Climate Change Adaptation Policy

1. Purpose

Auckland Transport (AT) recognises that changing climatic conditions will significantly impact the Auckland transport network including AT controlled operations, services, and assets.

The purpose of this policy is to assist the organization to prepare for and adapt to climate related risks and impacts across all aspects of AT's business including:

- demonstrating commitment to well-informed climate related decision making.
- supporting early and systemic identification, analysis and assessment of climate related risk and impacts.
- supporting the development of plans, standards, and activities for controlling, mitigating, and adapting to climate related risks and impacts.
- highlighting key roles and responsibilities for the management of climate related risk and impacts.

The policy aligns with the National Adaptation Plan infrastructure objectives:

- reduce the vulnerability of assets exposed to climate change
- ensure all new infrastructure is fit for a changing climate
- use renewal programmes to improve adaptive capacity

This policy also contributes towards the delivery of AT's sustainability goals:

- restore and protect the wellbeing of Auckland's living systems;
- accelerate Auckland's transition to our low-emissions, climate resilient future; and
- provide inclusive access to social and economic opportunities.

2. Scope

This policy applies to:

- All AT employees (including fixed and temporary employees)
- All AT representatives, including contractors, consultants, secondees, agency temps and volunteers;

3. Policy Principles

The AT approach to climate change is applied in accordance with the following principles:

Minimise the impacts of climate change Reduce the vulnerability of assets exposed to climate change and prioritise the risk management of assets so that services can continue if disruption occurs.	**Minimise environmental and biodiversity impacts** AT adopts a precautionary approach towards proposed activities with effects on the environment and indigenous biodiversity that are uncertain, unknown, or little understood but potentially significant.

Our response is equitable Climate adaptation considers economic, social, and environmental issues equitably, and balances the needs of present and future generations.	**Our response is integrated** Our response to the changing climate is a dynamic and iterative process that is an integral part of all AT's organisational activities, and is part of the organisation's purpose, governance, leadership and commitment, strategy, objectives, and operations.
Prioritise activities Understand where infrastructure assets and their services are exposed and vulnerable to climate impacts and consider the capacities and opportunities of AT, suppliers, and the community to act. Use renewal programmes to improve adaptive capacity.	**Our decision making is robust** Consider long-term climate impacts when we design and invest in infrastructure, so the right infrastructure is in the right places. Manage risk by making decisions despite uncertainty, using the right tools, guidance, and methodologies to manage climate risks. Allow for uncertainty when planning for future risk.

4. Emissions, Biodiversity, and the Environment

Auckland Transport's *Hīkina te Wero: Environmental Action Plan 2020 – 2030* sets targets for a range of environmental outcomes, and actions to achieve them.

Auckland Transport acknowledges the complexity of assessing the emissions profile and biodiversity/environmental impacts of products and activities. In some cases, a product or activity may reduce emissions but adversely impacts biodiversity or the environment.

Proposed actions to reduce emissions, including product choices, should consider the impact on biodiversity and the environment as well as reductions in emissions.

Where new activities or products are proposed for the purpose of reducing emissions, the Environmental Team or the Design & Standards Team are available to assist in the assessment of overall benefit.

5. Assets

The planning, design and construction of new assets and renewals must consider adaptation to the physical impacts of the changing climate as forecast to be experienced over the lifespan of the asset; using either:

1. the Shared Socio-Economic Pathways scenarios given in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment as recommended by the Ministry for the Environment in their guidance document *Interim guidance on the use of new sea-level rise projections;* or

2. A Dynamic Adaptation Planning Pathway (DAPP) approach.

Technical Information by Development or Activity Type		
Development or Activity Type	**Risk Appetite adopted by AT Board[2]**	**Must demonstrate adaptation to the physical impacts of the changing climate as forecast below, over the lifespan of the asset[3]**
Greenfields development/ major new infrastructure[1]	Cautious	Avoid hazard risk using the **SSP5 - 8.5H+** trajectory.
Redevelopment (intensification) and existing development and infrastructure[1]	Cautious	**SSP5 - 8.5M or DAPP.** Adapt to hazards by conducting a risk assessment using SSP5 - 8.5M or using the DAPP approach. A SSP3 – 7.0M climate trajectory may be considered upon completion of a sensitivity assessment, based on criticality and location of assets.
Relocatable activities / developments / short-lived assets[1]	Cautious	**SSP3 – 7.0M or DAPP.** Adapt to hazards by conducting a risk assessment using RCP 6M or using the DAPP approach. A SSP2 - 4.5M climate trajectory may be considered upon completion of a sensitivity assessment, based on criticality and location of assets.
Trials of activities or assets investigating reductions in environmental impacts, emissions, or climate risks.	N/A	Require an approved project plan or business case demonstrating a balance between a high likelihood of successful delivery and a high degree of reward and value for money.

Notes:
1 – For projects in delivery at the time of policy adoption or amendment, changes to design may be implemented on a case-by-case basis as recommended by the Chief Engineer and approved by the Executive General Manager, Integrated Networks.
2 – Risk appetite is related to the risks to assets from forecast changes in climatic conditions.
*3 – SSP[number of scenario] - [RCP trajectory] e.g., SSP5 – 8.5 = SSP scenario 5 – RCP8.5. (**H+** means considerations are based on the upper end of the range. **M** means considerations are based on the median of the range.)*

Forecast conditions under each trajectory:

When implementing this policy, use the IPCC fifth assessment report, as well as the following forecast information for New Zealand conditions from the Ministry for the Environment and National Institute of Water and Atmospheric Research (NIWA) (see table below):

Forecasts for	Use these reference documents
Global forecasts	Fifth Assessment Report — IPCC Sixth Assessment Report - IPCC
Sea level (NZ) & Vertical Land Movement (VLM)	*Interim guidance on the use of new sea-level rise projections;* (www.mfe.govt.nz)

Forecasts for	Use these reference documents
Temperature	NIWA: Projected regional climate change hazards: Zone 1: Regional snapshot of projected climate changes and hazards https://niwa.co.nz/adaptationtoolbox/regionalprojections/zone1
Coastal instability & erosion	Auckland Council Technical Report, TR2017/030-3 - Auckland Region climate change projections and impacts (knowledgeauckland.org.nz) (September 2020) with associated GIS (Global Information Security) layers: Areas Susceptible to Coastal Instability and Erosion GIS map (Auckland Council)
Rainfall intensity	NIWA: 2018 High Intensity Rainfall Design System. Version 4 Prepared for Envirolink. HIRDS is a simple online tool that can estimate the magnitude and frequency of high intensity rainfall at any point in New Zealand. https://niwa.co.nz/information-services/hirds

Note: See Appendix 2 for a list of previous reference documents.

6. Organisational climate related risk appetite

The overall climate related risk (the "failure to appropriately respond to or prepare for the impacts of climate change including lack of planning for network resilience") is a 'cautious' risk appetite.

Auckland Transport has three subcategories of climate related risk:

Subcategory 1 - Mitigation: reducing greenhouse gases from users of the transport system and from AT's operations.	**Risk appetite: averse** Avoidance of risk and uncertainty in achievement of key deliverables or initiatives is paramount. Activities undertaken will only be those considered to carry virtually no residual risk.
Subcategory 2 - Adaptation: adapting AT's assets to the physical impacts of climate change, as discussed earlier in this section	**Risk appetite: cautious** Activities undertaken in the achievement of key deliverables or initiatives will only be taken where they have a low degree of residual risk. The associated potential for reward / pursuit of opportunity is not a key driver in selecting activities.
Subcategory 3 - Transition: responding to the non-physical impacts of climate change during the transition to a low-carbon and climate-resilient future.	**Risk appetite:** AT's risk appetite for transition risks is yet to be defined. AT is exploring the climate-related transition risks, and its risk appetite will be updated once it has a better understanding of the risk landscape.

The overall climate related risk appetite and subcategory risk appetites must be considered during planning, design and construction of new assets and renewals; procurement and any other Auckland Transport activities.

This section may be updated with policy owner approval following any change to the Finance and Assurance Committee endorsed climate related risk appetite.

7. Definitions

Term	Definition
Dynamic adaptation policy planning (DAPP)	Dynamic adaptive policy pathways, which anticipates pathways of adaptation options or actions, working with the widening uncertainties in sea-level rise projections and being responsive (dynamic) to the ensuing changes.
Physical risks	Risks that are directly related to the physical impact of a climate hazard.
Representative Concentration Pathways (RCP)	e.g., RCP4.5, RCP6, RCP8.5 Representative concentration pathways, comprising radiative forcing scenarios for deriving climate-related projections in the Fifth Assessment Report by IPCC on climate change (published 2013–14) and combined with SSPs in the Sixth Assessment Report by IPCC on climate change (published 2021–22).
Risk (ISO (International Standards Organisation) 31000)	The effect of uncertainty on objectives
Risk appetite (ISO 73)	The amount and type of risk AT is prepared to pursue or retain.
Risk management (ISO 31000)	Coordinated activities to direct and control AT with regard to risk. The planned and systematic approach to the identification, evaluation and control of risks which threaten the achievement of AT's objectives
Shared Socio-economic Pathway (SSP)	Shared socio-economic pathways, comprising socio-economic assumptions driving emissions, used in the Sixth Assessment Report by IPCC on climate change (published 2021–22) to complement RCPs, to produce climate-related projections. Five SSPs are named: SSP1-1.9, SSP1-2.6, SSP2-4.5, SSP3-7.0 and SSP5-8.5, with the latter numbers relating to the RCPs.

8. Roles and Responsibilities

Role	Responsibility
Approval Authority: Auckland Transport Board (Board)	• Review and endorse an appropriate governance structure for climate change management, including, where appropriate, board and executive level committees and delegated authorities. • Approve AT's climate risk appetite levels. • Monitor the organisation's management of climate related risks through review of regular risk reporting by management. • Approves new and significantly amended Climate Adaptation Policy.
Policy Owner: Executive General Manager, Planning & Investment	• Approves Climate Adaptation Policy updates to reference documents and updates to endorsed climate related risk appetite. • Ensure policy is up-to-date and is based on the best available information to meet its Purpose and Principles.

Role	Responsibility
Policy Contact: Transport Sustainability Team	• The subject matter experts in this policy area. • Work with other staff to ensure strategy, policies, processes, business practices, guidelines, approvals, governance, and oversight to enable effective implementation of this policy.
Chief Engineer	• Climate adaptation and Environmental assessment is led by AT's **Chief Engineer**. • Adaptation activities are led by senior management in the **Health & Safety, Service Delivery, Integrated Networks** and **Planning & Investment** departments, to ensure that risk management and resilience is embedded within the organisation in a manner that corresponds directly to the key risk areas identified in Climate Risk Assessments. • Recommends changes to designs on a case-by-case basis, where a design was approved prior to a change in this policy but has not yet been implemented.
Executive General Manager, Integrated Networks	• Holds delegated financial authority for approving changes to designs as recommended by the Chief Engineer.
All employees and AT representatives	• Understand and comply with this policy. • Understand the climate risks and impacts relevant to their area of responsibility and follow the associated policy and procedures.
All People Managers	• Understand the organisational climate related risk appetite. • Actively lead and promote the implementation of the Climate Policy within their business areas and groups. • Responsible for embedding a culture of proactive emissions reduction and climate adaptation in their area/s of responsibility. • Report on climate change related performance to appropriate Executive General Manager (EGM).
Executive Leadership Team (ELT)	• Endorse the Climate Adaptation Policy. • Understand the organisational climate related risk appetite. • Actively lead and promote implementation of this policy across the organisation. • Accountable for the implementation of this policy across the business areas under their control. • Resolve conflicting objectives that may arise from mitigation of or adaptation to changing climatic conditions. • Ensure the organisation has the structures, processes, and accountability to support climate-related decision-making. • Provide information to allow the Board of Directors to understand changing climatic conditions may have material impacts on the organisation's objectives, and the effectiveness of current controls.
The Finance & Assurance Committee (FAC) and / or Climate Governance Working Group (to be established)	• Review climate risk appetite levels for approval by the Board. • Monitor the organisation's management of climate related risks through review of regular risk reporting by management. • Review new and significantly amended Climate Adaptation Policy.

9. Supporting Information

Legislative compliance	This Policy supports Auckland Transport's compliance with the following legislation: • Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021 • Local Government (Auckland Council) Act 2009
Supporting documents	• Climate change Risk Assessment • Risk Management Framework • Risk Policy • Asset Management Plans • Adaptation Plans
Related documents	• Hīkina te Wero: Environment Action Plan

10. Non-Compliance

Climate risk and impact management supports compliance to multiple governance, legal, regulatory, government and shareholder requirements. Non-compliance perceived or otherwise, with those requirements can lead to increased scrutiny, investigations and reviews, penalties and in extreme circumstances prosecution and fines.

11. Approval & Review

AT recognises the need for regular review of this policy as:

- the data and methodologies used to measure, attribute, or forecast climate related risk and impact are not yet mature; and
- there are a wide range of uncertain outcomes of when climate risks will impact assets.

Policy Owner:	**Policy Contact:**
Executive General Manager Planning & Investment	Head of Transport Sustainability
Endorsed by:	**Approved by:**
Interim Chief Executive	Auckland Transport Board
Effective date:	**Next review date:**

AT reserves the right to review, amend or add to this policy at any time upon reasonable notice to employees and representatives.

Appendix 1: Sea level rise quick reference

Excerpts from the Ministry for the Environment guidance document *Interim guidance on the use of new sea-level rise projections;* [May be updated at any time with approval from the policy owner]

Figure 1: Comparison of new NZSeaRise projections with 2017 coastal hazards guidance projections from 2000 to 2150

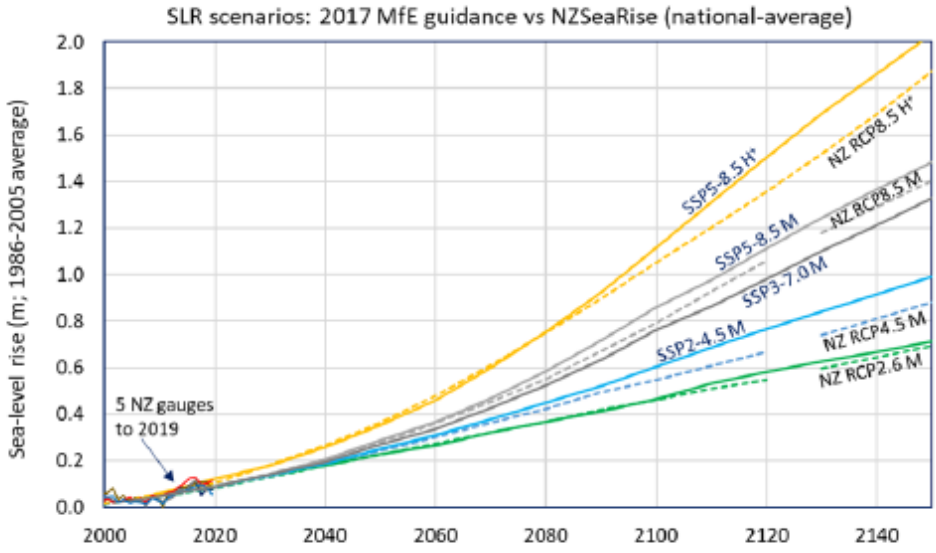

Table 1: Decadal increments for averaged "medium confidence" projections of SLR applied nationally

Year	SSP1–2.6 M (median) [m]	SSP2–4.5 M (median) [m]	SSP3–7.0 M (median) [m]	SSP5–8.5 M (median) [m]	SSP5–8.5 H* (83rd percentile) [m]
2005	0	0	0	0	0
2020	0.06	0.06	0.06	0.06	0.09
2030	0.11	0.11	0.11	0.11	0.15
2040	0.15	0.16	0.16	0.18	0.23
2050	0.20	0.22	0.24	0.26	0.32
2060	0.24	0.28	0.31	0.34	0.43
2070	0.29	0.35	0.40	0.44	0.57
2080	0.34	0.42	0.50	0.56	0.72
2090	0.38	0.49	0.61	0.69	0.90
2100	0.44	0.57	0.73	0.83	1.09
2110	0.50	0.66	0.83	0.95	1.28
2120	0.55	0.74	0.95	1.08	1.47
2130	0.60	0.81	1.07	1.21	1.66
2140	0.64	0.89	1.19	1.34	1.84
2150	0.68	0.96	1.30	1.46	2.01

Notes for table 1: Decadal increments for average[11] "medium confidence" projections of sea-level rise (metres above 1995–2014 baseline) applied nationally and excluding any regional and local factors including VLM. For local or regional scale sea-level rise projections, use the NZSeaRise maps in Takiwā[12] and downloaded datasets to create a similar table.

Appendix 2: Tracking Reference Documents

Reference documents in this policy may be changed at any time with approval from the policy owner.

As decisions may be based on the reference documents provided by this policy at a point in time (such as design and cost estimates) a record must be kept of what reference documents have previously been in use and the time periods they were applicable.

The following list provides a record of previous reference documents.

Forecasts for	Use these reference documents	Period of use