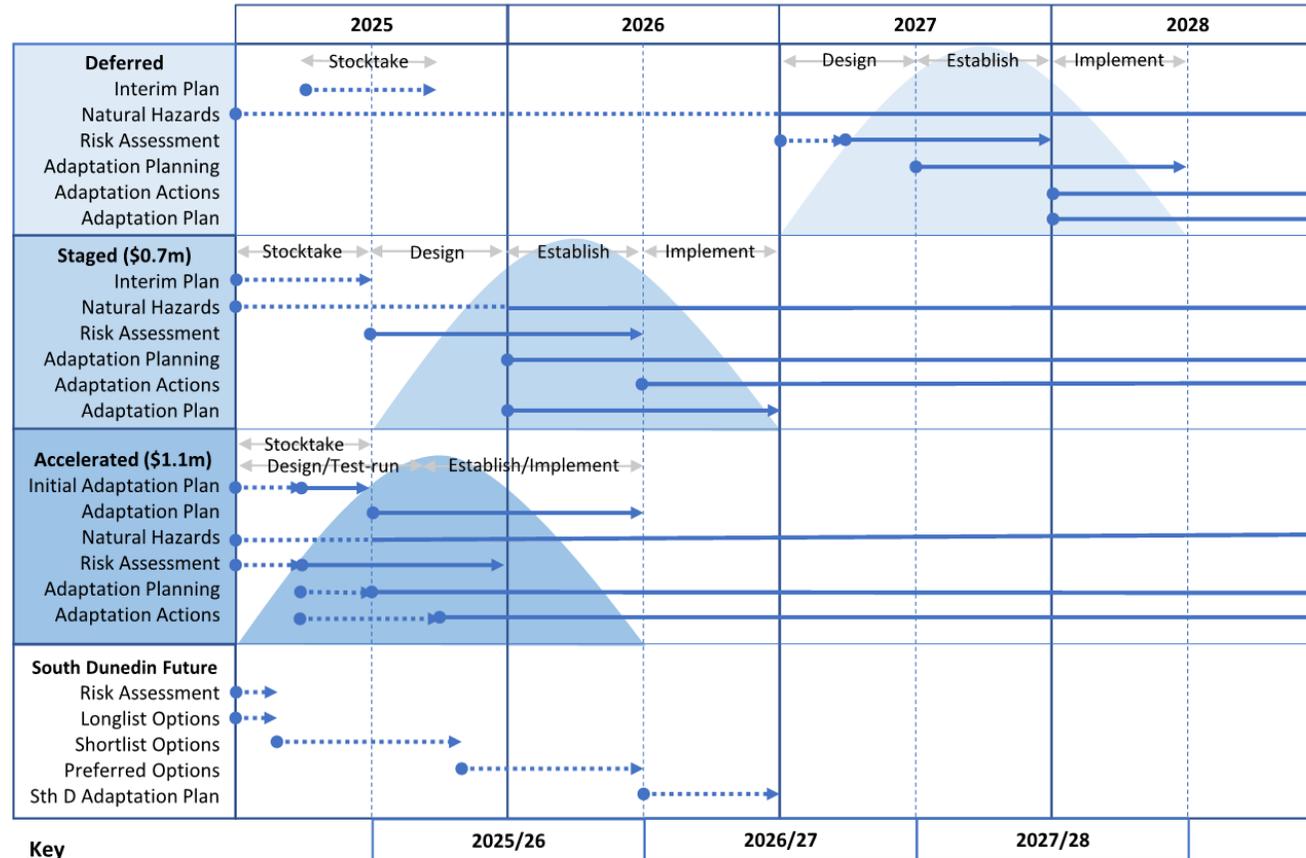
Citywide Climate Resilience Framework

Framework Graphic



Citywide Climate Resilience Framework

Implementation Options - Schedule



- Key**
- Existing resources
 - New/additional resources
 - Bulk of effort/resource to design, establish, and implement framework

