EnviroStrat
Impact Investment Project Development

PREPARED FOR TE URU KAHIKA

Who Pays to Adapt:

Mapping the Adaptation Finance Gap in Aotearoa New Zealand

October 2026



Photo: Pexels, Parth Patel

1. Report Summary

This summary draws on a desktop review of 216 council documents (235 costed budget lines), 13 interviews and a sector survey, carried out for Te Uru Kahika between June and October 2026. All figures are budgets in current plans, not actual spend. In the context of this report, climate adaptation refers to activities aligning with the definition of adaptation as the process of adjustment to actual or expected climate change and its effects.

Across the 24 councils analysed (11 regional, 5 unitary, 2 city and 6 district councils, selected for a mix of geography and size), $10.9 billion of adaptation-relevant spend is budgeted. Councils' estimates of long-term adaptation-adjacent infrastructure need total $15–$84 billion across the same 24 councils. This is a floor, as councils acknowledge material uncosted elements, and it cannot be set directly against budgets as it covers a different longer-term scope.

The four headline figures below summarise the scale of the issue: what councils have budgeted, how much of that falls onto ratepayers, how much relies on uncertain funding, and how much need councils themselves have identified.

$10.9b
adaptation-relevant spend budgeted across 24 councils

71%
of budgeted spend funded from rates

23%
of budget line items flagged at risk

$15–$84b
adaptation need identified by the 24 councils

What the budgets tell us

Four findings stand out from the analysis of the 24 councils' budgets.

Rates carry the load. Of the $10.9 billion of recorded adaptation spend, $7.7 billion (71%) is funded from rates: 40% from targeted rates and 31% from general rates. Crown funding is $3.1 billion (28%), and the remaining ~$0.1 billion (1%) comes from fees, developer contributions and reserves. Separately, $4.7 billion (43%) of the total is debt-financed, serviced by rates. Two thirds sits with one council for its transport resilience programme and 2023 weather-event recovery. Five of the 24 councils record no Crown funding at all. Central funding follows disaster events.

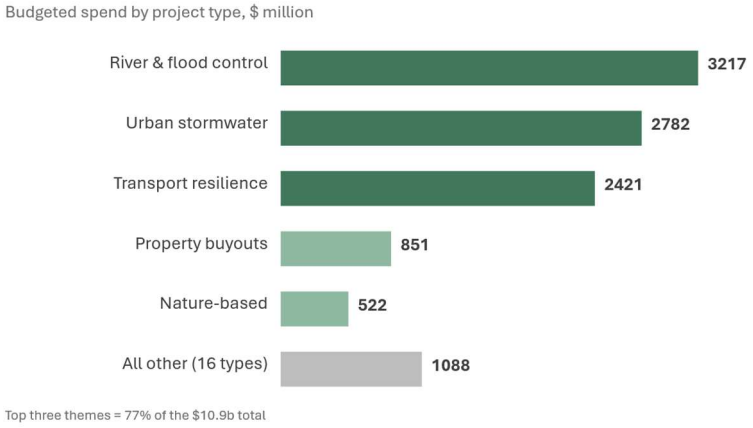
Most spend goes to protecting and accommodating existing assets. Over three-quarters goes to river and flood control, urban stormwater and transport resilience. Retreat spend is almost entirely post-event buyouts, rather than proactive relocation. The right mix of responses is place-based, and most places will need several in combination.

Plans are not yet consistently translating into funded delivery. Planning capability has grown, but the step from an approved plan to costed, funded works has not kept pace. Rates capping, debt limits, unclear accountability and the absence of a national funding framework leave planned actions waiting for a future funding round.

Some budgets have been flagged as a risk. 54 of the 235 budget lines (23%) rely on funding that councils note is uncertain. Unconfirmed external co-funding, mostly from the Crown, is the largest driver, followed by affordability limits and depreciation that is not fully funded.

Where the money goes

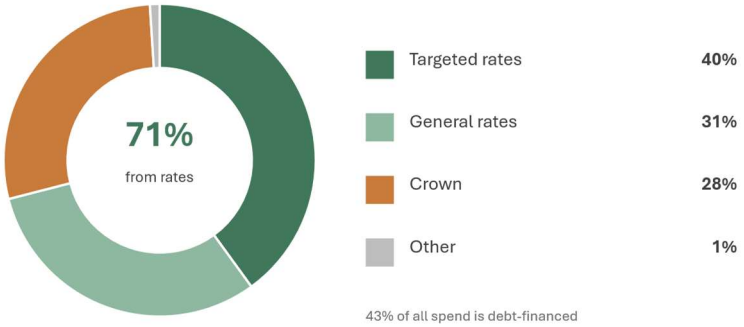
When breaking the $10.9 billion down by project type, three themes account for 77% of the total: river and flood control ($3.2 billion), urban stormwater ($2.8 billion) and transport resilience ($2.4 billion). Property buyouts ($851 million) are almost entirely post-event, compared with around $3 million for proactive relocation, and nature-based solutions account for $522 million.



Who pays

The chart below shows how that spend is funded. Rates cover 71%, split between targeted rates (40%) and general rates (31%). The Crown contributes 28%, and all other sources around 1%. Debt is a way of financing these sources rather than a separate source: 43% of spend is debt-financed, with repayments falling mostly on rates.

Share of budgeted spend by funding source



What's hardest to fund

Some adaptation responses are harder to fund than others. The gaps cluster in the areas below, drawn from budget lines where councils acknowledge a shortfall or flag funding as uncertain.

Delivering plans	Renewals and Upkeep	Proactive measures
Plan to works Plans and investigations are often funded, while the works they recommend are not yet costed.	**Rates-funded** Renewals are met from rates each year, and pressure often shows up as deferral.	**Post-event** Funding is mostly available after an event, including for relocation, so exposed areas not yet affected receive less.

What needs to happen

The thirteen recommendations below build on the common settings, grouped by central government, councils, and local government sector bodies. Aligning the many adaptation-related policies and Acts that shape council mandates, including the work MCERT now leads, and building capability across the sector are themes running across all groups.

Common adaptation settings: The foundation for everything else. Defines adaptation, draws boundaries and clarifies roles

Central government	Councils	Local Government Sector Bodies
R1 Standing national adaptation fund	R6 Tag adaptation spend now	R11 Contribute the dataset to national monitoring
R2 Funding pathways where none exist	R7 Disclose the cost of delay	R12 Undertake costing pilots with councils
R3 Rebalance toward risk reduction	R8 Build adaptation into renewals	R13 Capability building
R4 Endorsed method to value benefits	R9 Make funding risk visible	
R5 Dedicated Māori adaptation funding	R10 Test insurance and reserves	

Contents

Chapters

1. Report Summary 2
Document Control 3
Acknowledgments 3
Terms and Acronyms 3
Disclaimer 4
2. Introduction 5
2.1 Document Purpose 5
2.2 Background 5
2.3 Methodology 6
3. What Do the Budgets Tell Us? 8
3.1 Planning and Delivery 8
3.2 Funding Sources 10
3.3 Balancing the Budget 12
3.4 Long-Term Need 13
3.5 Hardest to Fund 14
3.6 Evidence Gaps 15
3.7 The Role of Insurance 15
3.8 Cost-Sharing 16
3.9 Mandates & Definitions 16
3.10 Beneficiary Pays 17
3.11 Collaboration 17
4. Discussion 18
4.1 Council Tools 18
4.2 Central Government Interface 21
5. Recommendations 24
5.1 Common and Agreed Adaptation Settings 24
5.2 Central Government 25
5.3 Councils 25
5.4 Local Government Sector Bodies 26
Appendix A: Desktop Research Plans 28
Appendix B: Interview List 31
Appendix C: Methodology 32
Appendix D: Local Government Planning Landscape 38

Figures

Figure 1: Councils included in the research 6
Figure 2: Adaptation budget by project type 10
Figure 3: Adaptation budget by funding source 10
Figure 4: Funding uncertainty, by driver (share of lines) 13
Figure 5: New Zealand Local Government Plans Analysed and Future Landscape 38

Tables

Table 1: Important terms 3
Table 2: Main acronyms 4
Table 3: Adaptation plan status and embedding in Long-Term Plans 8
Table 4: Organisations interviewed 31
Table 5: Classification of direct and indirect adaptation spending 33
Table 6: Classification of planning and implementation spending 33
Table 7: Classification of proactive and reactive spending 34
Table 8: Interview themes and pain points 36

Document Control

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Terms and Acronyms

Table 1: Important terms

Term	Definition
Adaptation finance gap	The difference between the estimated cost of meeting adaptation needs and the funding that is available or committed to meet them.
Adaptation needs	Defined by the IPCC as the "circumstance requiring action to ensure safety of populations and security of assets in response to climate impacts".
Annual Average Damage (AAD)	The expected average cost of hazard damage per year. Used in this report to express the cost absorbed while adaptation investment is deferred.
Beneficiary pays	A funding principle where those who benefit from an intervention contribute to its cost. Considered alongside exacerbator pays, public pays and ability to pay.
Budget tagging	Identifying and labelling budget lines that contribute to adaptation, linking adaptation needs to funding sources.
Deferred investment	Adaptation works that are acknowledged but pushed into later years (e.g. years 11 to 30 of an Infrastructure Strategy), carrying a long-term cost of delay.
Development levy	A new cost-sharing mechanism replacing development contributions, introduced under the Going for Housing Growth programme.
Direct / Indirect spend	Direct spend is explicitly labelled by councils as climate-related; indirect spend serves adaptation or resilience but sits under traditional operational categories (e.g. stormwater upgrades, flood schemes).
Dynamic Adaptive Pathways Planning (DAPP)	A planning approach that sequences adaptation decisions over time, with pre-agreed triggers signalling when the next action is needed, to manage deep uncertainty.
Expenditure tracking	Monitoring actual adaptation spend against budgets.
General rates	Property rates levied across all ratepayers to fund council activities of general benefit.
Managed retreat	The planned relocation of people, assets and activities away from areas of high or increasing hazard risk, including buyouts and extinguishing use rights.
PARA framework	Classification of adaptation actions into Protect, Accommodate, Retreat and Avoid, used in this report to categorise adaptation spend.
Planning / Implementation spend	Planning covers knowledge-gathering and strategy (risk assessments, strategy development, engagement);

Term	Definition
	implementation covers capital expenditure on physical works.
Proactive / Reactive spend	Proactive spend funds risk reduction ahead of a hazard event; reactive spend funds recovery, repair and response after an event.
Prudent deficit	A provision in the Local Government Act 2002 allowing a council to set an unbalanced budget where it formally resolves that doing so is financially prudent.
Rio Markers	An OECD-DAC scoring system (0/1/2) indicating whether climate adaptation is a principal, significant or non-targeted objective of an activity.
Targeted rates	Rates levied on a defined group of ratepayers, typically those who benefit from a specific service or work (e.g. a flood protection scheme).
Taituarā	A New Zealand membership network for professionals working in and for local government.

Table 2: Main acronyms

Acronym	Explanation
AAD	Annual Average Damage
ALGA	Australian Local Government Association
BAU	Business as Usual
BIOFIN	Biodiversity Finance Initiative
BOPLASS	Bay of Plenty Local Authority Shared Services
CAPEX	Capital Expenditure
CBA	Cost-Benefit Analysis
CBAx	Treasury's Cost-Benefit Analysis tool
CDEM	Civil Defence Emergency Management
CEA	Cost-Effectiveness Analysis
DAPP	Dynamic Adaptive Pathways Planning
ES	Environment Southland
IPCC	Intergovernmental Panel on Climate Change
LASS	Local Authority Shared Services
LGA	Local Government Act 2002
LGFA	Local Government Funding Agency
LGNZ	Local Government New Zealand
LTP	Long-Term Plan
MBIE	Ministry of Business, Innovation and Employment
MCDA	Multi-Criteria Decision Analysis
MCERT	Ministry for Cities, Environment, Regions and Transport
MfE	Ministry for the Environment
NbS	Nature-based Solutions
NZTA	New Zealand Transport Agency (Waka Kotahi)
OECD	Organisation for Economic Co-operation and Development
OECD-DAC	OECD Development Assistance Committee
OPEX	Operating Expenditure
PARA	Protect, Accommodate, Retreat, Avoid
RMA	Resource Management Act 1991
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

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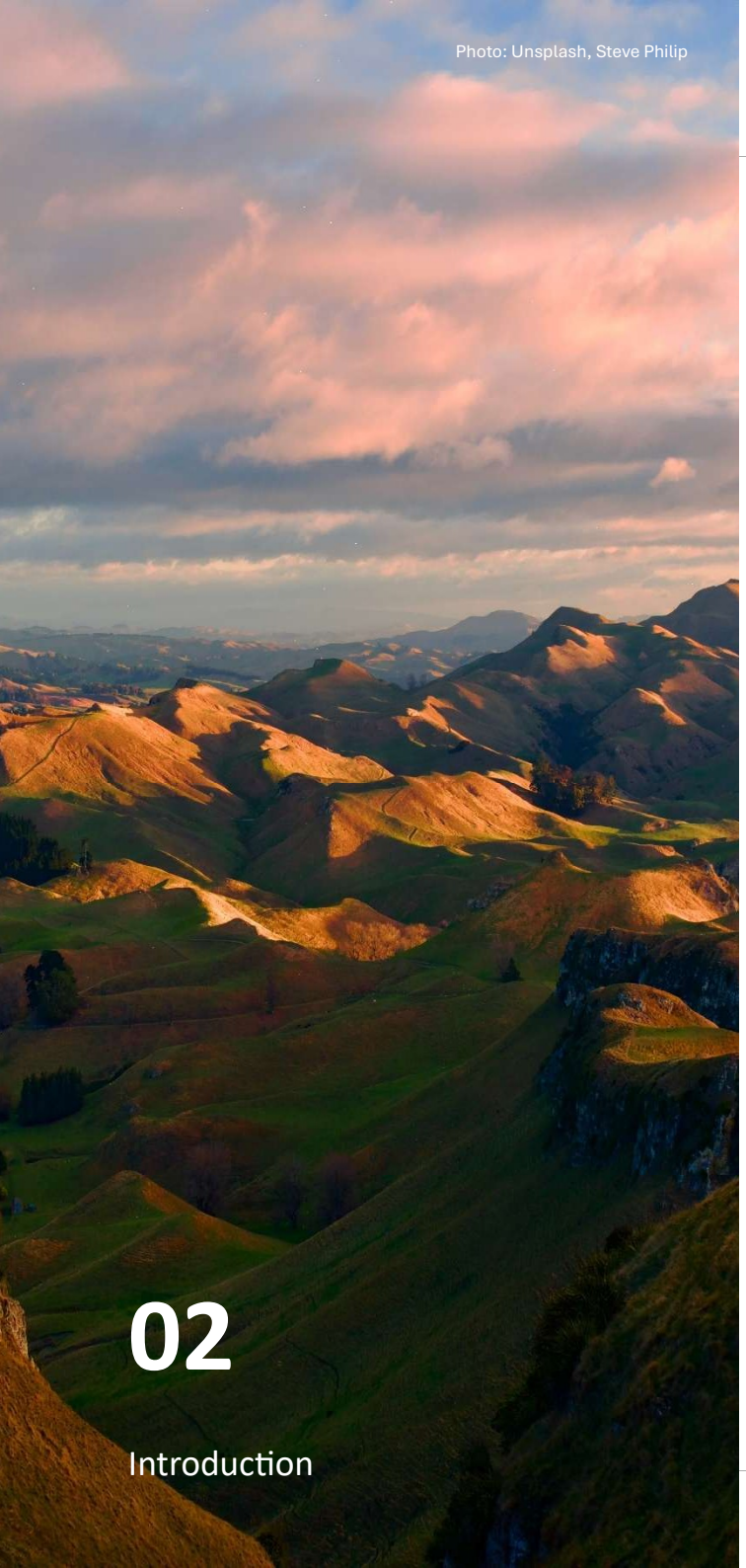

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02

Introduction

2. Introduction

2.1 Document Purpose

This paper is the key deliverable of the Climate Adaptation Finance project, commissioned by Te Uru Kahika, the collective body for New Zealand's regional and unitary councils, on behalf of a coalition of participating councils.

The project ran from June to October 2026. It consolidated and deepened the evidence base on climate adaptation funding and financing in Aotearoa New Zealand through a desktop review of council documents (mostly Long-Term Plans), thirteen semi-structured interviews with councils, sector and central government stakeholders, a sector survey distributed through Te Uru Kahika and LGNZ networks, and a multi-stakeholder roundtable to test emerging findings. Outputs were timed for September to October 2026 to inform the next Long-Term Plan (LTP) cycle.

The purpose of this paper is to synthesise that evidence into a shared understanding of the climate adaptation finance gap facing local government, framed as a financial risk management challenge, and to give councils practical and actionable material for their LTP processes. The research focuses on council budgets and funding sources. It draws on engagement with iwi representatives and highlights where Māori are disproportionately affected, but it is not a comprehensive assessment of mana whenua adaptation needs, priorities or funding pathways.

This paper asks the practical question of how much councils are currently planning to spend on adaptation, how that spend is funded, and how it compares with what is needed. To answer it, this research quantifies adaptation-related budgets across 24 regional, unitary, city and district councils, sets out the scale of need councils themselves acknowledge, and identifies the budgets at risk, the structural barriers that constrain council funding, and sets out the tools and central government settings that could help councils plan and fund adaptation more consistently. It provides a point-in-time evidence base to inform the next Long-Term Plan cycle, rather than a complete national cost of adaptation.

2.2 Background

As climate-related hazards intensify and exposure grows in Aotearoa New Zealand, adaptation is becoming increasingly urgent, representing a significant fiscal risk management challenge for councils.

At the national level, 97% of central government spending on climate and natural hazards goes to reactive response and recovery, leaving 3% to proactive risk reduction and resilience measures (Climate Change Commission, 2026a).

Planning and investment in risk reduction and effective adaptation by central and local government can reduce the effects of climate impacts on communities. In its absence, there is a risk of higher long-term costs, withdrawal of affordable and accessible insurance, and further entrenchment and exacerbation of existing social, economic, and cultural inequities.

In response, many councils have begun to develop local plans to address climate risks. Long-Term Plans (2024-2034), alongside climate-specific strategies, infrastructure plans, and funding strategies, detail councils' intended approaches to managing climate impacts and avoiding future risk. With central government funding frameworks predominantly reactive, responsibility largely falls on individual councils to create their own financial mechanisms to implement adaptation plans. Local councils, with their local presence and contextual knowledge, are particularly well placed to deliver the place-based adaptation required by local communities (ALGA, 2025); but local efforts occur in a context characterised by well-documented financial constraints, limited administrative capacity in some regions, and a lack of central guidance to support long-term adaptation funding and financing.

2.3 Methodology

This report draws on a desktop review of council plans (and related budgets), semi-structured interviews and an online survey. This section summarises how the budget figures in Section 3 were produced. The full methodology, including classification rules and limitations, is set out in Appendix C.

2.3.1 Desktop research and the dataset

The desktop research covered 24 councils including 11 regional councils, 5 unitary authorities, 2 city councils and 6 district councils, with district councils selected for geographic diversity and a range of population sizes (Figure 1). From a pool of 216 publicly available documents (listed in Appendix A), mainly Long-Term Plans, Annual Plans and standalone climate plans, NotebookLM (an AI research assistant) was used to extract budget lines with an identifiable climate adaptation benefit. Each figure and funding source was checked against the

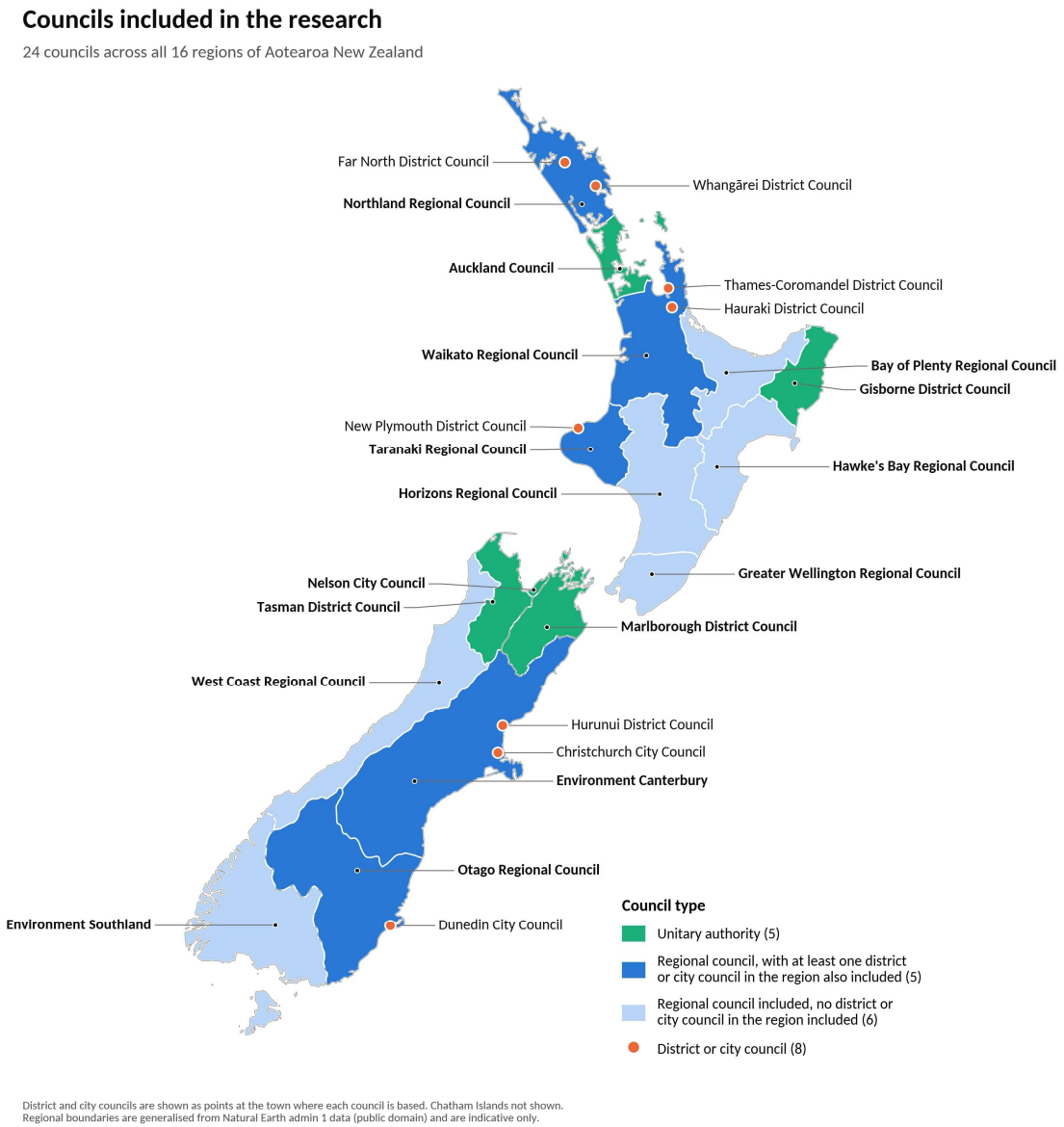


Figure 1: Councils included in the research

source plan, and eight councils were invited to review their line items, of which five provided feedback. The result is a dataset of 235 costed line items totalling approximately $10.9 billion.

How budgets were classified

Councils report adaptation in different ways, therefore each line item was classified consistently to ensure the figures were comparable:

Direct or indirect: whether the item sits under an explicit climate, adaptation or resilience heading, or is embedded in wider programmes such as flood protection, stormwater, transport or emergency management.

Planning or implementation: knowledge-gathering, strategy and engagement work, as opposed to physical works and delivery.

Proactive or reactive: reducing risk before an event, as opposed to response and recovery after one.

Response type: Protect, Accommodate, Retreat or Avoid (the PARA framework).

Funding source: as disclosed in the plan or, where not disclosed, inferred from the council's Revenue and Financing Policy, with debt assumed for long-term capital projects.

Budgets at risk and adaptation need

Budgets were flagged as at risk where plans, or their significant forecasting assumptions, showed that funding was conditional, unconfirmed (for example, assumed Crown co-funding), deferred or not yet costed. Separately, councils' own statements of long-term infrastructure adaptation need were collected, mostly from 30-year Infrastructure Strategies.

Reading the numbers

All figures are budgets outlined in current council plans, not actual spend, and they cover programmes of different lengths, so totals are a sum of identified commitments rather than an annual rate. Because extraction relied on published documents, the dataset is likely to understate adaptation spend, particularly indirect spend embedded in wider programmes. Needs figures are councils' own disclosures and vary widely in scope and method, so they indicate the scale of need councils acknowledge themselves.

2.3.2 Interviews and survey

Thirteen semi-structured interviews with council staff and sector stakeholders (Appendix B) and an online survey (13 responses from 12 councils) tested the desktop findings and added context on barriers and practice.

2.3.3 Assumptions and limitations

Key limitations are:

Data source: Figures come from published plans, extracted with an AI tool (NotebookLM). Some relevant items are likely to have been missed.
Validation: Eight councils were invited to review their line items and five provided feedback. Figures for other councils have not been confirmed by them.
Defining adaptation: Some projects also deliver benefits other than adaptation, such as natural hazard management or routine renewal, but have been included in full.
Council roles: Regional and territorial councils have different functions, so a missing type of line item may reflect a council's role rather than a gap.
Classification: Categories were developed for this research and do not follow council groups of activities or core services.
Needs estimate: Councils' stated needs exclude elements they acknowledge are uncosted, so the identified range is a floor, not a full estimate.
Mana whenua: Iwi and hapū activity funded outside council budgets was not captured.
Sector-level findings: The analysis describes patterns across the sector, not the performance of individual councils.



03

What Do the Budgets Tell Us?

Photo: Pixabay, Bernd Hildebrandt

3. What Do the Budgets Tell Us?

3.1 Planning and Delivery

Adaptation planning maturity is ahead of costed adaptation delivery. This is a common theme across most interviews and is reflected in the desktop research analysing councils' plans and strategies.

Table 3: Adaptation plan status and embedding in Long-Term Plans

Adaptation plan status and LTP embedding

Adaptation plan status	Embedded	Transitioning	Not embedded	Total
Yes, adopted	1	2	3	6
Yes, local/place-based only	1	1	1	3
Integrated into climate plan	1	4	2	7
Integrated, standalone plan developing	2	3	0	5
Developing	1	1	0	2
None	0	0	1	1
Total	**6**	**11**	**7**	**24**

Table 3 shows the spread of approaches to adaptation planning. Half of the analysed councils (12 of 24) have included adaptation considerations to some degree into a general climate plan with some developing a standalone one. This is followed by councils already having a standalone plan for the region/district or for specific areas.

Councils that have integrated adaptation into a general climate plan are mostly either embedding adaptation into their LTP or are transitioning towards doing so (Appendix C.2.5). Councils with a standalone adaptation plan are more evenly spread, although the largest share (4 of 9) are in the 'Not embedded' category.

The survey results also show a split in adaptation planning maturity across councils. The largest single group, at 33.3% of respondents, has adaptation referenced in existing plans but without a standalone adaptation plan of its own which aligns with Table 3. A further 16.7% have developed standalone plans for specific areas or communities, and the remaining half are spread one council at a time across six other stages, from no formal plan in place through to an established adaptation programme. No single stage of maturity comes close to describing a majority of councils.

3.1.1 Planning vs Implementation Budgets

Survey results on how councils split planning and implementation budgets were more one-sided than those on planning maturity. A majority of respondents, 58.3%, said they do not track the split between planning spend and implementation spend at all, suggesting many councils are not currently able to identify how much of their adaptation budget produces plans versus how much produces action on the ground. Over half of respondents also indicated they do not know or do not assess the percentage of

adaptation actions that have dedicated budgets allocated. This may because of adaptation being included in other projects such as infrastructure renewals.

The dataset gives a more detailed picture. It captures 235 costed line items across 24 councils, totalling approximately $10.9 billion, covering projects identified as carrying climate adaptation benefits. For larger infrastructure and CAPEX projects, adaptation benefits are bundled with renewal, growth and level-of-service objectives, and the adaptation share is effectively impossible to isolate. These items were therefore included in full to give a realistic picture of the scale of adaptation-relevant expenditure. The $10.9 billion should be read as adaptation-relevant, not adaptation-attributable. (See Appendix C.5.)

Items identified as implementation actions account for $6.6 billion (144 lines, 61% of budgeted spend), and a further $3.8 billion sits in programmes spanning both planning and implementation, dominated by Auckland's $2.3 billion transport network resilience and adaptation work. Planning-phase items total just $475 million, 4% of budgeted spend across 56 separate lines, averaging around $8.5 million each.

Each line item was also coded by where it was found in the council's own documents. ‘Direct’ where it sat beneath a climate heading or in a climate section of the plan, ‘Indirect’ where it sat elsewhere, typically in infrastructure, flood protection or emergency management chapters. About 70% of budgeted spend, $7.63 billion across 128 lines, was found under a climate heading, and most of that is delivery rather than planning. Only $198 million, 2.6% of the directly coded total, is purely planning-phase work. A further $3.6 billion sits in lines that combine planning and implementation. The remaining $3.2 billion, just under a third of the total, sits outside any climate section and would be invisible to a search of climate sections alone. Documents were searched using NotebookLM across the 216 source documents listed in the Dataset, looking for adaptation relevance rather than climate labelling alone. Even so, line items beneath an explicit climate, adaptation or resilience heading carry a clear search signal, while those embedded in flood protection, infrastructure, transport or emergency management chapters were captured only where the description or supporting text made the adaptation relevance clear. The ‘Indirect’ category is therefore unlikely to be exhaustive, and the $3.2 billion should be read as a floor rather than a full estimate.

How much is captured depends almost entirely on how a council structures its plan rather than on what it is spending. Any national estimate built from climate-labelled budget lines alone would understate actual expenditure.

3.1.1.1 Barriers to Implementation

The desktop research found budget lines that fund the plan or strategy itself, while the delivery action that follows is neither costed nor funded. Some councils acknowledge in their own documents that a way to fund the actions arising from their adaptation plans has not yet been identified. This may mean that funding has not been secured, or that the council has not yet moved from planning to delivery.

Adaptation planning capability has grown over the last five years, but the step from an approved plan into funded delivery has not kept pace, leaving an uncosted gap. The reasons for this include:

Why plans are not turning into funded delivery

Funding

- Insufficient council revenue and rate-capping pressure
- No revenue stream to repay borrowing

Priorities and capacity

- Capacity diverted to competing priorities
- Adaptation not strategically prioritised
- Competing political priorities and varying community acceptance

Governance and policy

- Unclear accountability for delivery
- Definitional ambiguity between adaptation and BAU resilience work
- LTP cycles misaligned with trigger-based adaptation logic
- Multiple national policy settings with limited alignment

The survey responses on unfunded projects show a consistent pattern regardless of council size or region. Several respondents named specific projects that are already identified in their Long-Term Plan but still awaiting a funding decision, a spatial planning project, a coastal adaptation pathways project, and the second stage of a community adaptation programme among them, all pushed forward to a future LTP funding round.

One response stated three comprehensive adaptation plans were developed over five years, and none have progressed to implementation due to lack of funding, with the only flood protection works built, completed only because of one-off, disaster-linked central

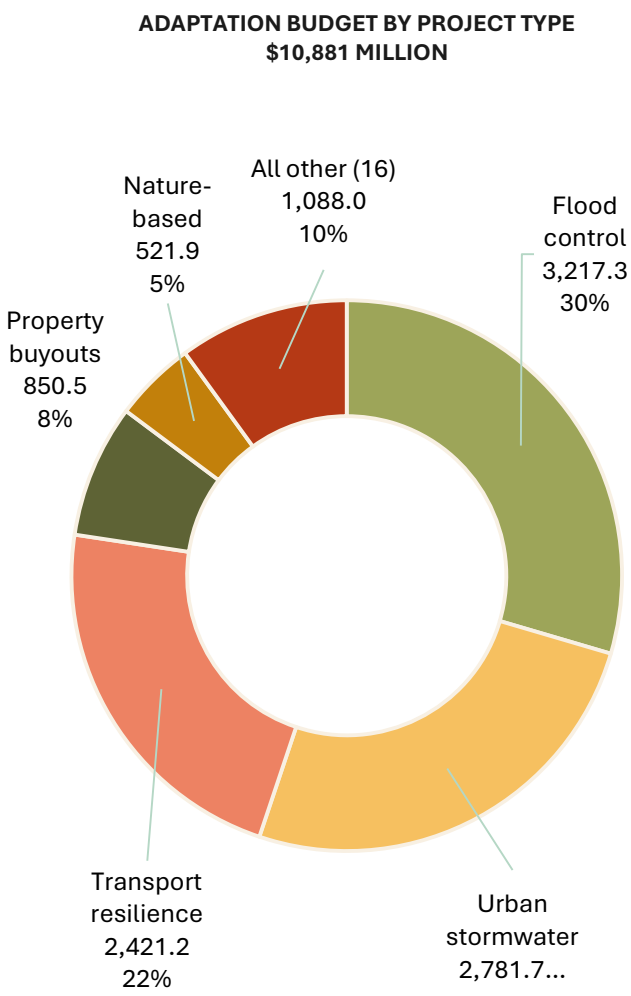


Figure 2: Adaptation budget by project type

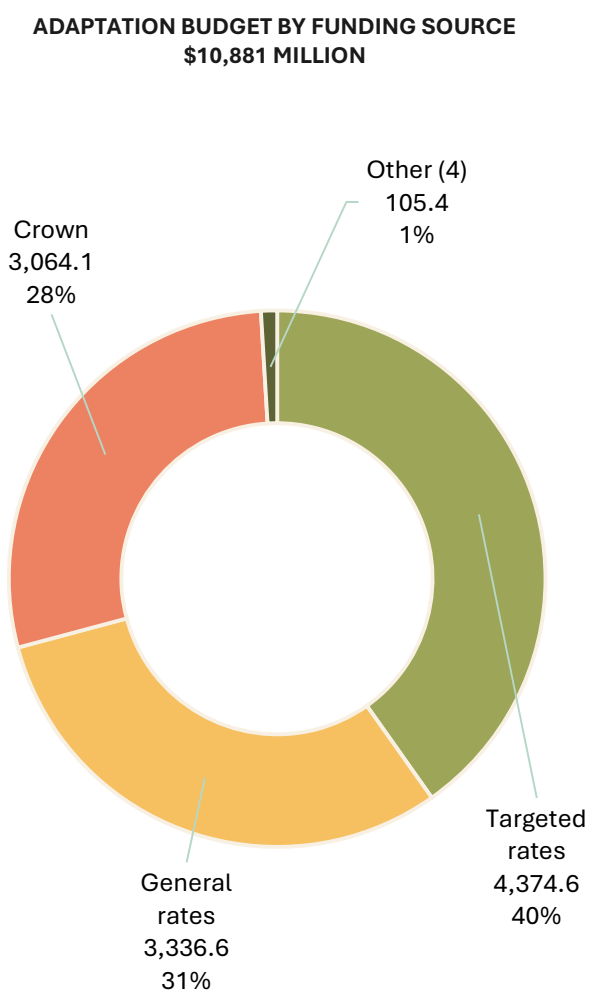


Figure 3: Adaptation budget by funding source

government funding rather than any standing local mechanism. Another response describes that of several adaptation-linked projects on the table, only the most technically straightforward is currently able to proceed. The rest, including a land transition project and a wider community adaptation project, still need to be finalised, with adequate financing expected to be a challenge for every one of them. A further response reports that adaptation-relevant work is currently handled through business-as-usual budgets rather than as identified projects at all.

Overall, the current stage reflects New Zealand's evolving policy environment, in which interviewees identified the absence of a clear legal mandate for adaptation as a foundational barrier. An array of documents such as the National Adaptation Plan, the National Adaptation Framework, and the Climate strategy are not yet fully aligned into a single, consistent national approach, which makes it harder to translate national direction into local delivery. New Zealand's local-government legislative and funding architecture is being rewritten following loosely coordinated tracks, including the Local Government Act's own purpose and core-services definition, resource-management/spatial-planning reform, water-services separation, rates capping, and the Climate Change Response Act's adaptation-planning mandate.

3.2 Funding Sources

This section looks at what the identified budget is spent on and how it is funded. Just over three quarters of the identified budget covers three key themes: river & flood control schemes, urban stormwater and transport resilience (Figure 2). The remaining quarter includes property buyouts, nature-based interventions and 16 other minor categories such as catchment plans, and wastewater. Viewed through

the Protect, Accommodate, Retreat and Avoid (PARA) framework (see Appendix C), most spend sits under Protect (river and flood control, urban stormwater) and Accommodate (transport network resilience). Retreat is a small share and almost entirely made up of post-event buyouts. No costed Avoid lines were identified because avoidance is delivered mainly through planning rules. In practice these responses are usually not alternatives: most places will need a combination that changes over time, and the right mix depends on the hazard, the asset type and the community.

In the dataset, regional councils focus mostly on flood protection, whatever their size. Bay of Plenty, Environment Southland, Horizons, Waikato and West Coast regional councils put the identified adaptation spend into mostly river and flood control schemes. This holds for large and small regions alike and reflects regional councils' statutory flood-protection role and existing scheme assets.

Unitary and larger city councils show a broader mix. Councils responsible for both regional and local functions, or for large urban networks, spread their spend more widely. Because these councils manage transport and three waters networks as well as flood assets, more of their investment goes into making infrastructure resilient rather than defending it.

Recent disasters also shape the mix. Councils hit by recent severe weather, such as Auckland, Gisborne, Hawke's Bay and Nelson, are the only ones with material retreat spend, and that spend is almost entirely comprised of post-event property buyouts. Proactive managed relocation totals only around $3 million nationally, mainly Hurunui's Amberley Beach relocation.

The funding mechanisms councils use to fund adaptation projects are general rates, targeted rates, LGFA or other debt (serviced by rates), and central government grants.

3.2.1 Rates

Rates carry the majority of the burden. Of the $10.9 billion of adaptation-relevant expenditure recorded across the 24 councils, $7.7 billion (71%) is funded from rates, with 40% from targeted rates and 31% from general rates (Figure 3). Some $4.7 billion, 43.2% of the total, is debt-financed, with repayment and servicing costs to be met from rates.

Targeted rates concentrate the cost of flood and coastal protection on identifiable groups of properties, typically those within a scheme area, although many councils blend in a general-rate share. Because small communities can face high per-property costs, the beneficiary-pays model creates affordability pressures.

These shares are shares of dollars, not of projects, and they rest on an attribution step. Where a council named a single funding source, the whole line was assigned to it. Where a council disclosed proportions, those proportions were used. Where several sources were named without proportions, the split was assumed with usually an even split which affects 20 line items worth $383 million, or 3.5% of the total. The basis for every split is recorded against the individual line, so the assumed cases can be isolated or re-weighted. The pattern is not sensitive to these assumptions.

3.2.2 Central Government Funding

Central government funding is modest relative to rates and highly concentrated. About two-thirds of all Crown funding in the dataset ($2.0 billion of $3.1 billion) sits with Auckland Council for its transport network resilience programme and the 2023 storm recovery package. The remaining $1.1 billion is spread across 18 of the other 23 councils, with around three-quarters going to five councils, mostly for flood protection schemes. Five councils record no Crown co-funding at all.

Reliance on it also varies. Four councils depend on central government for between 45% and 85% of their budgeted adaptation expenditure; at the other extreme, five of the 24 record no central government funding for adaptation at all, and a further four record less than 10%. The zero cases should be read as none disclosed or not found in the plan documents rather than none received, since grants are not always separately identified in a Long-Term Plan.

Even allowing for that, the pattern tracks disaster history rather than exposure or need, where the councils receiving substantial Crown funding are overwhelmingly those that have already experienced a declared event. There is no standing, needs-based national funding stream, and councils that have not yet been hit are funding adaptation almost entirely from their own balance sheets.

3.2.3 Existing mechanisms and their limits

The current funding mechanisms include a range of sources such as the National Land Transport Fund (Waka Kotahi), the Kānoa Regional Infrastructure Fund, MBIE Fund, Better Off Funding and one-off-storm-recovery packages, each with its own criteria. Finance is available but sits within debt caps and does not create additional money as it must be repaid through the same sources.

Interviewees described central government funding as fragmented, often made available at short notice and largely event-driven. Cost-sharing, backstops, and any move toward proactive funding remain undecided and deferred to the next term of government. The Climate Change Commission's Progress Report 2026 on the National Adaptation Plan echoes the same

diagnosis, stating there is currently not enough resource available to support proactive adaptation, naming funding and financing as the first of six foundational gaps, and recommending that central government establish funding and financing pathways for local adaptation and dedicated mechanisms for iwi/Māori adaptation, tied to Te Tiriti obligations.

Some policy settings add to the constraints councils face. Rates capping, combined with post-Covid cost inflation, places pressure on the same budget line that must absorb renewals, core operating costs and new adaptation capital with operating expenditure usually losing out first because it is less visible than a new capital project.

3.2.3.1 Gaps in Funding Mechanisms

The most consistent finding across interviews is that there is currently no funding mechanism for managed retreat or for extinguishing land-use rights on hazard grounds. Councils are not legally required to protect private properties, and some have actively chosen not to. Others frame it as a national gap central government is responsible for.

3.2.3.2 Financing

Only one survey respondent is currently using instruments like LGFA green bonds or sustainability-linked loans, 8 survey respondents are aware of instruments like LGFA but are not considering them, two are actively considering them for the next LTP cycle and one has not heard of such instruments before. While specific green debt tools might yet be sparingly used, general council debt reached $29.9 billion on 23/24 with some councils approaching LGFA limits, which may limit their capacity to respond to emergencies (Controller and Auditor-General, 2025a). The constraint is councils' servicing ability (revenue).

3.3 Balancing the Budget

The Local Government Act 2002 requires each council to run a 'Balanced Budget', meaning its projected operating revenues must be sufficient to meet its projected operating expenses. However, where significant climate adaptation costs exceed available funding, three legal mechanisms can be used to meet this requirement:

A. Running a Deficit

The LGA permits councils to set an unbalanced budget (run a deficit) if the council formally resolves that it is financially prudent to do so. This provision is used by several councils to only partially fund asset depreciation or to cover revenue shortfalls. For example, Environment Southland explicitly resolved not to balance its operating budget in year three of its Long-Term Plan, and Waikato Regional Council proposed an unbalanced budget for the first two years, due to funding shortfalls.

B. Using Forecasting Assumptions

To accommodate a large capital project within a balanced budget, anticipated central government co-funding that has not yet been confirmed is often included, as long as this is disclosed in the "Financial Assumptions" register. The assumption must be declared (e.g., "We assume 50% Crown funding") and the financial impact or risk if that external funding is declined or delayed noted. This is what happened with the Thames-Coromandel shoreline coastal protection programme, which Audit New Zealand ultimately flagged as an "unreasonable" assumption.

C. Deferral Beyond the 10-Year Horizon

If a council cannot balance the budget using debt or assumed grants, the final legal option is to remove the adaptation project from the 10-year Long-Term Plan. The risk gets acknowledged, and the physical works are deferred into the uncosted "Years 11 to 30" window of the 30-year Infrastructure Strategy.

3.3.1 Funding Uncertainty Drivers

To assess how much of the budgets identified rely on assumed funding, the Revenue and Financing Policies and the Assumption Reports were scanned. 54 budget line items are flagged as being at risk. The majority of this is due to unsecured external funding followed by affordability concerns and depreciation that is not fully funded.

Far North Community Engagement Plans are budgeted at $630k. Funding to start Stage One Community Adaptation Planning was secured under the 2023-2027 Long-Term Plan (a shortened plan in response to the 2022–2023 weather events). Funding for the rest of the Community Adaptation Programme is not secure and depends on the 2027–2037 Long-Term Plan. Delivery of future adaptation responses is contingent on external funding. (Adapterra, 2024; FNDC, 2020)

For the Winton Stopbank in Southland, local debt is budgeted for 25% of the cost; **Environment Southland** assumes central government will pay the remaining 75%. Deloitte issued a qualified opinion, finding this funding assumption "unreasonable" because the Crown contribution has not been confirmed. ES notes these upgrades cannot proceed without this money. ES has also formally resolved an unbalanced budget. This involves running operating deficits and drawing on reserves to limit the impact on ratepayers, which reduces its financial resilience for future climate shocks (Environment Southland, 2024).

To make new climate-resilient infrastructure (like the Westport floodwalls) affordable for current ratepayers, **West Coast Regional Council** has proposed spreading debt repayments for up to 80 years, shifting a significant share of the cost to future generations. Community consultation and feedback may reduce such repayment periods considerably.

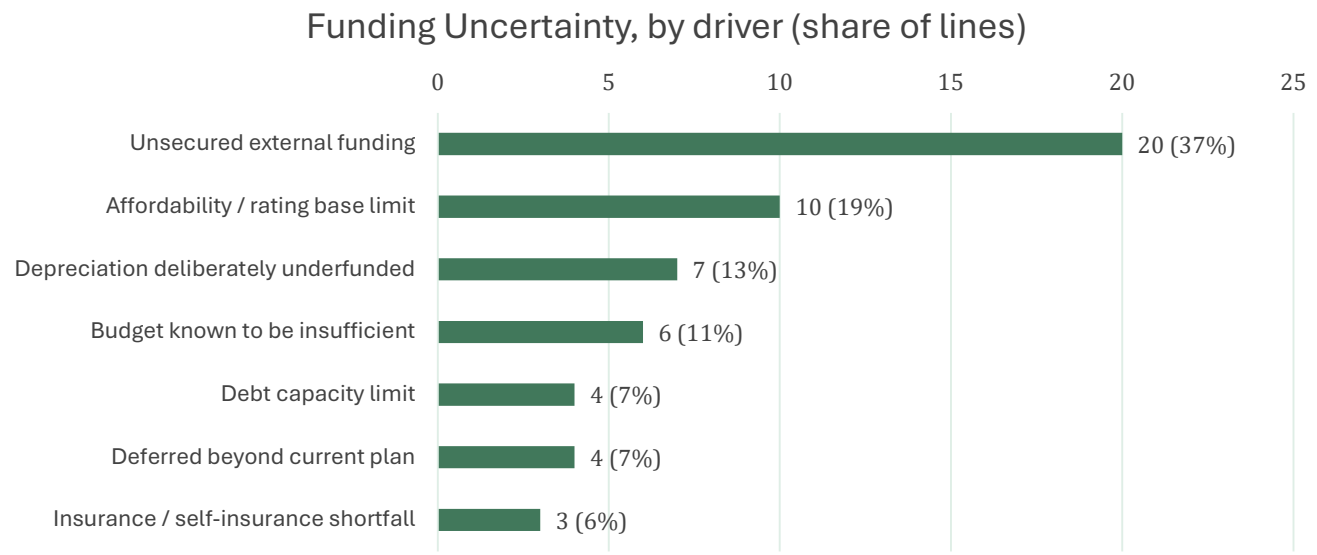


Figure 4: Funding uncertainty, by driver (share of lines)

Auditor comment: EY flagged the assumption about WCRC's ability to deliver its large capital programme as "not reasonable", citing capacity constraints (WCRC, 2024).

3.4 Long-Term Need

New Zealand's long-term financial need for climate adaptation has not yet been quantified, and not all interviewees agreed that it should be. Some regarded the exercise as a poor use of scarce resource, on the basis that current funding is self-evidently insufficient, and the priority is action rather than further measurement. Others saw a quantified gap as necessary groundwork for the business case, giving decision-makers a defensible figure to fund against.

The budget lines at risk in this report offer a glimpse into the gap between climate adaptation budgets and actual funding available. A second indication comes from the scale of need councils themselves acknowledge, although, as set out below, this cannot be set directly against budgets.

3.4.1 What councils say they need

Alongside recorded expenditure, each council's plan documents were reviewed for statements quantifying the scale of adaptation need. These statements are the councils' own assessments of what adaptation will cost, usually disclosed in the Infrastructure Strategy section or in the risk and assumptions sections of a Long-Term Plan, and usually with an explicit warning that the figure is incomplete (see Appendix C).

Across the 24 councils, the quantified need totals between $15.0 billion and $83.7 billion. The range is wide because councils quantify very differently. Some state a single baseline figure for maintaining existing

flood defences, others publish indicative cost bands spanning two orders of magnitude for decisions not yet made.

Every council in the sample that quantified a need also stated that material elements of adaptation remain uncosted, most commonly managed retreat, property buyouts, community relocation, and the physical works required beyond the current ten-year budget window. The range should therefore be read as a floor rather than a full estimate of need.

Access to Crown funding is often determined by disaster history and by institutional capacity. Money is allocated post-event or if the analytical capability and capacity exists to build the case. Need is shaped the same way. Exposed communities that have not yet been impacted, in councils without the capacity to cost their risk, might appear in this dataset with little or no need. Far North is a worked example with high coastal exposure, low deprivation-adjusted capacity, and near-zero costed need. This is a key reason why spend and need cannot be set against each other.

3.4.2 Recurring themes in what councils disclose

First, multiple regional councils record in their own plans that continuing to raise stopbanks is not a sustainable long-term response, and several are formally preparing their communities for lower levels of flood protection over time. Second, affordability has already become binding, as councils report capping annual capital financing, freezing major capital expenditure beyond the early 2030s, budgeting zero adaptation capital from year two of their plan, and describing required works in their own documents as unaffordable for ratepayers. Third, a significant share of planned work rests on central government co-funding that has not been secured; in two cases the Auditor-General issued a qualified opinion on a council's plan because the budget assumed Crown contributions of 60% and 75% respectively. Fourth, the largest costs tend to fall beyond the current planning horizon, with several councils disclosing capital requirements in years 11 to 30 that are an order of magnitude larger than their funded first decade.

3.5 Hardest to Fund

Some adaptation responses are harder to fund than others. Here, "hard to fund" refers to the scale of some projects, which can cost a significant amount and leave a material gap, and the long-term cost of operating, maintaining and renewing assets. The gaps cluster in a number of areas, from delivering what plans recommend, to renewals, flood protection and proactive measures.

Delivering what plans recommend. Where councils acknowledge a shortfall without costing it, the lines typically show a stated need that exceeds the budget, a plan or strategy that is funded while delivery is not yet costed, or an investigation or design that is funded while construction is not yet costed. In part, this may reflect where councils are in the planning cycle; however, several councils go further and state that no funding has been allocated, or that delivery is beyond what they can afford without external support.

Flood schemes and stopbanks. Flood protection is the most common topic among lines with an acknowledged gap compared to what's needed and among lines flagged as at risk. Flood protection often costs a significant amount, leaving gaps the rating base cannot carry. New works and scheme extensions are also becoming harder to justify as cost-benefit analyses change, while post-event recovery upgrades remain easier to fund[1]. Several councils have also removed or deferred planned flood works.

Renewals and upkeep. Interviewees described capital works as easier to fund than ongoing operating costs. Capital expenditure of projects can be debt-financed and attract Crown co-funding, whereas maintenance and renewals must be met from rates year after year. In the dataset, several councils report funding depreciation below the level needed to maintain their assets in order to limit rates increases. This is most visible in stormwater and three-waters renewals, where the pressure tends to show up as deferred renewals rather than as a visible funding gap. Some councils are also funding pipe surveys because asset condition is unknown, and note that the upgrades that follow are likely to cost considerably more.

Transport and route security. Transport network resilience depends partly on Crown and Land Transport funding that is not always confirmed, including for slip repairs and pavement rehabilitation, and nearly all of these lines carry a funding-risk flag. Unlike most other categories, however, it has a dedicated funding stream through the National Land Transport Fund, so the difficulty lies in the certainty of co-funding rather than the absence of a mechanism.

Proactive measures. Recovery is easier to fund than prevention. Proactive managed relocation[2] is

[1] Flood protection already attracts significant investment but on its own it is unlikely to keep pace with rising flood risk without a wider mix of adaptation responses.

[2] Relocation covers roads and other infrastructure as well as housing.

underfunded compared to recovery, i.e. $3 million budgeted compared with $851 million for post-event property buyouts, and several councils acknowledge retreat or relocation needs that are not yet costed. This is consistent with the absence of a funding mechanism for proactive relocation.

More broadly, Crown funding goes mainly to physical infrastructure and post-event recovery. Crown support for planning, nature-based solutions and proactive relocation is negligible, which leaves these responses reliant on rates.

Areas not yet affected. Communities that are exposed but have not yet experienced a major event are among the hardest to fund, because Crown funding tends to follow disaster history and analytical capacity.

Insurance. Some councils also report shortfalls in insurance or self-insurance for flood and disaster risk, as cover for high-risk assets becomes more expensive or harder to obtain.

3.6 Evidence Gaps

This section highlights areas where the dataset is thin or silent. These are not necessarily gaps in council planning. Some reflect the scope of this project and others the limits of what budget documents disclose. Each is an area where further investigation and evidence are warranted.

In the dataset, water security, in broad terms, appears to be a gap, with only 6 out of the 24 councils having any water-security line item[3]. Water security typically requires significant investment, often funded through targeted water rates. The councils that have looked at water security in their budget describe the problem as far larger than their budget. Dunedin notes that 80% of its water comes through two ageing pipelines, and that securing new sources pushes nearly half a billion dollars of unfunded liability into years 11 to 30. Hawke's Bay's Regional Water Security Programme is reliant on government funding, and the council has signalled that any growth in scope may require commercialising the projects to make them financially viable.

Wildfire was only found in two line items: Marlborough District Council's "Drought and Wildfire assessment under future climate change considerations" and Northland's "Wildfire hazards" investigation into how wildfire risk may increase under climate change scenarios.

Next, extreme heat is acknowledged as a climate risk but dedicated standalone budget lines for heat adaptation are absent from the dataset. It was found that heat mitigation is often treated as a co-benefit of green infrastructure. Auckland Council acknowledges the threat of a changing climate bringing more frequent/severe events that put pressure on community infrastructure, specifically noting that its park network plays a vital role for stormwater conveyance and provides cooling for hot days.

The threat of rising seas infiltrating coastal groundwater and drinking supplies is primarily funded through scientific monitoring and investigation budgets.

Councils must prioritise limited resources towards the climate risks most critical to their regions, and deciding where to focus is a judgement call for each council, made with the resources at hand. However, where risks are known, even if the evidence is still evolving, but are not yet being planned or funded for, there is a potential liability risk across the sector.

Lastly, avoidance is a crucial adaptation strategy because it relies on zoning and policy rather than physical infrastructure. It is funded through standard operational budgets. However, it has not been quantified as part of this project as it requires a different scope of investigation.

Most budgets in the dataset relate to publicly owned assets held by councils and the Crown. Adaptation costs and impacts for private property, businesses and agriculture were outside the scope of this project and are not captured in the figures.

Alongside costed adaptation needs, adaptation benefits are rarely costed. This largely reflects the limited tools and guidance available for valuing benefits, rather than any shortcoming on the part of councils, but it does mean the net cost of adaptation is likely to be overstated.

3.7 The Role of Insurance

Council insurance arrangements rest heavily on an assumed Crown contribution. At least seven councils assume the Crown will meet 60% of the cost of restoring essential infrastructure after a disaster, at a time when premiums are rising and some cover is becoming unavailable. This split derives from the 1991 Disaster Recovery Plan, and one council states that if central government changes its level of disaster assistance, it will be forced to alter its insurance arrangements.

[3] In this report, water security covers a broad range, from managing freshwater resources through to supply infrastructure, so regional councils can also hold water-security line items.

All 24 councils describe their insurance arrangements in their plan documents, and 20 of the 24 disclose a stated change in cost or availability (these figures describe disclosed arrangements rather than recorded spend).

Premiums are rising steeply, with disclosed single-year increases of 23% to more than 30%, and several councils forecasting annual rises of 15–20% across the first decade of their Long-Term Plan. One council states that it received no interest from any insurer for its flood protection assets in 2023.

Councils expect cover to become unavailable or conditional in high-risk residential areas, and in some places, this is already disrupting home insurance and mortgage lending.

In the context of climate adaptation, the rising cost of insurance and potential insurance retreat further emphasises the importance of making New Zealand more resilient toward natural hazard and climate impacts.

3.8 Cost-Sharing

Cost-sharing is how the cost of adaptation is split, before and after events, between central and local government, and those who benefit, such as asset owners and developers. It is one of the key pillars of the National Adaptation Framework, and it is complicated by the fact that those who pay, those who benefits and those who decide are often different parties. Participants are divided on how far to look beyond existing tools. Some saw limited value in exploring new innovative finance and funding mechanisms, noting that the investment need and the priority is to act. Others wanted to explore options including a dedicated national adaptation fund, nature-based solutions finance, an emitter/polluter-pays levy and blended finance/PPPs. International examples offer useful models, but the stronger case for decision makers such as the Treasury. Will come from quantifying New Zealand's own finance gap.

Many countries have a dedicated national adaptation fund, with various funding mechanisms (Box 1). Interest in such a fund was expressed across interviews and survey answers in different variations. The biggest sticking point tends to be around eligibility criteria and liability. Ideas included:

- Eligibility gated on having completed a local adaptation plan
- Eligibility based on breach of trigger points
- Co-investment fund with an innovation component supported by cost-sharing criteria (support innovative financing models, nature-based solutions and pilot approaches)

Another theme was the importance of solution-agnostic funding to ensure a range of adaptation measures can be deployed. On the other hand, a specific mechanism for nature-based finance was mentioned as well because the overarching benefits of NbS can be difficult to measure and therefore capital can be hard to attract.

Leveraging developer contributions to pay for building in high-risk areas was also mentioned as a potential funding tool.

3.9 Mandates & Definitions

Climate adaptation has no agreed definition, and roles and beneficiaries are not clearly set out, so councils have taken different approaches to who pays and who benefits.

Council mandates sit across the Local Government Act 2002 and the Planning Act, the Natural Environment Act, and the Emergency Management Act as well as the Soil Conservation and River Control Act. The LGA 2002 establishes the three council types and their general governance and funding duties including the Long-Term Plan's financial and infrastructure strategies. Existing plans, how they relate and under what mandate they sit is outlined in Appendix D.

- **Regional councils** hold the environmental-regulation and catchment-scale functions: freshwater, land, air and coastal-water management through regional policy statements and consents; river management and flood control; and regional emergency management coordination.
- **Territorial authorities** hold the asset-and-consenting functions at district scale: water, sewerage and stormwater provision; building control; land-use consenting (including natural-hazard overlays); and district-level emergency management.
- **Unitary authorities** hold both sets of functions in one organisation.

Councils have a range of mandates, but have limited direction on when and how they are expected to use them, and little certainty about how costs will be shared.

What remains open is who is responsible for acting on climate risk specifically within those functions, who pays for it, and who counts as benefitting from it. Climate adaptation itself remains undefined and surfaced across every interview as a key barrier to reliably size the problem, track progress, or compare need across regions. Similarly, the absence of a definition of roles and beneficiaries has created uncertainty and different approaches across councils. One council might take the view that the whole region benefits when an area avoids flooding, while most other councils treat only the assets within the

floodable area as beneficiaries. One council goes further and limits adaptation planning to public assets only, ruling out private buyouts.

3.10 Beneficiary Pays

The beneficiary pays principle holds that those who benefit from adaptation, such as property owners protected by a scheme, should meet some or all of its cost. Across all interviews, there was no consensus on the beneficiary pays principle and some even showed different views within organisations. Some treat it as a necessary principle that keeps community cost expectations honest, and others reject a hard version of it due to equity concerns. A clear definition is key as each version implies a different defensible payer.

There are concerns around setting a precedent that creates expectations for communities. If one community received buyouts and the other did not, this creates uneven decision making. Clear processes, systems and structures allow for consistency, certainty and long-lasting decision making.

A similar pattern can be observed in the survey results where the principle is accepted but it becomes unworkable once we try to answer who counts and who can afford it, with strong concerns that it will disadvantage communities with the least capacity to pay. Some beneficiaries cannot be identified or are not able to be charged, therefore the costs fall somewhere else by default.

Differences in capacity between larger, urban councils and smaller or rural councils were a theme across most interviews and are also reflected in the qualitative analysis. Large councils are better placed to self-fund planning, absorb co-funding requirements, and access debt. Smaller councils often carry greater exposure relative to their resources and can find it harder to meet co-funding requirements, credit ratings or business case capabilities that central government schemes and LGFA require.

The dataset shows councils with small rating bases and high hazard exposure face a disproportionately high cost per ratepayer. Examples include Gisborne, Thames-Coromandel, the West Coast and Nelson, each with around 22,000–28,000 rateable units. A single flood or coastal protection scheme spread across so few ratepayers produces a per-unit cost several times higher than the same investment in a larger council. This pattern depends on the size of the rating base rather than on the completeness of the budget data, so it is likely to hold even as better information becomes available.

Whenua Māori are disproportionately exposed to natural hazards because this land was either historically confined to wetlands or coastal land (as a kai basket), or the most productive and secure land was lost through raupatu (confiscation) and other Crown land alienation, leaving remaining Māori land concentrated in more exposed places. Furthermore, red-zoned Māori land is often unable to be insured, but the enduring connection to place makes it difficult to relinquish.

Interviewees raised concerns that current legislative changes may reduce Māori influence, including through removing RMA Part 2 protections and Mana Whakahono ā Rohe from the current planning-reform package as well as winding back the Te Mana o te Wai hierarchy. This is happening at a time when adaptation decisions with long-term consequences for whenua are being made.

Councils describe hapū- and iwi-led adaptation work as filling gaps in council service provision but without a dedicated funding line.

3.11 Collaboration

There is an appetite for collaboration in different forms across councils. Some councils framed collaboration in the form of aggregation to reach a financing threshold as positive while others expressed scepticism on equity grounds, noting bottom-up aggregation tends to favour already well-resourced councils.

Another form of collaboration was raised for pooling assessment and modelling costs across councils to avoid duplicating hazard modelling and build shared capability.

Risk pooling was covered in two instances: MCERT noted that Crown-level risk pooling to help smaller councils that cannot access LGFA funding is on the table but awaits ministerial decision next term. The Iwi Chairs proposition calls for Māori-led risk pooling via pooling capital, procurement and risk nationally while keeping decisions over whenua and priorities with iwi/hapū.

When it comes to insurance pooling, examples already exist in practice. South Island councils pool cover through Aon (up to a $500 million group limit), and Waikato and Bay of Plenty each run their own regional collectives (LASS's "Co-Lab" and BOPLASS respectively).

Across interviews, pool capital/risk/data nationally with regional coordination and local delivery is a strong pattern.



Photo: Pexels, Tyler Lastovic

4. Discussion

The evidence synthesised in this report points to one conclusion. Current funding settings are not sufficient for the adaptation councils have already identified, and they make proactive investment the hardest to fund. International experience reinforces this.

Subnational governments account for 69% of climate-significant public investment across OECD/EU countries but experience restrictions in their ability to raise revenue or debt to access finance according to the OECD's report on approaches for financing and investing in climate-resilient infrastructure. The same report also contains benefit-cost ratio values for four adaptation measures for the period 2020-2100 under a 2-degree scenario. There is significant potential in cost-efficient adaptation investment and in some cases investment has already outperformed inaction. This is without even considering wider social and environmental benefits. (OECD, 2024)

In the New Zealand context, with almost a quarter of identified budget line items for climate adaptation being at risk within the current 10-year LTPs (Section 3.3) and the significant cost identified to date for the 30+ year infrastructure needs, the evidence indicates that current funding is significantly insufficient. In addition, rates, a key source of council funding for adaptation, are often constrained, and the introduction of a rates cap would place adaptation finance under further pressure.

Many councils are already having to make difficult decisions including lowering existing levels of service. Funding new and additional projects is likely to be challenging for many areas. These decisions depend on councils being able to identify adaptation spending in the first place including its cross-cutting benefits.

Climate adaptation is also hyper-local and place-based. What counts as an effective, fundable response in one catchment may not transfer to another, and this variation has direct implications for how funding mechanisms and eligibility criteria are designed.

4.1 Council Tools

4.1.1 Budget Tagging and Expenditure Tracking

Identifying climate adaptation budget lines was difficult due to inconsistent labelling and the absence of a shared definition.

Developing a shared definition and budget-tagging guidance for climate adaptation, designed jointly by central and local government, would be extremely valuable for future quantification of needs or Treasury tracking funding of such investments.

This requires further work and coordination. In the meantime, a lighter-touch version of tagging can still be applied now, so that adaptation programmes aren't cut invisibly simply because they sit embedded within other budget lines.

Global practice offers a workable starting point. The OECD-DAC Rio Markers, originally built for tracking aid and development-finance flows, use a simple 0/1/2 scoring logic: would this activity have been designed or funded without the climate-adaptation objective? A score of 2 means adaptation was essential to the decision; 1 means adaptation is a real but secondary benefit; 0 means the activity was screened and found not to be adaptation. It's a fast, low-burden first pass, well suited to stretched council finance teams.

Layered on top of this marker, the PARA framework and its sub-categories which were used in this project's analysis could provide the taxonomy to show

what kind of adaptation the spend is going toward. Together, the two give a defensible picture of how much is actually being spent and where, which is the precondition for the harder prioritisation decisions councils face this LTP cycle.

A further efficiency would be to extend the tagging design used by the BIOFIN (Biodiversity Finance Initiative) expenditure review already underway in New Zealand. The National Adaptation Plan already frames biodiversity as a source of nature-based solutions that build climate resilience, so there are synergies to leverage.

Tracking actual spend against budgets was outside the scope of this project, but tagging should also be applied to expenditure so that actual adaptation spend can be identified. The next section considers how tagging could align with councils' natural hazard management functions.

4.1.2 Integration with Natural Hazard Management

Natural hazard management and climate adaptation overlap but are distinct. Both aim to reduce exposure and vulnerability to climate extremes and to build resilience. The IPCC found that closer integration could provide benefits at scale (Field et al., 2012). The key difference is the changes over time due to climate change compared to pure disaster risk reduction. A tagging tool should take that into consideration.

Pure natural hazard management might focus too narrowly and statically on immediate risk reduction based on historical records while adaptation expands this scope to include deep uncertainties, different pathways and to avoid maladaptation and lock-in.

Given councils' roles and responsibilities in relation to natural hazard management, which are outlined in the new Planning Act, Natural Environment Act, and the Emergency Act as well as the LGA, tagging should be in line with these activities.

The United Nations Office for Disaster Risk Reduction's guide on Budget Tagging for Disaster Risk Reduction and Climate Change Adaptation outlines design and implementation considerations to integrate the two into the budget and decision-making processes (UNDRR, 2023).

4.1.3 Quantifying Financial Adaptation Needs

The IPCC defines adaptation needs as "circumstance requiring action to ensure safety of populations and security of assets in response to climate impacts". The approach to monetising adaptation needs in this paper is bottom-up project/activity based. Its main limitation is that it produces a list of costed local activities, not a prioritised, sequenced, nationally aggregated investment programme.

There isn't a single 'correct' methodology to quantify adaptation needs. Approaches are country- and sector-specific, and every method carries a risk of over- or understating financial need, including the one used here. Best practice is therefore to combine methods. The UNFCCC Adaptation Committee recommends pairing bottom-up, activity-based costing with top-down climate-scenario modelling and cross-checking the two against each other, an approach also used by UNEP to produce its current global headline figures (UNFCCC, 2022).

International best practice also highlights prerequisites, whose absence surfaced as barriers in the interviews:

First, the objective needs to be defined because a goal to reduce risk to an acceptable level, avoid a defined damage threshold, or close an existing adaptation deficit, each produces a different cost figure. Who sets that objective depends on the level at which need is being costed. For a national estimate, the 20 objectives in the first National Adaptation Plan are the natural starting point (Ministry for the Environment, 2022). For example, HBP2 'new and existing places are planned and managed to minimise risks to communities from climate change', or INF1, 'reduce the vulnerability of assets exposed to climate change', could guide what a national estimate sets out to cost. However, the Climate Change Commission found that these objectives are not specific, measurable or time-bound, and that neither the plan nor the 2025 National Adaptation Framework includes measurable, outcomes-focused goals. It identifies measurable outcomes as part of the clearer national direction needed in the 2028 National Adaptation Plan (Climate Change Commission, 2026b). Until 'minimise' and 'reduce' are defined against a target level of risk for example, they cannot be costed on a consistent basis. The National Policy Statement for Natural Hazards 2025 risk matrix already offers a national benchmark for new development, but not for existing communities and assets. For place- or project-level costing, the objective, such as the level of service or tolerable risk for a community, is set locally by councils with communities and iwi/hapū, typically through adaptation planning such as DAPP, within those national settings. Without a shared national objective, bottom-up estimates cannot be aggregated on a consistent basis.

Second, the baseline and climate-scenario assumptions need to be stated, so that changing need, and the success of measures taken against it, can be tracked over time.

Third, indirect and institutional costs (monitoring, transaction, opportunity and capacity-building costs) need to be included alongside capital expenditure.

4.1.4 Quantifying Adaptation Benefits

Costing need is only half the case; the benefits of adaptation also need to be quantified. Global best practice shows that costs are easier to quantify than benefits, which biases appraisal toward cost-only frameworks that overstate the net cost of adaptation and understate the case for investing in it. This is a particular barrier for nature-based solutions, whose wider benefits are difficult to measure, and which therefore struggle to attract capital. Interviewees suggested a dedicated nature-based finance mechanism in response.

The three most used appraisal methods, cost-benefit analysis (CBA), cost-effectiveness analysis (CEA) and multi-criteria decision analysis (MCDA), help decide which actions are worth funding, but all need a defined baseline and none is built to handle deep uncertainty (UNFCCC, 2022).

Dynamic adaptive pathways planning (DAPP) fills this gap by sequencing decisions over time with low-regret actions being committed now, and costlier or irreversible actions being deferred until a monitored trigger, such as a sea-level threshold or flood frequency, is reached. CBA, CEA or MCDA can still appraise the action at each decision point.

This matters for pricing adaptation need because DAPP is an established practice for some councils already. Ministry for the Environment guidance has built in a ten-step DAPP decision cycle since at least 2017. To date this has mostly been applied voluntarily and to coastal hazards specifically (Ministry for the Environment, 2024).

For costing, this means a pathways-based need is not one number but a committed near-term cost plus contingent costs tied to triggers that may or may not be reached. That profile suits a funding mechanism that releases money in stages as triggers are met, rather than requiring the full lifetime cost upfront.

Treasury's CBAx is a starting point, but it only monetises greenhouse gas emissions, and Treasury guidance confirms that avoided losses and wider adaptation benefits fall outside its scope. A Treasury-endorsed method for monetising avoided damages, service disruption and resilience co-benefits would strengthen councils' business cases. Any such method should build on, and align with, existing work such as the National Flood Resilience Investment Prioritisation Platform (FRIPP) and related central government initiatives, rather than duplicate them. The Newfoundland provincial government's municipal cost-benefit tool for flooding, storm surge and sea-level rise offers one template.

In the end, the target cost of adaptation is, and will remain, a judgement call. No agreed global or national quantitative adaptation goal exists against which to measure it.

Set against this uncertainty, the evidence gathered through this project points the same way. Councils' own plans acknowledge need that current budgets do not cover, and councils are already under strain trying to fund the work already committed. Interviewees pointed to staff diverted to event response, thin disaster reserves and rates capping.

4.1.5 Deferred Investment

Even with needs and benefits quantified, councils face more required actions than their budgets can fund, and what does not fit is usually deferred to a future cycle.

That deferral is often not very visible in LTPs, and neither is its cost. This cost covers different aspects. The first is the damage absorbed while waiting, expressed as Annual Average Damage (AAD) and discounted over the years of delay. Because AAD rises as hazards intensify, each additional year adds a larger increment than the last. In South Dunedin, AAD rises from about $11 million a year today to $212 million by 2127 (WSP, 2026).

The second is the larger asset that has to be built later, since a defence delivering the same level of service against a higher sea has to be bigger, and the marginal cost of adding capacity to an asset being built anyway is small compared with building to the higher standard later (Hallegatte, 2009). The third is the rework cost of reaching the same endpoint in stages. In the Clifton to Tangoio Coastal Hazards Strategy 2120 in Hawke's Bay, the staged Te Awanga pathway (renourish, retreat the line, then managed retreat) was the most expensive of six assessed at $24.15 million over 100 years, against $14.94 million for retreating the line immediately (Lawrence et al., 2019). The difference is largely interim protection paid for and later abandoned, a cost visible only when the full pathway is costed. The lesson concerns the cost of staging rather than a preference for any one response; deferral raises the cost of protection and accommodation in the same way.

Deferral can also miss a scheduled renewal, turning what could have been a small adaptation uplift into a full standalone capital item. Councils plan $39.5 billion of asset renewals over 2024-34, yet stormwater renewals are funded at only 43% of depreciation, down from 51%, in the asset class most exposed to intensifying rainfall (Controller and Auditor-General, 2025b).

4.1.6 Maladaptation

Maladaptation is where a response increases long-term risk rather than reducing it, or shifts it elsewhere. It is usually an unintended consequence of well-intentioned action (Climate Change Commission,

2026a). The risk is greatest after an event, when decisions are rushed and when funding mechanisms favour rebuilding over planning, avoidance or relocation. Protection works can also create a "levee effect", encouraging development behind defences and increasing exposure when they fail (Tombs et al., 2026). National policy settings can add to this risk: projects consented under the Fast-track Approvals Act 2024 may proceed in exposed locations before regional spatial plans and the adaptation plans are in place. This report treats these as external factors that shape the future funding gap rather than analysing them in depth.

4.1.7 Capability

There are many useful methodologies to identify adaptation needs, appraise options and calculate the costs of inaction or deferral. Each sheds light on a different step of the process and contributes to a more robust approach to preparing for the effects of climate change.

Crucially, all of these tools must be deployed by staff who are trained in using them. This alone is a significant challenge for many of the councils.

The main national lever is Action 3.29 of the National Adaptation Plan, an adaptation professional development programme for key audiences led by MCERT. It sits alongside a wider set of guidance on dynamic adaptive pathways planning and regularly updated local government adaptation guidance.

The OECD found that capacity is often built and shared centrally. An example is Ireland's Climate Action Regional Offices which are set up to provide technical capacity training and financing directly to local authorities (OECD, 2023). These four regional offices are each hosted by a lead local authority and funded by central government, and provide a shared service that helps local authorities plan and deliver climate action.

4.2 Central Government Interface

4.2.1 Cost-Sharing Mechanism

A cost-sharing mechanism sets out how central and local government share the cost of adaptation.

Box 1: United Kingdom | Flood and Coastal Resilience Innovation Programme (FCRIP)

Administering Body: Department for Environment, Food & Rural Affairs (Defra) & Environment Agency

Target Recipients: Local councils, internal drainage boards, and catchment partnerships.

Focus & Mechanism: Part of the UK government's broader capital investment in flood and coastal defences. The programme funds local authorities to trial and implement innovative, place-based approaches to climate resilience, including sustainable drainage systems (SuDS), integrated catchment management, and managed coastal realignment.

Allocation Mechanism: Standardised Partnership Funding Calculator measuring outcomes. Economic damages avoided (monetised benefit to cost ratio), Number of residential properties protected (with higher funding rate for households in economically deprived areas), Environmental and natural benefits (e.g. hectares of wetland or intertidal habitat created), Adaptation longevity (how well the project accommodates long-term climate change).

Proactive adaptation is risk management. It reduces the cost of disaster impact, and it saves lives. There are three roles central government is well placed to play here. First, rebalancing investment over time toward risk reduction and resilience. Only 3% of government natural hazard spend since 2010 has gone to this, against 97% for response and recovery, a split more proactive investment could help shift (Climate Change Commission, 2026a). Second, design a durable financing mechanism, one that doesn't require councils to rebuild the case for funding every budget cycle. Third, ensuring that mechanism is accessible to all councils.

The National Land Transport Fund is the closest existing New Zealand precedent, and the Climate Change Commission itself has pointed to it as a working template. It combines a dedicated revenue stream, road user charges rather than general taxation, with a funding-assistance rate that already varies by territorial authority according to the extent of the local roading network relative to the rating base and that authority's ability to pay, plus minimum technical standards attached to funded projects.

Accessing a fund like this needs a settled, shared cost-benefit methodology, one that includes broader criteria such as environmental and social benefit. Examples include England's Flood and Coastal Resilience Innovation Programme (Box 1).

4.2.2 Allocation Criteria

Whatever the mechanism, a few design principles follow directly from the evidence gathered in this project. Building on the findings in Section 3.8, funding should be accessible, adequate, flexible, equitable, long term, needs-based and available before an event happens rather than only after. It must be predictable over the timeframes councils are required to plan for. It should flow through whichever organisation is best placed to deliver the outcome, council, iwi, hapū, marae or community organisation, and requirements should be proportionate to the scale of the project rather than a single threshold applied to all applicants. Councils remain important infrastructure partners, alongside direct access for

other delivery organisations where they are better placed to deliver. Allocation should also extend to readiness and maintenance, and to collective land, papakāinga, urupā and other cultural assets, not only to damage repair after an event.

Interest in a national fund was expressed across interviews and survey responses. The main sticking points are eligibility criteria and liability. Ideas raised included gating eligibility on a completed local adaptation plan, triggering eligibility when agreed trigger points are breached, and a co-investment fund with an innovation component to support new financing models, nature-based solutions and pilot approaches.

Two central government documents already touch cost-sharing. Treasury's Funding and Financing Framework sets out four principles for any public investment:

- exhaust non-Crown funding sources first,
- deploy Crown capital in the optimal form only where a genuine gap exists,
- prefer recoverable capital such as debt or guarantees over permanent grants, and
- actively manage financial risk over the life of the investment.

The framework itself does not mention adaptation. Its application to adaptation comes through National Adaptation Framework Action 12.

The Finance and Expenditure Committee's 2024 inquiry set out four cost-sharing principles, beneficiary pays, exacerbator pays, public pays and ability to pay, and deliberately declined to weight them, noting the weighting may change over time. The Climate Change Commission's 2026 progress report picked this up and went further, recommending that cost-sharing be weighted toward public funding where national benefit or Crown assets are at risk, and toward beneficiary pays where the benefit is purely private. Applied without safeguards, however, beneficiary pays can fall hardest on those least able to pay, such as households in small, highly exposed rating bases and Māori landowners whose whenua is disproportionately exposed and often uninsurable, as noted earlier in this report. Ability to pay therefore needs to sit alongside beneficiary pays.

Together with international examples (Box 2), this suggests beneficiary design is a matter of degree rather than a binary allocation, with the public share scaled to the benefits and outcomes a scheme delivers and the balance raised from those who benefit. An investment decision framework that settles the question action by action, against the hazard, asset and community in front of it, could be a pathway that addresses concerns around a binary approach.

Box 2: International insights on defining beneficiaries

The **G20/OECD's 2025** financing adaptation report states that adaptation's public-good, context-specific benefits make a standardised beneficiary test hard to build anywhere.

The UK uses two separate definitions. The Environment Agency's Partnership Funding Policy defines beneficiaries broadly and proportionally as anyone who benefits from a flood-coastal scheme, contributing in proportion to benefit received, covering households, businesses, utilities, even wider economic-growth beneficiaries. The Flood Re programme has a narrow eligibility with only pre-2009 residential properties under a certain size qualifying. It is funded by a flat industry levy plus a council-tax. Therefore, beneficiaries are defined differently for infrastructure investment versus household risk-pooling.

The Netherlands sets beneficiary shares in law, by land and property category. Land- and homeowners pay a set proportion of the regional water authority's system tax. Those who pay are also represented on the water authority's board, giving them a role in its governance.

4.2.3 Aligning and Leveraging Other Policies

Because adaptation often sits within business-as-usual infrastructure work such as renewals and upgrades, policies not directly aimed at adaptation can also be leveraged to embed it. Furthermore, council mandates for adaptation come from several Acts (Section 3.9), each with its own purpose, timeframes and funding rules, so these policies need to be aligned so they reinforce each other.

4.2.3.1 The National Infrastructure Plan

The National Infrastructure Plan 2026 (Te Waihanga, February 2026) prioritises cost-effective flood risk infrastructure (Priority 7). Its key actions are to amend the Local Government (Rating) Act 2002 so councils can charge targeted rates on Crown-owned property for hazard risk reduction, improve access to high-quality natural hazard data, and require schemes to be assessed through the Infrastructure Priorities Programme before they receive Crown co-funding.

The Government's June 2026 response supported all sixteen recommendations and, on Priority 7, noted $197.9 million of Regional Infrastructure Fund co-investment across 74 projects.

4.2.3.2 The Planning Reform

Avoidance is delivered mainly through zoning, plan rules and consent decisions rather than capital works,

so the Planning Act and the Natural Environment Act, which replace the Resource Management Act 1991, are the main lever. Safeguarding against natural hazard risk is one of the Planning Act's goals, and councils must have regard to their climate adaptation plans when preparing land use plans, which may use constraint mapping techniques.

The Act lets consent authorities refuse or condition consents where natural hazard risk is significant, and existing use rights no longer shield established land uses from new hazard rules, which matters for both avoid and retreat responses. However, the consent power excludes infrastructure and primary production, including forestry on erosion-prone land, unless national standards extend it, and ministerial powers to direct councils could either speed up or override local hazard rules.

Budget 2026 commits $294 million to the new system, including the first New Zealand Flood Map expected in 2027, though how councils can access this funding has not been disclosed. Early insights indicate that funding is mostly ring-fenced for data and digital tools at central government level rather than for councils.

4.2.3.3 Infrastructure Funding and Financing Act

The Infrastructure Funding and Financing Act lets private capital fund a specific project and recover its cost through a levy charged only on the properties that directly benefit. Little used since 2020, it was amended in August 2026 to extend access to water organisations and Crown agencies such as NZTA and KiwiRail, streamline levy approval, and limit councils' ability to block compliant proposals. Environmental resilience infrastructure, meaning natural hazard risk management works, is an eligible category.

4.2.3.4 Development Contributions

Development contributions, and the development levies that will replace them, recover the capital cost of infrastructure needed to service growth. They cannot fund unmet needs, such as upgrading current networks to a higher level of resilience, which must still be met from rates. This limits their role in adaptation to new development. The Local Government (Infrastructure Funding) Amendment Bill, to be introduced in early 2027 and expected to pass in late 2027, will replace contributions with levies covering three waters, transport, reserves and community infrastructure. Crown agencies will pay levies for the first time. The development levy reform presents an opportunity to mainstream climate adaptation and consider new contributions for development in risk-exposed areas.



05

Recommendations

Photo: AS Smith

5. Recommendations

Current funding is not sufficient for the scale of adaptation councils face. More funding is key but requires further foundational work. Several barriers need to be addressed to unlock investment and stretch it further. There is no shared definition of adaptation, no clear split of roles and responsibilities, and no consistent way to tag budgets, track spend or cost need. Capacity also varies widely between councils.

Addressing these gaps requires action from several parties. The foundation is a set of common adaptation settings that define adaptation, clarify roles and build on councils' natural hazard risk reduction functions.

Proactive, funded adaptation		
Central government (5.2)	**Councils (5.3)**	**Local Government Sector Bodies (5.4)**
Funding mechanisms, cost-sharing and valuing benefits	Transparent deferral, adaptation in renewals, visible funding risk	Evidence through existing initiatives and costing pilots
Common adaptation settings (5.1)		
Defines adaptation, draws boundaries, clarifies roles		

5.1 Common and Agreed Adaptation Settings

The foundational step is a set of common adaptation settings, co-designed and agreed by local and central government: shared definitions, boundaries, roles and methods that let councils and central government plan, fund and report adaptation on a consistent basis. This is not a new policy or a standalone framework. The National Adaptation Framework already sets the direction for adaptation in New Zealand; the common settings would make it workable for local government funding and delivery.

The common settings need to cover four elements:

Definition and boundaries: what counts as adaptation, how PARA responses relate, where public intervention ends and private responsibility begins, and whether council adaptation covers social, economic and ecological outcomes as well as physical assets.

Roles: which responses sit with central government, regional councils and territorial authorities.

Costing objective: the national objective against which adaptation need is costed, such as reducing risk to a tolerable level, so that council estimates can be aggregated on a consistent basis.

Tagging and reporting method: a budget tagging method that includes natural hazard risk reduction and aligns with Long-Term Plan and Annual Plan cycles.

The common settings must work within the reality councils operate in. They should align with existing reporting requirements, groups of activities and the core services proposed in new section 11A of the Local Government Act, because ambiguity in roles and council responsibilities is a barrier to funding.

Integration with natural hazard risk reduction, the preventive side of natural hazard management, should be a core design principle of the common settings. Natural hazard management remains a clear council responsibility through the current reforms, under the

Planning Act, the National Policy Statement for Natural Hazards 2025 and councils' flood protection and hazard risk reduction roles. Building adaptation into this existing preventive function, rather than treating it as a separate activity, is the most practical way to progress it within council mandates and budgets.

In practice, this means extending natural hazard management to account for changing risk over time, existing development and a wider range of impacts, and using scheduled renewals of stormwater, stopbanks and other assets to add adaptation uplift where the marginal cost is lowest.

A guide by the UN Office for Disaster Risk Reduction on budget tagging for Disaster Risk Reduction and Climate Change Adaptation recommends that the ministry responsible for the budget helps lead or chair the process, in partnership with agencies leading on disaster risk reduction and adaptation, and other cross-sectoral bodies (UNDRR, 2023).

Where the settings could sit

The common settings and definitions could be embedded in vehicles already in train.

Existing vehicle	What it could carry
Second National Adaptation Plan (update due 2028)	A national definition of adaptation and clear roles, consistent with the roles and responsibilities pillar of the National Adaptation Framework
Climate Change Response Amendment Bill (introduced July 2026)	Local application of the settings through the adaptation plans councils would prepare for priority locations in regional spatial plans
Local Government (System Improvements) Amendment Act	Reporting through the groups of activities the Minister would be able to specify, so adaptation is reported through structures councils already use
MCERT council performance metrics	Reporting of adaptation performance alongside existing council performance measures

Agreed common settings are a necessary prerequisite for consistent budget tagging and data collection.

Furthermore, adaptation-related work sits across several policies led by MCERT, including the National Adaptation Framework, regional spatial plans, adaptation plans in priority locations, cost-sharing decisions and development levy reform. Mapping and sequencing this work so that each policy draws on the common settings and evidence base is key to ensure councils have one consistent set of requirements to work with enabling mainstreaming climate adaptation.

5.2 Central Government

These recommendations sit with central government, but local government has a direct stake in each. Te Uru Kahika and LGNZ can advocate for them on councils' behalf, using the evidence in this report.

R1 Establish a national adaptation fund	Establish a standing, ring-fenced fund with a funding-assistance rate that varies by councils' ability to pay, using the National Land Transport Fund as a potential model. Release funding in stages as adaptation pathway triggers are met, rather than requiring full lifetime costs upfront.
R2 Fund pathways where none exist	Create dedicated pathways for adaptation responses that currently have no mechanism, notably proactive managed retreat and transition. Confirm the Crown's role after disasters so councils can set insurance and reserves on a known basis rather than an assumed 60% Crown contribution.
R3 Rebalance toward risk reduction	Shift natural hazard investment from response and recovery toward risk reduction, including co-funding adaptation within scheduled asset renewals where the marginal cost is lowest. Broaden national planning frameworks to address the multiple drivers of climate and natural hazard risk, so that funding across Protect, Accommodate, Retreat and Avoid responses can be assessed on a more equitable basis.
R4 Value adaptation benefits	Endorse a method for monetising adaptation benefits, such as avoided damage and service disruption, to sit alongside CBAx in business cases.
R5 Dedicated Māori adaptation funding	Provide dedicated funding with direct access for iwi, hapū, marae and other Māori entities, and requirements proportionate to project scale.

5.3 Councils

R6 Tag adaptation spend now	Apply a light-touch adaptation marker, such as Rio Marker 0/1/2 scoring combined with PARA categories, to Long-Term Plan and Annual Plan budget lines, so adaptation work embedded in other programmes is visible and is not cut by default.

R7 Disclose the cost of delay	When adaptation works are deferred beyond year ten, disclose the expected cost of delay alongside the deferral decision, including likely increases in the cost of capital, goods and services.
R8 Build adaptation into renewals	Identify adaptation uplift within scheduled renewals programmes, particularly stormwater and stopbanks.
R9 Make funding risk visible	Record assumed external funding consistently in Assumption Registers and Revenue and Financing Policies, so funding risk is visible to decision makers.
R10 Test insurance and reserves	Test self-insurance reserves and insurance cover against plausible losses, including the scenario that the Crown does not meet the assumed 60% of the cost.

5.4 Local Government Sector Bodies

Several bodies, including LGNZ, Te Uru Kahika and Taituarā, each play their own role, and each recommendation below would sit with whichever is best placed to lead, working together where roles overlap. Capability building runs across all recommendations. Together, they can lead actions now that will build the evidence base needed to progress standardisation of definitions and boundaries, integration with natural hazard management and cost-sharing developments.

R11 Contribute the dataset to national monitoring	Validate, align and scale the report's database and analysis through existing national initiatives.
R12 Enable costing pilots with councils	Provide hands-on costing support to councils during upcoming adaptation and spatial planning processes.
R13 Build pooled capability	Build a pooled capability model that councils can draw on for adaptation and natural hazard risk reduction. Sector bodies would design and host the model, with funding from central government, for example through the national adaptation fund (R1).

Align the Dataset with Existing Work and Contribute to National Monitoring

While there are several initiatives aiming to improve how natural hazard and adaptation investment is prioritised, including the National Flood Resilience Investment Prioritisation Platform (FRIPP), and related central government work, no dataset currently shows the climate adaptation budget information for councils to the level this one does. A separate national tool, however, would risk duplicating or conflicting with this work. The dataset is therefore best offered as an input to these initiatives, and to monitoring of the next National Adaptation Plan, rather than developed in isolation.

The current dataset is a first baseline. It covers 24 councils, relies on assumptions about which budget items count as adaptation, and could not always confirm a project's purpose, its funding sources and split, or whether budgets were spent or deferred. Eight councils were invited to review their data and five provided feedback.

We recommend validating the data with the remaining councils and agreeing with central government whether, and where, an ongoing tracking function is needed that will improve transparency and learning about the public funding flows to climate adaptation. Scoping should cover how it fits with FRIPP and related initiatives, where ownership best sits, the delivery and support model, and who funds its establishment and upkeep. Over time, any tracking should rest on the consistent tagging set out in the common settings (Section 5.1), aligned with Long-Term Plan and Annual Plan cycles so that spending can be tracked on a like-for-like basis.

Scoping should also consider how to fill the evidence gaps identified in Section 3.6, including water security, wildfire, extreme heat, groundwater and adaptation costs for private property.

Any tracking function could include one or more of the following components, depending on council needs:

Costing – quantifying the cost of specific adaptation interventions.
Budget tagging – linking adaptation needs to funding sources.
Expenditure tracking – monitoring actual spend against budgets.
Deferred investment – assessing the long-term cost of delay.

A consistent national picture gives Te Uru Kahika a credible evidence base for discussions with Treasury and central government on the balance of local and national funding, and on standardising adaptation methods and funding across Aotearoa New Zealand.

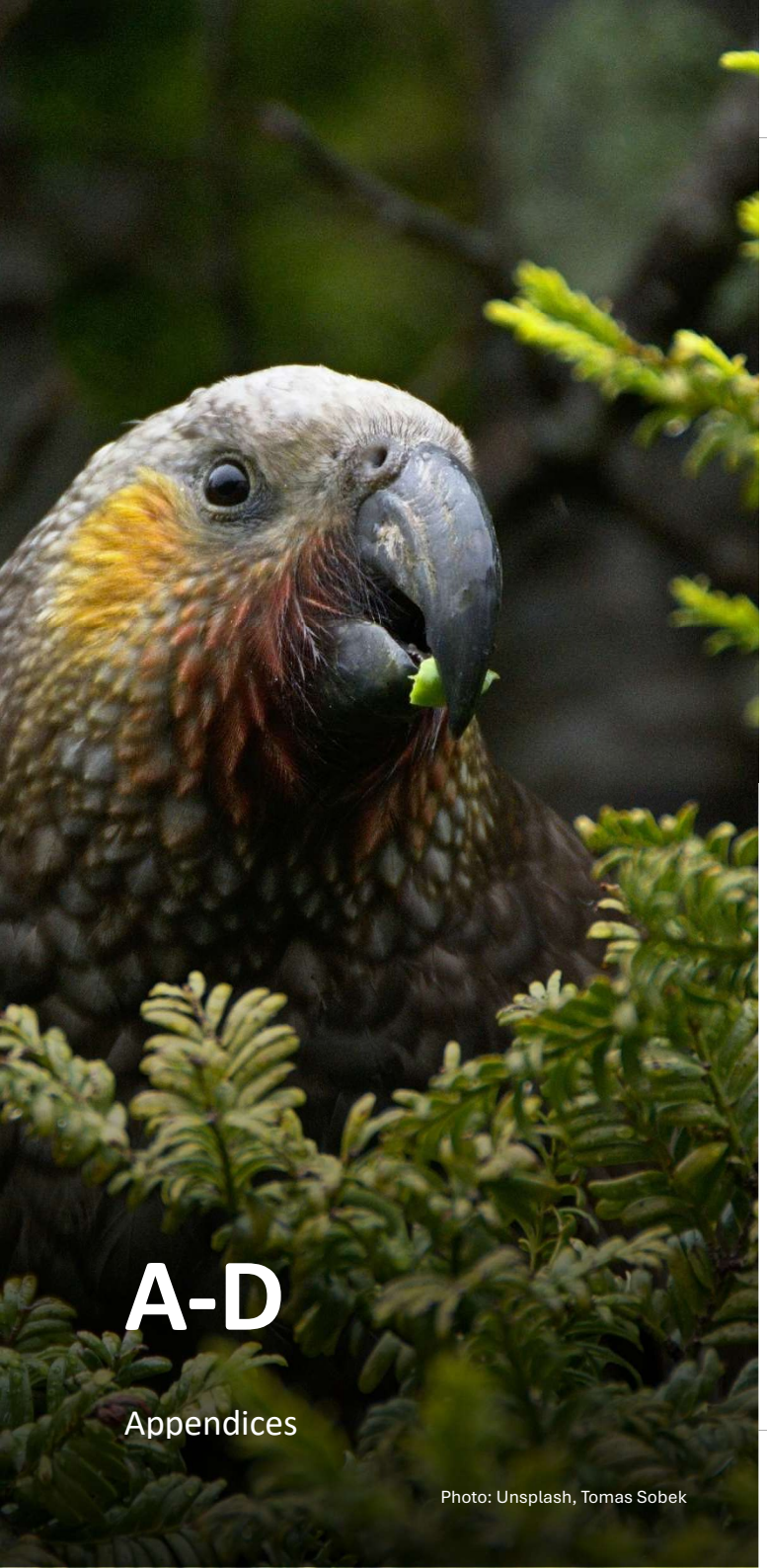
Launch Costing Pilots with Councils

The findings show there is no consistent method, and no silver bullet, for quantifying financial adaptation needs. As adaptation plans emerge from community engagement and spatial planning, a key question is how the resulting actions can be costed and translated into budgets. Pilots offer an opportunity to test this in practice.

We propose to partner with two to three interested councils as 'shadow experts' during their adaptation and spatial planning processes, providing hands-on support to cost adaptation actions using the tools above. Pilots would be tailored to each council's

needs and prioritise councils with less in-house climate capacity, particularly as councils work through amalgamation and new planning processes. This would also allow a deeper dive into how rating bases, Annual Plans and budgeting processes shape what adaptation can be funded, looking beyond Long-Term Plans.

Pilots would test these tools in practice and generate lessons that can be shared across the sector. We propose extending the existing Te Uru Kahika Climate Group into a community of practice on adaptation funding, so councils with strong climate teams can share consistent budgeting and finance tools and metrics with those without.



A-D

Appendices

Photo: Unsplash, Tomas Sobek

Appendix A: Desktop Research Plans

Council	Plans / Policies
Auckland Council	Long-Term Plan (2024-2034); Annual Plan 2026/2027; Auckland Climate Plan 2020; Auckland Plan 2050; Auckland Unitary Plan; Auckland Water Strategy; Climate Change Scenarios Guideline Document; Future Development Strategy; Revenue and Financing Policy
Bay of Plenty Regional Council	Annual Plan 2026-2027; Bay of Plenty Civil Defence Emergency Management Group Plan 2024-2029; Bay of Plenty Civil Defence Emergency Management Partnership Agreement; Climate Change Action Plan; Development Contributions or Financial Contributions policy; Long-Term Plan (2024-2034) V1 & V2; Regional Coastal Environment Plan; Regional Parks and Coastal Catchments Asset Management Plan 2024-2034; Regional Policy Statement 2025; Revenue and Financing Policy; Rivers and Drainage Asset Management Plan 2024-2074; Strategic Asset Management Plan 2024-2034
Christchurch City Council	Annual Plan 2026-2027; Catalogue of Coastal Hazard Adaptation Options; Christchurch City Plan; Christchurch District Plan; Coastal Adaptation Framework; Long-Term Plan (2024-2034) V1 & V2; Ōtautahi Christchurch Climate Resilience Strategy; Resilient Greater Christchurch Plan; The Ōtautahi Christchurch Planning Programme; Liability Management Policy and

Council	Plans / Policies
	Investment Policy; Revenue and Financing Policy
Dunedin City Council	Dunedin City Second Generation District Plan; 9-Year-Plan 2025-34; Dunedin's annual plan 2024-25; Zero carbon plan 2030; Te Ao Tūroa – The Natural World: Dunedin's Environment Strategy 2016-2026; South Dunedin Adaptation Summary Report; Revenue and Financing Policy
Environment Canterbury	Annual Plan 2026/27; Climate Action Plan; Climate Change Community Reflections and District Summits Report; Long-Term Plan 2024-2034; Policy Statement; Regional Coastal Environment Plan for the Canterbury Region; Revenue and Financing Policy; The Canterbury Climate Partnership Plan
Environment Southland	Annual Plan 2026-2027; Climate Change Strategy 2024; Long-Term Plan 2024-2034; Regional Air Plan 2016; Regional Coastal Plan; Regional Policy Statement 2017; Revenue and Financing Policy and rating review 2024 Statement of Proposal; Southland Regional Development Strategy
Far North District Council	Annual Plan 2025-2026; Climate Action Policy; Community Adaptation Programme Recommendation Report;

Council	Plans / Policies
	Community Adaptation Programme Risk Screening Report; Far North District Council Climate Change Roadmap; Far North Proposed District Plan; Long-Term Plan 2021-2031; Te Tai Tokerau Climate Adaptation Strategy; The Operative Far North District Plan 2009
Gisborne District Council	2024-2027 Three Year Plan; Category 2P: Mitigation Tairāwhiti Policy; Category 3 Voluntary Buyout Policy; Climate change projections and impacts for Tairawhiti and Hawke's Bay; Climate Change Roadmap to 2050; Encroachment Policy; Financial Strategy; Infrastructure Strategy; Liability Management Policy; Policy Framework for Decisions on Storm-Affected Land; Revenue and Financing Policy; Tairawhiti 2050; Tairāwhiti Future Development Strategy 2024-2054; Tairāwhiti Future Development Strategy Implementation Plan
Greater Wellington Regional Council	2024 Revenue and Financing Policy; Annual Plan 2026-2027; Community Resilience Strategy; Future development Strategy 2024–2054; Long-Term Plan 2024-2034; Natural Resources Plan; Organisational Climate Emergency Action Plan; Our Region 2050; Policy Statement; Regional Climate Emergency Action Plan
Hauraki District Council	2024/25 Annual report; Annual Plan 2026-2027; Growth Strategy 2050; Hauraki District Plan; Hauraki Plains Climate Change Adaptation Planning; Long-Term Plan 2024-2034; Revenue and financing policy; Wharekawa Coast

Council	Plans / Policies
	2120 Community Plan; Zero Carbon Promise
Hawkes Bay Regional Council	Annual Plan 2025-2026; Climate change projections and impacts for Tairawhiti and Hawke's Bay; Financial Strategy; Regional Coastal Environment Plan; Regional Resource Management Plan (inc Regional Policy Statement); Three year plan 2024-2027
Horizons Regional Council	Annual Plan 2023-2024; Annual Report 2024-2025; Civil Defence Emergency Management Group Plan 2016 - 2021; Climate Action Plan; Climate Action Strategy; Future development Strategy 2024; Future development Strategy Implementation Plan; Long-Term Plan 2024-2034; One Plan; Revenue and Financing Policy 2024-27
Hurunui District Council	2023 Environmental Scan; Annual Plan 2025-2026; Annual Report 2024-2025; District Plan; Long-Term Plan 2024-2034; Finance and Revenue Policy; The Canterbury Climate Partnership Plan
Marlborough District Council	Annual Plan 2026-2027; Annual report 2026-2027; Reserves Asset Management Plan 2015-2025; Climate Change & Adaptation Program Plan; Coastal Monitoring Strategy; Long-Term Plan 2024-2034; Emergency Management Group Plan; Resource Management Plan
Nelson City Council	2024 – 2034 Flood Protection Activity Management Plan; Annual Plan 2025-2026; Annual Report 2024-2025;

Council	Plans / Policies
	Climate Action Plan; Climate Change Strategy; Environmental Management Activity Management Plan; Future Development Strategy 2022-2052; Infrastructure Strategy 2024 - 2054; Long-Term Plan 2024-2034; Nelson Tasman Future Development Strategy Implementation Plan 2024; Revenue and Financing Policy
New Plymouth District Council	Annual Plan 2026-2027; Emissions Reduction Plan; Financial Information; Long-Term Plan 2024-2034; Part Operative District Council Plan; Property Asset Management Plan 2024 – 2034; Resource Recovery Asset Management Plan 2024 – 2034; Stormwater and Flood Protection Asset Management Plan 2024 – 2034
Northland Regional Council	Annual Plan 2026-2027; Annual report 2025; Climate Change Strategy; Climate Change Strategy Implementation Plan; Cyclone Gabrielle Final Recovery Report for Te Tai Tokerau Northland; Infrastructure Strategy: Flood protection and control 2018-2048; Long-Term Plan 2024-2034; Northland Civil Defence Emergency Management Group Plan; Regional Plan for Northland; Regional Policy Statement; Te Tai Tokerau Resilience Action Plan
Otago Regional Council	Annual Plan 2026-2027; Climate Strategy; Development Contributions and Financial Contributions Policy; Draft Otago Land and Water Regional Plan; Dunedin Future Development Strategy 2024-2054; Flood Protection Management Bylaw 2022; Long-Term Plan 2024-2034; Proposed Regional

Council	Plans / Policies
	Policy Statement; Regional Plan: Coast for Otago; Revenue and Financing policy
Taranaki Regional Council	Annual Plan 2026-2027; Civil Defence Emergency Management Group Plan 2018 - 2023; Coastal plan 2023; Long-Term Plan 2024-2034; Regional policy statement
Tasman District Council	Annual Plan 2026-2027; Annual Report 2025; Coastal erosion protection structures on Council Reserve Land; Development and Financial Contributions Policy; Long-Term Plan 2024-2034; Nelson Tasman Future Development Strategy 2022-2052; Nelson Tasman Future Development Strategy Implementation Plan; Regional Policy Statement; Resource Management Plan; Revenue and Financing Policy; Tasman Climate Response and Resilience Strategy and Action Plan 2024-2035
Waikato Regional Council	Annual Plan 2026-2027; Annual Report 2024-2025; Climate Change Adaptation Guideline for the Waikato Region; Climate change hazards and risks in the Waikato region; Regional Policy Statement; Waikato Action Roadmap 2023; Waikato Long-Term Plan 2024-2034; Waikato Regional Coastal Plan; Waikato Regional Plan
West Coast Regional Council	Annual Plan 2026-2027; Annual Report 2024-2025; Kotahitanga Mo Te Taiao Strategy; Land and Water Plan; Long-Term Plan 2024-2034; Regional Coastal Plan; Regional Policy Statement; Revenue and financing policy; West Coast Civil Defence Emergency Management Group Plan
Whangārei District Council	Annual Plan 2026-2027; Climate Action Plan; Coastal Management Strategy; Emissions Reduction Plan; Long-Term Plan 2024-2034; Operative District Plan; Te Tai Tokerau Climate Adaptation Strategy

Appendix B: Interview List

Table 4: Organisations interviewed

Organisation(s)	
Environment Canterbury; Hurunui District Council; Christchurch City Council	Taranaki Regional Council; New Plymouth District Council; Ngā Rauru (iwi)
Te Uru Kahika / National Iwi Chairs Forum; Waikato Regional Council	Te Uru Kahika; Local Government New Zealand; Taranaki Regional Council
Local Government Funding Agency	Waikato Regional Council
Central government (MfE) adaptation/funding policy team	Auckland Council
Northland Regional Council; Far North District Council; Whangārei District Council	Climate Change Commission
Office of the Parliamentary Commissioner for the Environment	Centre for Sustainable Finance

Appendix C: Methodology

C.1 Research Approach

structured interviews (C.3) and an online survey (C.4).

The desktop research covered 24 councils: 11 regional councils, 5 unitary authorities, 2 city councils and 6 district councils. District councils were selected for geographic diversity and a range of population sizes. Publicly available plans, reports, policies and strategies relevant to climate change, adaptation, hazards, financial management and long-term planning were compiled, mainly Long-Term Plans, Annual Plans and standalone climate plans. This produced a pool of 216 documents, listed in Appendix A.

Councils do not use a standard template for reporting adaptation activity or financial information, so analytical judgements were needed to make the data comparable. These judgements are set out below, and the resulting limitations are summarised in C.5.

C.2 Desktop Research

Given the volume of material, NotebookLM was used to extract budget information from the compiled plans. Documents were uploaded in council-level folders and queried with the same fixed prompt for all 24 councils, requesting:

- A description of each project or measure
- The primary goal (e.g. flood protection, managed retreat, coastal protection)

environmental initiatives were also excluded because of the range of activities they cover, unless the council

This research combined three methods to build a comparable, evidence-based picture of how councils

- The amount budgeted, in dollars
- The proportion of that budget confirmed as funded, and the funding source
- Operating expenditure (OPEX) or capital expenditure (CAPEX)
- Start year and duration
- Phase (planning or implementation)
- Whether spend was direct or indirect (e.g. emergency management, infrastructure, stormwater and flood drainage, insurance, coastal asset management)
- Whether the measure was proactive or reactive
- The source plan

All budget amounts and funding sources extracted by NotebookLM were checked against the original council plans. Where labelling was ambiguous, or it was unclear whether a project was part of a larger one, this was recorded in the dataset notes.

Eight councils were then invited to review the adaptation line items identified for them, checking both completeness and the accuracy of funding sources. Five provided feedback, which was incorporated.

Once extracted, budgets and durations were converted to a consistent numeric format, an end year was derived from the start year and duration, and

explicitly grouped a climate-related initiative under that heading, in which case it was retained and

plan and fund climate adaptation: desktop research of council plans (C.2), semi-

project titles and objectives were grouped into adaptation actions and project topics.

C.2.1 Classification Framework

The classifications below were applied consistently across all councils to translate inconsistent, council-specific reporting into a comparable dataset. Each is a methodological judgement made for this research, not a standard defined in legislation or by central government.

Defining Adaptation

The absence of standardised definitions across local government reporting produces inconsistent budget tagging between councils. To assess financial commitments to adaptation on a consistent basis, the following inclusion parameters were set before analysis began:

Included: Activities aligning with the definition of adaptation as “the process of adjustment to actual or expected climate change and its effects”

Excluded: Climate mitigation (activities to reduce greenhouse gas emissions) and response and recovery activities, which fall outside the scope of this research. Projects tagged as general

flagged in the notes. Some mitigation and response activities were picked up during extraction; these

remain in the dataset but were excluded from the analysis.

Direct vs. Indirect Adaptation Spending

Climate adaptation is rarely a standalone budget line. It is usually embedded in routine infrastructure renewals that councils would undertake regardless of climate considerations. To separate adaptation spend from this broader investment, expenditure was classified as direct or indirect (Table 5).

Category	Classification	Definition
Direct	Explicit climate label or description	Line items explicitly labelled or attributed to "climate risk," "climate adaptation," or "climate resilience". Expenditure was identified as climate-related by the council itself.
Indirect	Operational category, climate function	Expenditure that inherently serves adaptation or resilience but is labelled under traditional operational categories, without an explicit climate reference. Examples included stormwater capacity upgrades and flood schemes.

Table 5: Classification of direct and indirect adaptation spending

Planning vs. Implementation

Category	Classification	Definition
Planning	Knowledge-gathering and strategy	Includes climate risk assessments, strategy development, and community engagement.
Implementation	Capital expenditure on physical works	Includes property buyouts, managed retreat, and hard infrastructure upgrades.

Table 6: Classification of planning and implementation spending

PARA Framework

Each implementation line item was also classified by the type of adaptation response it represents, using the Protect, Accommodate, Retreat and Avoid (PARA) framework. PARA is widely used internationally and in New Zealand coastal hazards guidance to describe the range of options available for responding to climate risk.

Within each PARA category, line items were further assigned to a project topic describing the kind of work involved. The topics were developed for this research from the line items themselves; they are not a standard taxonomy. Planning and enabling spend that could not be attributed to a single response type was recorded separately as Enabling & information.

Protect – defending existing people and assets in place

- River & flood control schemes: stopbanks, river works and scheme upgrades
- Urban stormwater & drainage: pipe, channel and pump capacity to keep water out of urban areas
- Coastal & shoreline structures: seawalls, revetments and groynes
- Nature-based & blue-green: wetlands, dune restoration, blue-green corridors and room-for-the-river approaches
- Erosion & land stability: slope stabilisation and erosion control

Accommodate – adjusting assets and land use so they can tolerate the hazard

- Transport network resilience: raising, realigning or hardening roads and bridges
- Water supply security: additional storage and alternative sources to cope with drought
- Wastewater & landfill resilience: protecting or relocating treatment plants and closed landfills exposed to hazards
- Flood warning & forecasting: warning systems that let communities live with residual risk

Retreat – moving people, assets and activities away from hazard areas

- Proactive managed relocation: planned relocation before an event
- Post-event property buyouts: voluntary buyouts after an event, mainly under the Crown–council cost-sharing arrangements that followed the 2023 severe weather events

Avoid – preventing new development or intensification in hazard-prone areas, mainly through planning rules, zoning and consent conditions. No costed line items were identified (see C.5).

Enabling & information – planning and enabling spend that cannot be attributed to a single response type

- Adaptation strategies, plans & pathways
- Catchment & network management plans
- Risk & hazard assessment, modelling & tools
- Scheme reviews, options & investigations
- Monitoring, data & science
- Community, iwi & hapū engagement
- Environmental & biodiversity programmes (retained only where the council explicitly linked them to climate)

Other / unclassified: asset renewals with no climate tag, and mixed items that could not be assigned.

Proactive vs. Reactive

Table 7: Classification of proactive and reactive spending

Category	Classification	Definition
Proactive	Pre-event	Funds allocated for risk reduction and resilience works ahead of a hazard event occurring.
Reactive	Post-event	Funds allocated for recovery, repair, and response after a specific natural hazard event.

C.2.2 Funding Sources and Budgets at Risk

Under the Local Government Act 2002, councils must publicly disclose how each activity is funded, generally in their Revenue and Financing Policy and Funding Impact Statements. Where a plan did not state a line item's funding source, these policies were used to infer it. For example, Greater Wellington Regional Council's Revenue and Financing Policy states that its 'Climate Change' and 'Strategic policy and planning' activities are funded 100% by general rates, and Horizons Regional Council funds its 'Policy, Strategy and Climate Resilience' group through a 100% general rate.

Major adaptation CAPEX is usually debt-financed on the principle of intergenerational equity, with the debt repaid over time through targeted and general rates. Where no funding source was disclosed for a long-term infrastructure or natural capital project, debt was therefore assumed in the first instance.

Recorded funding sources were then apportioned into percentage splits across Crown funding, targeted rates, general rates, fees and charges, reserves, developer contributions and other, and each line item was flagged where debt financing was indicated. For example, 'Debt & Targeted Rates' was coded as 100% targeted rates with a debt-financed flag; 'Mixed rates' as 50/50 targeted and general rates; 'Central Government Co-Funding' as 100% Crown funding; and 'Central Government Co-funding & rates' as 60/40 Crown funding and rates. Where a plan named several sources without proportions, the split was assumed, usually evenly.

A Revenue and Financing Policy sets out how a council prefers to pay for its activities; it does not guarantee that the funding exists. Recording 'debt' against a line item does not mean ratepayers can afford to repay the loan, and recording 'Crown funding' does not mean central government has agreed to provide it.

To identify budgets at risk, the significant forecasting assumptions (assumption register) in each council's Long-Term Plan were reviewed. Councils must disclose in these assumptions where forecasts rely on Crown funding or other external contributions, and the uncertainty attached. These disclosures, together with other comments in the source documents on conditional funding and deferrals, were recorded in the dataset's Notes field. The notes were then coded to identify risk drivers, amounts quantified but unfunded or deferred, amounts costed but not budgeted, and uncosted projects.

Each line item was classified by funding security using a keyword search of its funding source and notes. Items were classed as 'assumed / not secured' where the text indicated that funding was not yet secured, subject to a funding application or otherwise conditional, e.g. 'not yet secured', 'subject to funding', 'unfunded' or 'risk associated with this assumption'.

Line items whose notes indicated a material risk to delivery were flagged as high risk (54 items). Each was assigned a primary risk driver from a fixed set of categories:

- unsecured external funding (20)
- affordability or rating-base limits (10)
- depreciation not fully funded (7)
- budgets the council itself acknowledged as insufficient (6)
- insurance or self-insurance shortfalls (3)
- debt capacity limits (4)

- deferral beyond the current plan (4)

Only one driver was recorded per item, so items with several risks are counted once, under the one judged most significant.

Separately from the high-risk flag, the notes for every line item in the dataset were examined to see whether the council had identified further cost beyond the line item's budget.

- **Quantified gaps:** where the council stated an unbudgeted or deferred amount, it was recorded with its basis. Across 16 line items these total $2,954 million.
- **Unsized gaps:** where the council acknowledged a gap without costing it (40 items), the nature of the uncosted work was classified: stated need exceeds the budget with no figure given (16); planning funded but delivery not costed (7); investigation or design funded but construction not costed (5); retreat or relocation acknowledged but not costed (5); need acknowledged as unaffordable (4); and asset condition unknown (3).

Unsized gaps are not included in the $2,954 million figure, so it should be read as a lower bound on the unbudgeted cost councils themselves recognise.

C.2.3 Adaptation Needs Quantification

A separate analysis was carried out using only needs that councils have identified themselves. NotebookLM was used to search the source documents again for statements in which councils quantify their long-term adaptation requirements.

Councils that have quantified these requirements typically do so within their 30-year Infrastructure Strategies, and a number express the figure as a low-to-high band rather than a single point estimate. Most figures are infrastructure-based, but what they measure differs by council: the cost of maintaining, renewing and upgrading existing flood and drainage schemes (e.g. Bay of Plenty, Environment Southland, Otago, Waikato, West Coast); a total infrastructure programme in which climate resilience is one driver among several (e.g. Christchurch, Marlborough, Greater Wellington); combined recovery and resilience needs after a recent event (e.g. Gisborne, Hawke's Bay, Nelson); modelled costs of specific future defences (e.g. Thames-Coromandel's coastal defences over 100 years); or the value of assets at risk rather than a cost (e.g. Horizons). Across the 24 councils assessed, the identified need totals between $15 billion and $84 billion.

Every council in the sample noted that material needs remain uncosted, so the identified need should be read as a floor, not a full estimate. No adjustment has been made for these uncosted elements, and the figures have not been scaled to a national total, consistent with the treatment of budgets. The band should be quoted in full rather than reduced to a midpoint. Stated horizons are not normalised, so the low and high ends do not describe the same period, and the upper bound is dominated by a single unitary council's indicative band of up to $50 billion.

C.2.4 Hazards and Qualitative Evidence

NotebookLM was used to identify the three most significant climate hazards for each council. Hazards were drawn from regional Civil Defence Emergency Management (CDEM) Group Plans and, where available, dedicated climate risk screening reports. Only hazards these documents had already rated 'High', 'Very High' or 'Extreme' were included, recorded as climate hazards 1 to 3.

Qualitative evidence was extracted in a similar way. NotebookLM was directed to return direct quotations from each council's source documents against a fixed set of categories, so that findings remain traceable to specific statements in the original plans. The categories were:

Value of assets
Costs and needs for projects
Insurance
Climate scenarios used and their purpose
Whether area- or catchment-level planning is taking place
Financial constraints (debt, rates and total CAPEX)

C.2.5 Planning Maturity

Planning maturity was assessed by checking whether each council has a standalone climate plan and a standalone adaptation plan, and whether adaptation is embedded in long-term planning against four criteria:

1. Adaptation is backed by dedicated CAPEX or OPEX in the 10-year budget
2. Climate risk shapes how physical assets are built and replaced in the 30-year Infrastructure Strategy
3. Climate risk is embedded in council approval and procurement (for example, a mandatory climate impact statement before approval)
4. The council uses flexible, future-proofed frameworks such as Dynamic Adaptive Pathways Planning (DAPP) to manage long-term uncertainty

Embedded: all four criteria are currently met.

Transitioning: one to three criteria are met, and the council states that the remaining ones are actively underway.

Not embedded: none of the four criteria are met, even if the council has a standalone climate plan.

C.3 Interviews

To understand common approaches, pain points and funding barriers, 13 semi-structured interviews of around one hour each were held with council staff and other sector stakeholders between 22 July and 26 August. Interviewees are listed in Appendix B, and the interview themes are shown in Table 8.

Table 8: Interview themes and pain points

Theme
A: Planning vs Implementation Maturity
B: Implementation Finance Gap
C: Funding Mechanisms & Beneficiary Pays
D: Barriers to Implementation
E: Insurance & Risk
F: Innovative & Emerging Finance
G: Sector Coordination

Transcripts and notes were coded against these themes to compare viewpoints across interviewees, with further themes added as they emerged.

C.4 Survey

An online survey (Google Forms) covering the same themes as the interviews (Table 8) ran from 21 July to 25 September and received 13 responses from 12 councils. The responses were used to corroborate findings from the desktop research and interviews.

C.5 Limitations

The methodology relies on judgements needed to make inconsistent council reporting comparable. Its main limitations are:

Extraction coverage: The dataset reflects what NotebookLM extracted from the uploaded documents against the fixed prompt. Exhaustive manual extraction was not possible given the volume of material, so some relevant line items are likely to have been missed, particularly indirect spend embedded in wider infrastructure programmes.

Verification: Budget figures and funding sources were checked against source plans, and eight councils were invited to review their line items (five provided feedback). Qualitative extraction was not independently re-verified against every source document.

Classification judgements: Deciding what counts as adaptation meant drawing lines between adaptation and business-as-usual work, particularly renewals of existing flood and coastal schemes, roading resilience and post-event recovery. These judgements, and the direct/indirect, planning/implementation, proactive/reactive and PARA classifications, were applied consistently but were not verified by councils. Where project embedding was ambiguous, figures may understate or overstate a council's adaptation spend.

Avoid measures: No costed 'Avoid' lines were identified. Avoid work is mainly regulatory and planning activity that is not budgeted as separate line items, so its absence does not mean zero effort.

Budgets, not spend: Figures are budgets from Long-Term Plans, Three-Year Plans and Annual Plans, not recorded expenditure, and may change in later plans. They cover programmes of different durations, so totals are a sum of identified commitments rather than an annual spend rate. Where figures were annualised (e.g. for rates burden), a single large programme can dominate a council's result. Programme periods range from 3 to 100 years, with base years between 2021 and 2035, and have not been adjusted to a common horizon or discounted, so cross-council comparison is indicative only. Totals are also highly concentrated: Auckland accounts for 48% of identified spend, and Auckland, Christchurch and Greater Wellington for 80% of quantified need. For these reasons the analysis cannot reliably show the rates burden in individual councils or rank councils against each other; a low figure may reflect less information being found rather than a lower burden.

Funding sources: Where funding sources were not disclosed, they were inferred from activity-level policies or assumed to be debt, and multi-source splits were usually assumed to be even. These may not reflect how an individual project is actually funded; for example, the debt assumption may overstate borrowing where projects are funded from reserves, rates or grants.

Adaptation needs: Needs figures are councils' own disclosures and vary in scope, method and time horizon (3 to 100 years). Some use asset or exposure values as proxies, and many already include the funded programme. They show the scale of need councils acknowledge rather than a consistent estimate, and they were not subtracted from budgets to derive a gap; the funding gap reported is limited to amounts councils themselves identify as unfunded or deferred. Variation across councils reflects how far each council has progressed its costing more than differences in underlying exposure.

Iwi and Hapū: The research was designed around council plans and budgets. Iwi and hapū adaptation activity and funding, including work funded outside council budgets, was not captured in the dataset, and engagement with

Māori was limited to a small number of interviews. Findings on mana whenua should therefore be read as indicative rather than comprehensive.

Survey response: The survey received 13 responses from 12 councils. The low response rate limits the conclusions that can be drawn, so survey results are used only to support findings from the desktop research and interviews.

Appendix D: Local Government Planning Landscape

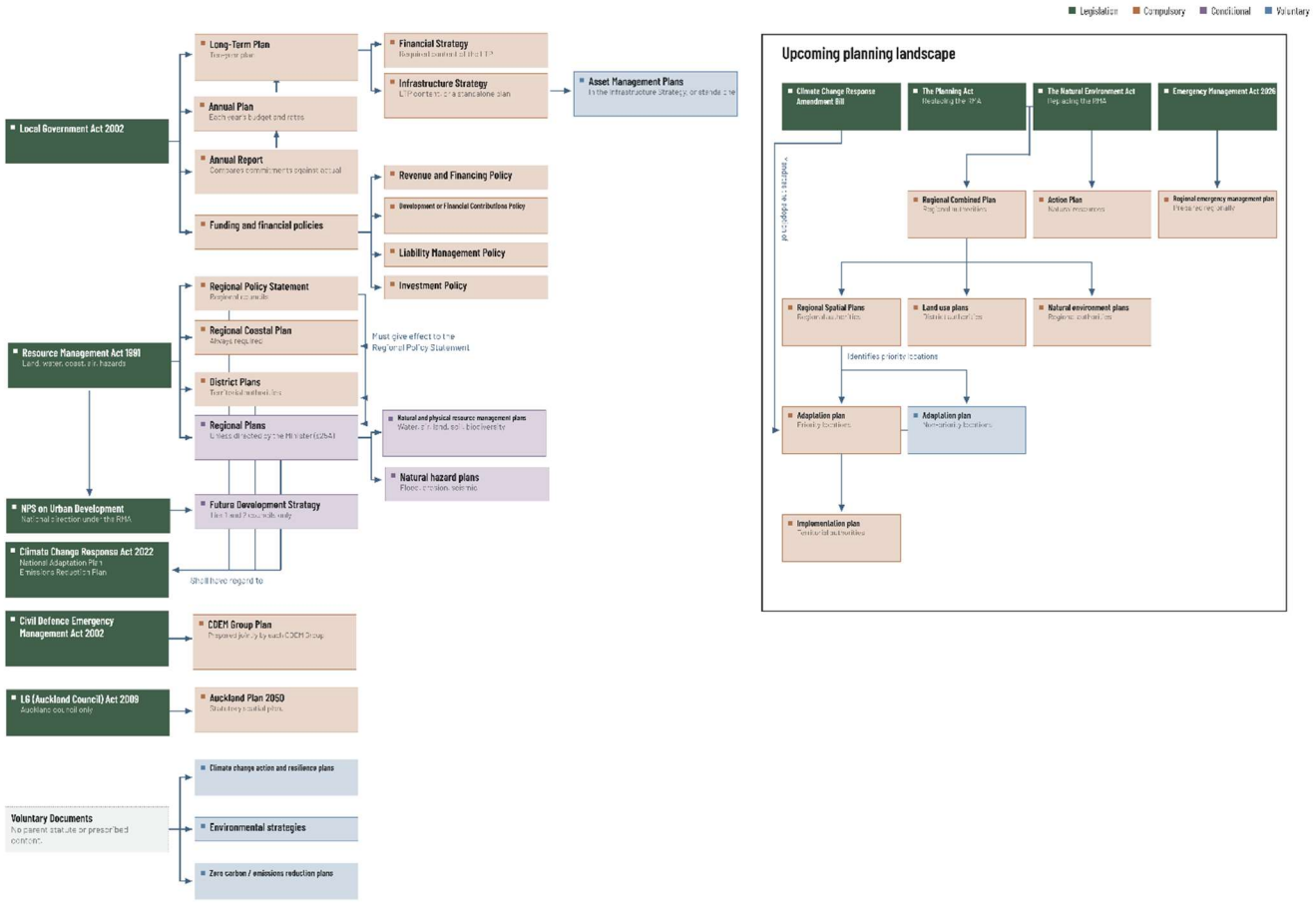


Figure 5: New Zealand Local Government Plans Analysed and Future Landscape

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