

# Mihi

Noho mai rā Tāmaki Makaurau,  
 moana waipiata,  
 maunga kākārīki.  
 Mai i ngā wai kaukau o ngā tūpuna,  
 ki ngā puke kawē i ngā reo o te tini,  
 i puta ai te kī mōu.  
 Tū ana he maunga,  
 takoto ana he raorao,  
 heke ana he awaawa.  
 Ko ō wahapū te ataahua,  
 ō tāhuna te mahora,  
 te taiao e whītiki nei i a koe he taonga tuku iho.  
 Tiakina kia meinga tonu ai koe  
 ko 'te tāone taioreore nui o te ao,  
 manakohia e te iwi pūmanawa'.  
 Tāmaki Mākaurau tirohia te pae tawhiti  
 he whakairinga tūmanako  
 mō ngā uri whakaheke o āpōpō,  
 te toka herenga mō te hunga ka takahi ake  
 mā ō tomokanga,  
 te piriti e whakawhiti ai  
 tō iwi ki ngā huarahi o te ora.  
 Tāmaki Mākaurau e toro whakamua,  
 hīkina te mānuka.  
 Tērā te rangi me te whenua te tūtaki.  
 Maranga me te rā, he mahi māu me tīmata,  
 ka nunumi ana ki te pō,  
 whakatārewahia ō moemoeā ki ngā whetū.  
 Ko te oranga mutunga mōu  
 kei tua i te taumata moana.  
 Whakatuwherahia ō ringa, kūmea mai k i tō uma.  
 Tāmaki Makaurau  
 he tāone ūmanga kurupounamu koe;  
 tukua tō rongō kia rere i te ao.

Tāmaki Makaurau  
 who bestrides shimmering seas,  
 and verdant mountains.  
 From the bathing waters of our forebears,  
 and hills that echo with voices  
 that acclaim.  
 Your mountains stand lofty,  
 your valleys spread from them  
 and your streams run freely.  
 Your harbours are majestic,  
 your beaches widespread,  
 the environment that surrounds you is a legacy.  
 Take care of it so that you will always be known  
 as 'the world-class city  
 where talent wants to be'.  
 Tāmaki Makaurau looking to the future,  
 repository of our hopes  
 for generations to come,  
 anchor stone for those who venture  
 through your gateway,  
 and the bridge that connects  
 your citizens to life.  
 Tāmaki Makaurau moving on,  
 accepting all challenges.  
 Where even heaven and earth might meet.  
 Rise with the sun as there is work to be done  
 and when evening comes,  
 allow your dreams to glide among the stars.  
 Perpetual health and growth  
 is beyond the horizon of cresting waves.  
 Open your arms and pull them to your embrace.  
 Tāmaki Makaurau, you are a city  
 where valued business and enterprise thrives;  
 let your good name traverse the world.

# Te Rārangi Kaupapa Contents

Nau mai ki ngā kōrero mō mātou  
**Welcome to our story** ..... 5

Nā te Tumu Whakarae  
**From the Chief Executive** ..... 7

Tūponotanga mō te rerekētanga o te āhuarangi  
**Climate change risk** ..... 8

Te Hautūtanga  
**Governance** ..... 9

He rautaki  
**Strategy** ..... 11

Te whakahaere tūraru  
**Risk Management** ..... 17

Ngā aronga me ngā tatauranga  
**Metrics & Targets** ..... 19

Ngā Urupare a te Hinonga i ngā Tūraru mō te huarangi  
**Entity Climate Risk Response** ..... 21

    Auckland Council ..... 22

    Auckland Transport ..... 24

    Watercare ..... 26

    Auckland Unlimited Limited and Regional Facilities Auckland (Trust) ..... 29

    Eke Panuku ..... 31

    Ports of Auckland ..... 33

    Glossary of terms ..... 35

    How to contact the council ..... 35

## Nau mai ki ngā kōrero mō mātou Welcome to our story

Auckland is a beautiful city, with diverse and vibrant communities. The Auckland Council Group’s dedicated staff are committed to meeting your needs by delivering essential and equitable services and investing in the future of our region in a sustainable way.

This report tells the story of how the council and its subsidiaries are responding to climate-related risks for the entire Auckland region.

This report covers the Auckland Council Group, which is made up of Auckland Council, the Ports of Auckland Limited and five substantive council-controlled organisations (CCOs) that include Auckland Transport Limited, Watercare Services Limited, Panuku Development Auckland Limited (Eke Panuku), Auckland Unlimited Limited and Regional Facilities Auckland. The latter two entities share sustainability teams and have provided a joint response.

### Finding your way around the volumes:

<b>Volume 1</b>	<b>Volume 1: Overview and Service Performance</b>	 <p>An overview of the group covering financial and non-financial performance of the group.</p>
<b>Volume 2</b>	<b>Volume 2: Local Board reports</b>	 <p>A collection of individual annual reports for each of the 21 local boards, reporting financial and non-financial performance.</p>
<b>Volume 3</b>	<b>Volume 3: Financial Statements</b>	 <p>The financial statements of the Auckland Council Group and Auckland Council for the year ended 30 June 2021.</p>
<b>Volume 4</b>	<b>Volume 4: Climate change risk</b>	 <p>A summary of the group's climate-related financial risks and opportunities.</p>



## Nā te Tumu Whakarae From the Chief Executive

Climate change is one of the biggest challenges facing the Auckland region.

Auckland is projected to experience an increase in hot days, a rise in annual average temperatures, and more extreme rainfall events. The Auckland Council Group is committed to investing in climate action. In response to the threat of climate change, we adopted Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan in July 2020. This plan commits the region to a 50 per cent reduction in greenhouse gas emissions by 2030, achieving net zero emissions by 2050 and adapting to the impacts of climate change. We recognise that responding to climate change will require drastic changes to our organisation.

As we transition towards a zero-carbon economy, identifying and disclosing our climate-related financial risks is key to providing a transparent view to improve our stakeholders' understanding of the financial implications associated with climate change. The group has been an early adopter of the Taskforce on Climate-related Financial Disclosures (TCFD) recommendations in New Zealand and have voluntarily disclosed under the framework for the last two years. Applying the recommended disclosures of TCFD requires the group to make fundamental changes to our organisation to ensure climate risk management is embedded into our governance structures, strategic, and financial planning processes. It is our belief that effective disclosures can lead to real and meaningful change in how the group is managed for the benefit of all.

This year's disclosure details our climate risk management processes and how the group is embedding climate risk management into our financial planning processes, such as our long-term plan. Our 10-year Budget 2021-2031 has set aside \$152 million for investment in climate change activity. Some of the projects that have been enabled through this investment package includes planting 200 hectares of native forest, procuring electric and hydrogen powered buses, and increasing our resource recovery network i.e., recycling.

Although we are still at the beginning of our TCFD journey, we view this as an important milestone towards providing more transparency to our stakeholders on key sustainability matters. We are pleased to share the group's third climate-related disclosure, aligned to the TCFD recommendations.

**Jim Stabback**  
Chief Executive



Tūponotanga mō te rerekētanga o te āhuarangi  
**Climate change risk**

The Auckland Council Group has identified climate change as a top risk and material issue and is working to better understand and manage our exposure. We are committed to supporting a resilient and low carbon economy by reducing our greenhouse gas (GHG) emissions and preparing for the impacts of climate change.

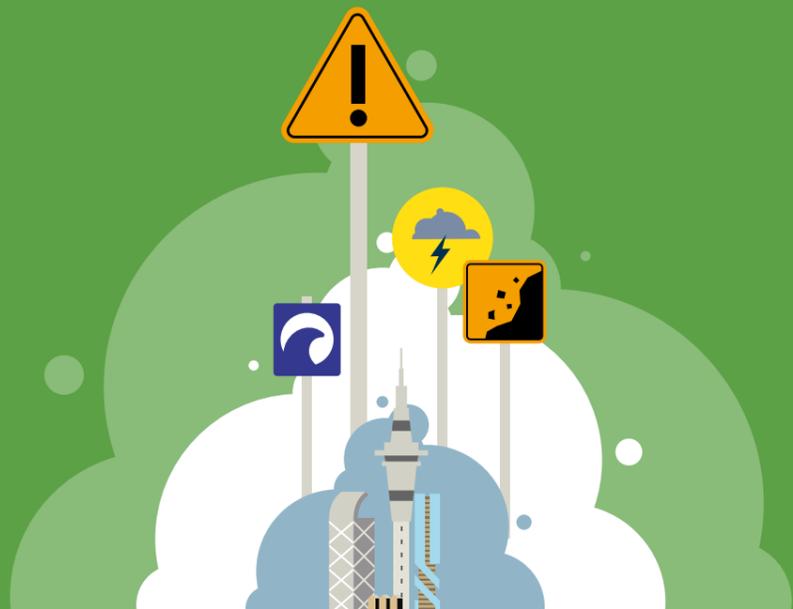
The group has several commitments that guide our response to climate change:

- committed to climate action as a member of C40 cities
- committed to deliver clean and healthy air through the C40 Green and Healthy Streets Declaration
- committed to zero waste by 2040 as part of the C40 Zero Waste Declaration
- endorsed the C40 Global Green New Deal which involves putting inclusive climate action at the centre of all urban decision-making
- the group is a signatory of the Climate Leaders Coalition and has several commitments that guide the group on its climate change response
- committed to voluntarily measure and report our GHG emissions, and work with our suppliers to reduce their emissions
- committed to disclosing our climate-related financial risks and opportunities under the Task Force on Climate-related Financial Disclosures (TCFD) framework.

**“Huri te ao, huri ngā tikanga”**

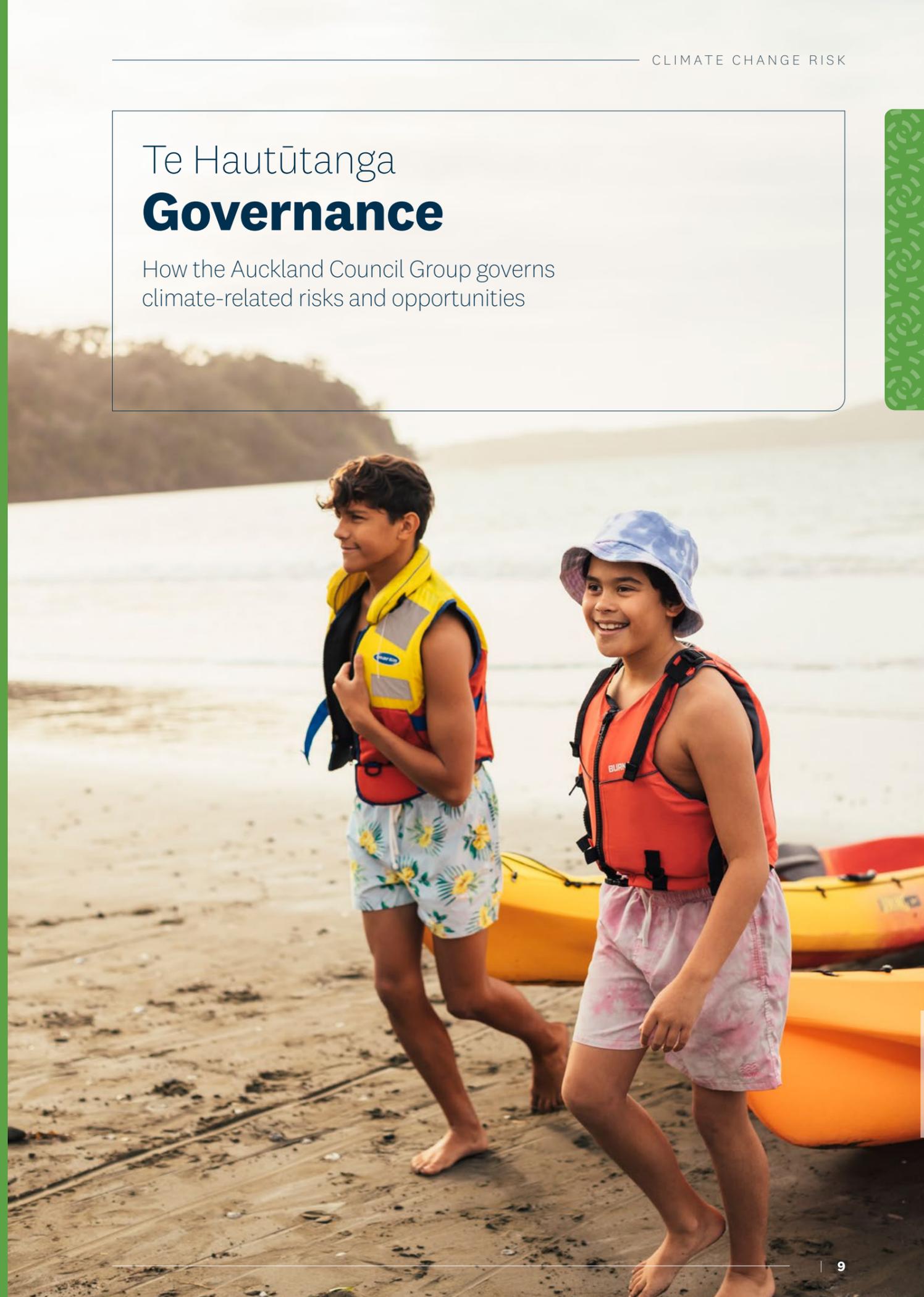
*Protect and strengthen the realms of the Land and Sea, and they will protect and strengthen the People.*

Although we are still at the beginning of our TCFD journey, we view this disclosure as an important milestone towards providing more transparency on key sustainability matters to our stakeholders. We will continue to refine and expand our disclosures as the sustainability landscape evolves with new information and greater standardisation.



Te Hautūtanga  
**Governance**

How the Auckland Council Group governs climate-related risks and opportunities



## Te Hautūtanga Governance

The Auckland Council Group is governed by the elected governing body, elected local boards, and respective boards of each subsidiary.

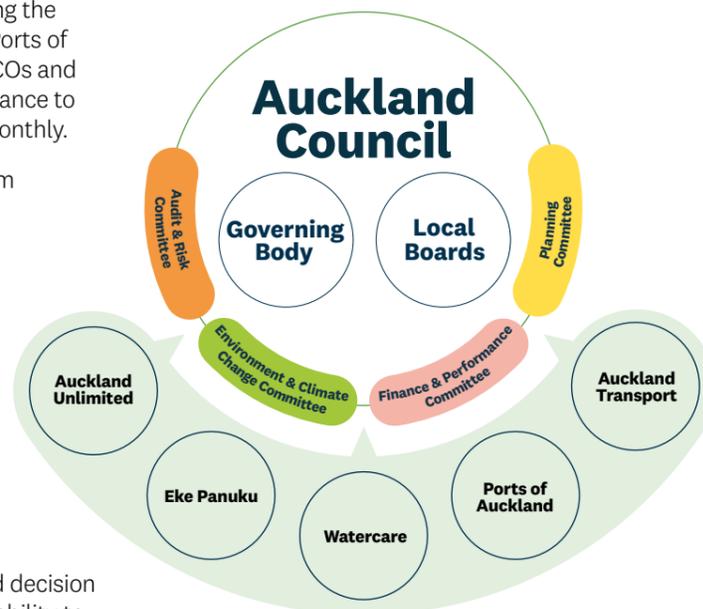
The governing body has delegated authority for the oversight of region-wide climate change related matters to the following committees:

Environment and Climate Change Committee	Audit and Risk Committee	Finance and Performance Committee	Planning Committee
<p>Meets 6 times a year and has ultimate responsibility for climate change policy and strategy and oversees progress of Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan.</p>	<p>Meets 6 times a year and has responsibility for ensuring appropriate responses to risk in the organisation. Management provides the committee with a quarterly update on the organisation's response to risk, including climate change risk.</p>	<p>Meets around 10 times a year and recommends adoption of the group's long-term plan, including funding for addressing climate change risks.</p>	<p>Meets 10 times a year and oversees the physical development and growth of Auckland.</p>

Auckland Council and its subsidiaries (including the council-controlled organisations (CCOs) and Ports of Auckland) report to these committees. The CCOs and Ports of Auckland also report on their performance to the CCO Oversight Committee which meets monthly.

The group prepares a 10 year budget (long term plan) every three years. The finance and performance committee reviews the plan in detail, and when satisfied, recommend that the governing body adopts it. The 2021-2031 budget includes a climate change investment package to accelerate climate action.

All matters taken to the governing body, local boards and governing body committees for oversight or approval require a political report. All political reports include a climate impact statement to identify the impact of a proposed decision on greenhouse gas emissions and Auckland's ability to respond to climate change. This ensures that climate change is considered in all decisions and that those in governance are fully informed of the impact of their decisions.



► You can read more on how each entity assesses and manages climate risks and opportunities in the **Entity Climate Risk Responses** section from page 22 onwards.

## He rautaki Strategy

Impacts of climate-related risks and opportunities on the Auckland Council Group's strategic and financial planning



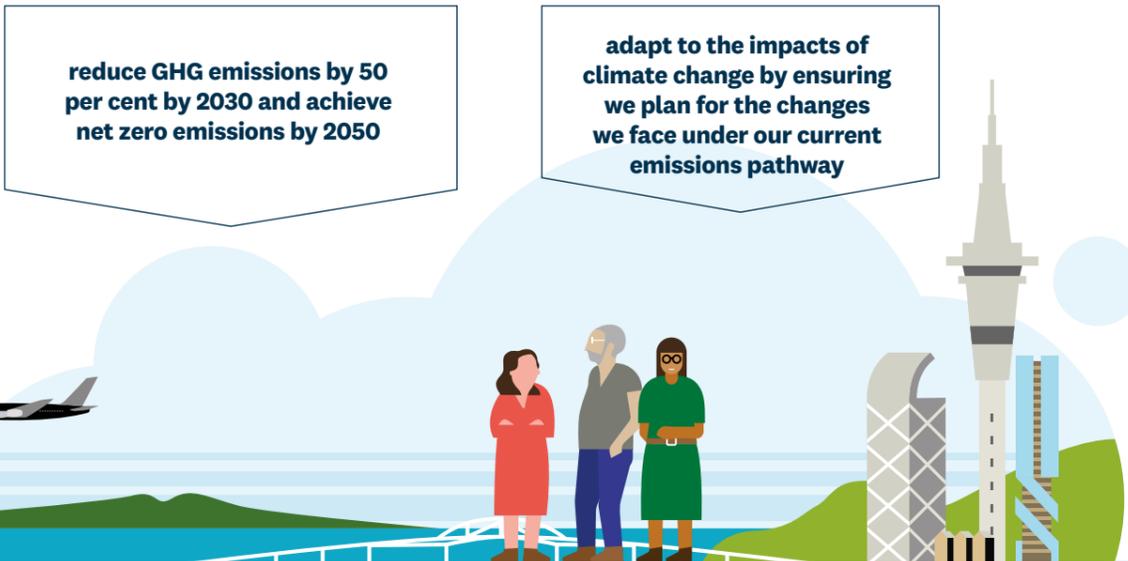
# He rautaki Strategy

As guardians of Auckland’s social, natural, economic and financial environment, the Auckland Council Group considers the impact of climate change on the organisation and the region.

The group’s vision for how Auckland will grow over the next 30 years is outlined in the Auckland Plan 2050 which responds to the three major challenges facing the region:

- population growth and its varied implications
- sharing the benefits of growth equally among all Aucklanders
- reducing environmental degradation.

Two core goals were established for the region through Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan and eight priority action areas identified to deliver these goals. The two core goals are:



The delivery of Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan will require collective action and partnerships with central government, mana whenua, local boards, businesses, individuals, communities, rangatahi and academia. The Auckland Council Group is already taking action that contributes towards Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan and responds to the risks from climate change:

- Watercare will significantly invest over the next 10 years in increasing the resilience of water supply and wastewater systems to support the regions response to climate impacts, such as droughts and extreme weather events
- Auckland Transport will invest in improving public transport and walking and cycling infrastructure, as outlined in the draft Regional Land Transport Plan 2021-2031, enabling low carbon transport and converting streetlights to LED lighting
- Ports of Auckland is increasing the use of rail and freight hubs, investing in LED lighting, and using hydrogen as an alternative source of fuel.

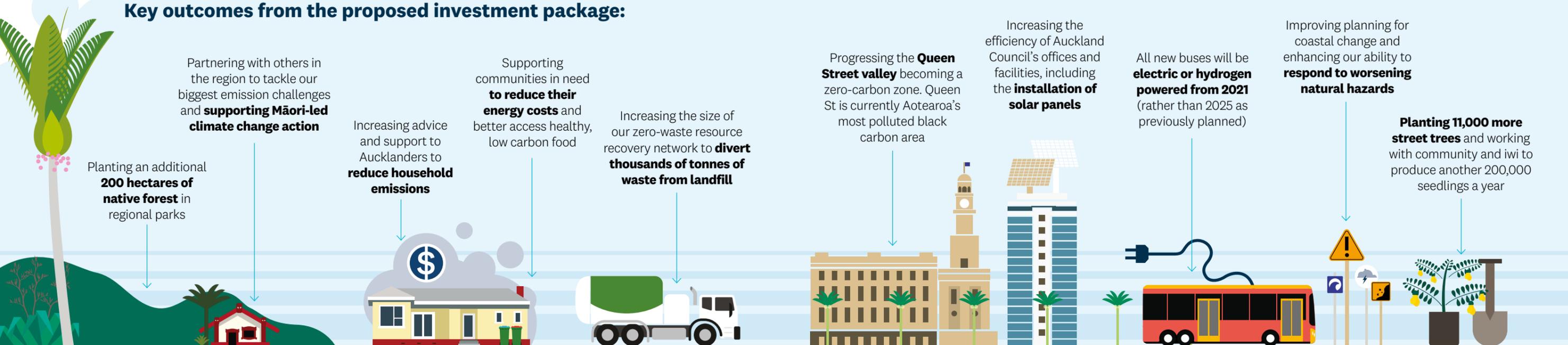
Pursuing sustainable financing mechanisms, such as the group’s green bond programme, has helped fund the group’s contribution towards climate action and will continue to direct capital towards sustainable outcomes over the next 10+ years. However, there is still more work to be done which is why the group has identified climate action as a priority for investment in the 10-year Recovery Budget 2021-2031.

Staff from across the group submitted programmes that contribute to the group’s goals of reducing GHG emissions and adapting to the impacts of climate change. A range of programme proposals were developed and then assessed for impacts. The assessment process considered the impact of programmes on reducing emissions and adaptation (as the primary criteria) and the impact on equity, Māori outcomes and other social, economic, environmental and financial outcomes. Programmes were then prioritised and several options for a climate action investment package were presented to elected members and mana whenua for their feedback.

A \$152 million climate action investment package was then included in the 10-year Recovery Budget 2021-2031. This package is just part of the group’s investment in achieving climate outcomes.

As well as integrating climate risk into our financial planning, we are embedding climate risk management into the group’s strategic planning processes.

## Key outcomes from the proposed investment package:

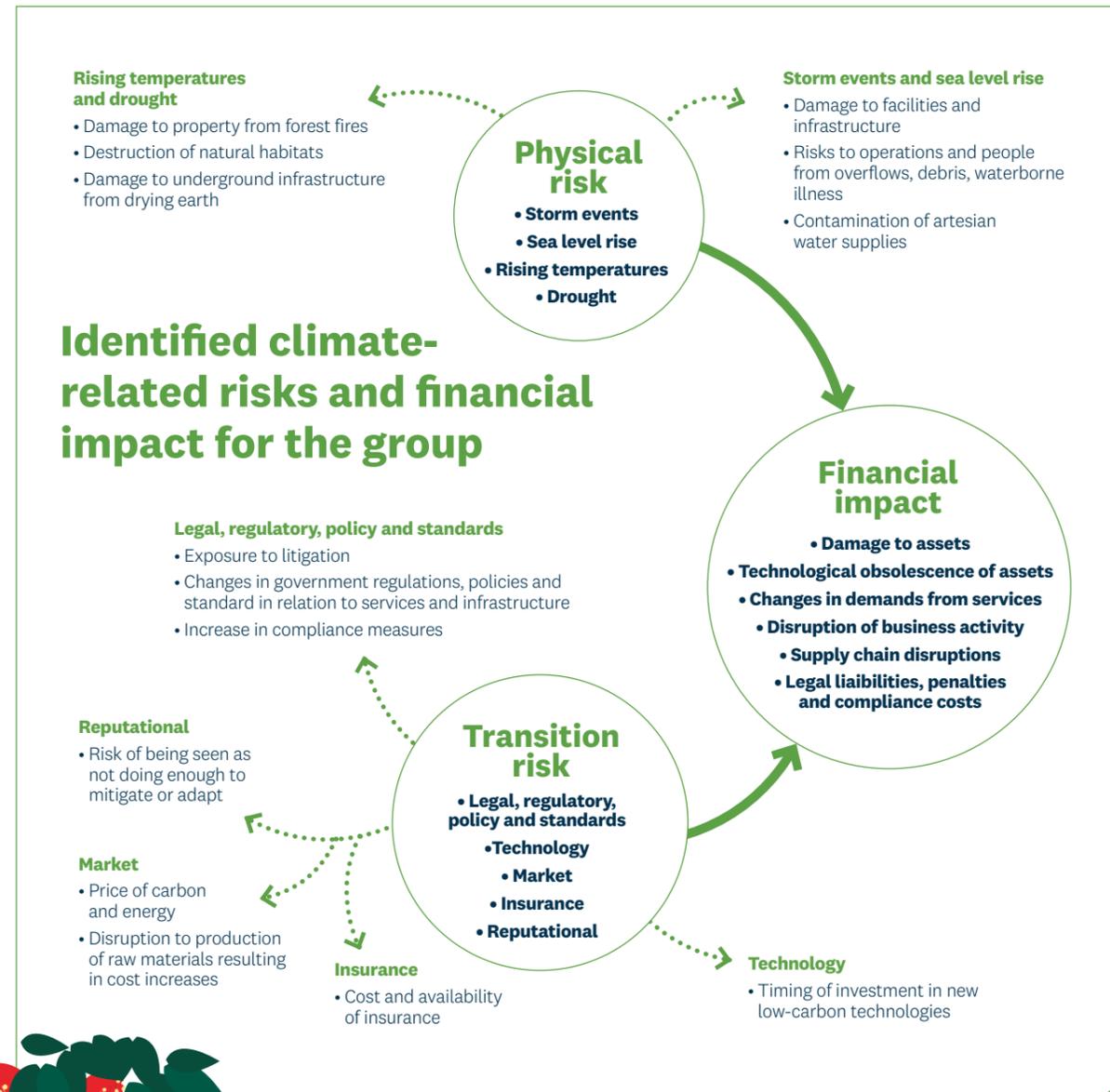


## Climate-related risks and opportunities

This year the group did a stocktake of previously identified climate-related risks for the region.

The results provide a baseline for assessing the group's most material risks that need further analysis.

Risks and financial impacts on the group are as follows:



The greatest climate-related opportunities available to the group are:

- reduced operating costs from increased energy efficiency and reduced reliance on fossil fuels
- access to green financial products with favourable terms (e.g. sustainability linked loans, sustainability linked bonds) to support business growth
- onsite electricity generation microgrids to increase resilience to network disruption.

In 2021/2022 we will carry out a climate risk assessment using scenario analysis to identify organisational climate-related financial risks and opportunities. This will help us better understand how we might perform under different climate states and help us make better strategic and financial decisions.

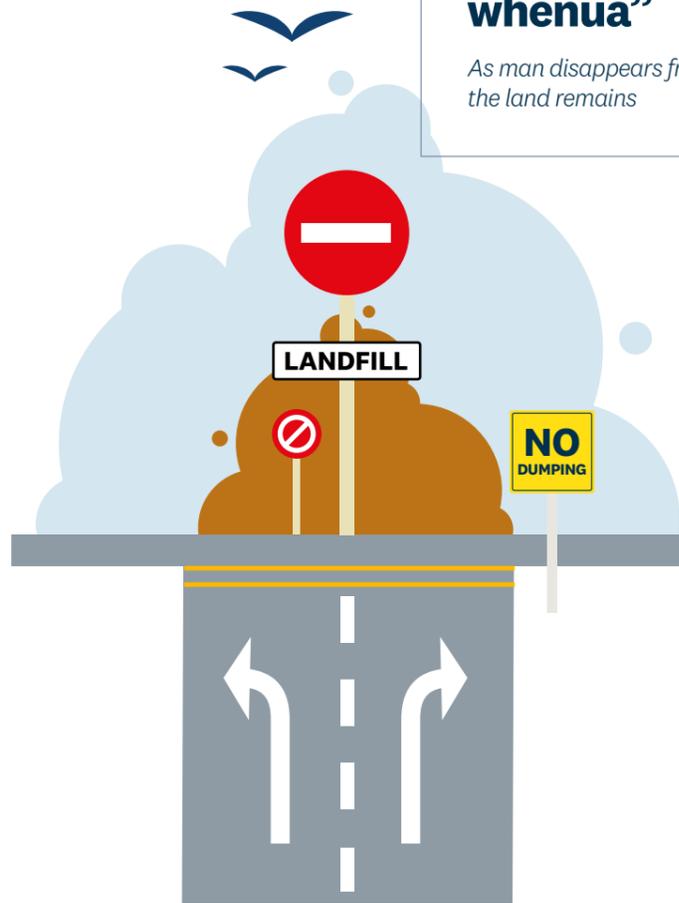


We will identify climate-related risks against three time horizons (short, medium, and long-term) and two types of climate scenarios that allow the group to account for the full range of implications of climate change. A single series of broader population and socio-economic assumptions will be established to provide some boundary conditions for the assessment.

The organisations in the group are at different stages on their TCFD journey, as outlined in the Entity Climate Risk Responses starting on page 22. We will incorporate the existing climate risk related work of all group entities as part of ongoing efforts to develop a more consistent response, recognising that many of our risks are interconnected.

**“Whatungarongaro te tangata toitū te whenua”**

*As man disappears from sight, the land remains*



Te whakahaere tūraru  
**Risk management**

How the Auckland Council Group identifies, assesses, and manages climate-related risks



Te whakahaere tūraru

# Risk Management

The identification and management of risks is the responsibility of each entity in the group.

All entities have risk policies and frameworks that align with the ISO 31000:20188 Risk Management standards. The objective of each framework is to ensure appropriate oversight, management and escalation of risks, including climate-related risks. Risk frameworks are based on the three lines of defence approach. Management's role in assessing and managing climate-related risks is as follows:



In addition to the above, the Auckland Council Chief Sustainability Office and subsidiary sustainability teams provide subject matter expertise to assist with identification and assessment of climate-related risks and opportunities.

► **Further information about how each group entity identifies, assesses and manages climate-related risks is outlined in the Entity Climate Risk Responses from page 22 onwards.**

# Ngā aronga me ngā tatauranga Metrics & Targets

Metrics and targets the Auckland Council Group uses to assess and manage climate related risks and opportunities



The Auckland Council Group (excluding Ports of Auckland) has committed to a 50 per cent reduction in GHG emissions by 2030 against a 2017 baseline and net zero emissions by 2050; Ports of Auckland has set a target to become a zero emissions port by 2040.

Each organisation within the group measures the emissions associated with their operations and has set organisational emission reduction targets that contribute towards the group target of a 50 per cent reduction in group GHG emissions by 2030 (excluding Ports of Auckland). Some of these targets will be used as outcome measures in the group's 10-year Recovery Budget 2021-2031 (long-term plan).

Additional emission reduction targets that have been set by the group include:

Auckland Council	Ports of Auckland	Eke Panuku	Watercare	Auckland Unlimited	Auckland Transport
Reducing emissions from fleet activity by 50 per cent by 2025	Zero emissions port by 2040	Reducing emissions by 35 per cent by 2030, including separately reducing scope 1 & 2 emissions by 41 per cent by 2030	Reducing emissions associated with the construction of infrastructure by 40 per cent by 2024	Diverting 70 per cent of waste from landfill from cultural festivals	Reducing emissions from operations by 50 per cent by 2030 and converting all Auckland Transport-owned streetlights to LED by 2022
Improving electrical efficiency in Auckland Council buildings by 20 per cent by 2030	Increasing annual sourcing of renewable electricity from 0 per cent in 2017 to 100 per cent by 2030				
Reducing Auckland Council's in-house office waste by 60 per cent per capita by 2024					



As part of the 10-year Recovery Budget 2021-2031 the group also funded initiatives that will contribute towards further reducing GHG emissions through:

- purchasing only clean electric and hydrogen buses from 2022
- installing solar electricity generation on community facilities
- installing electric heat pumps in some facilities
- implementing a sustainable asset standard policy for community facilities to improve the way we build, maintain and renew public assets
- introducing solar photovoltaic (PV) and battery technology at three Watercare sites.

Several climate-related performance measures were identified for the 10-year Recovery Budget 2021-2031. These include:

- GHG emissions Scope 1 & 2 (tonnes, percent change vs baseline)
- number of native plants planted
- number of Aucklanders engaged in living low carbon lifestyles
- percentage of schools engaging in sustainability education programmes.

The group's GHG emission sources have been classified into the following categories:

- **direct GHG emissions (Scope 1)** – includes emissions from sources owned or controlled by the group
- **indirect GHG emissions (Scope 2)** – includes emissions from the generation of purchased electricity, heat or steam consumed by the group
- **indirect GHG emissions (Scope 3)** – includes emissions that occur as a consequence of the group's activities but occur from sources not owned or controlled by the group.

Emissions are stated in tCO2e (metric tonnes of carbon dioxide equivalent).

Toitū Envirocare audits the group's GHG emissions inventories. These audits are conducted in accordance with the Programme Verification Guidelines including ISO 14064-3:2006. They include a verification of emissions back to source data and a checking of calculations and assumptions. The inventory is aligned with industry or sector best practice for emissions measurement and reporting. These inventories are outlined in the Entity Climate Risk Responses from page 22 onwards.<sup>2</sup>

2. Note that some entities have different reporting base years. This is because Toitū Envirocare has been engaged to carry out verification at different years across the group.

Ngā Urupare a te Hinonga i ngā Tūraru mō te Āhuarangi

## Entity Climate Risk Responses

Further detail of each entity's response to climate change risks and opportunities.



# Auckland Council

## Governance

- **The Executive Leadership team** – owns the organisation’s top risks and oversees Auckland Council’s strategic approach to climate change.
- **Cross-organisation Climate Steering Group** – general managers of relevant council departments and representation from the Council Controlled Organisations. This group oversees implementation of Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan and council investment in climate action.
- **The Chief Sustainability Office** – responsible for providing advice on climate change matters and working with the wider organisation to address climate-related risks and opportunities.

## Strategy

Auckland Council is now incorporating climate change considerations into work programmes and decisions because of the climate emergency declared by the group in June 2019.

The council’s Investment Delivery Framework outlines the way we approve and carry out projects. Information fields have been added to the business case and strategic assessment phase of this framework requiring authors to disclose how they considered climate change impacts. This will ensure decision-makers have the appropriate information to be able to consider the climate-related impact and risks of their decision. To further support this work, we are also co-developing a climate impact assessment tool with Beca, an engineering consultancy firm, to support council staff to prepare consistent and comparable climate statements for decision-makers.



Additionally, we have introduced sustainable procurement objectives and targets in line with the Sustainable Procurement Framework adopted by the Auckland Council Group in 2017. We have set clear objectives and targets to help us build sustainable outcomes into every dollar we spend and we are working closely with suppliers to gain a better understanding of greenhouse gas emissions and climate-risks present in our supply chain.

## Risk management

The Auckland Council enterprise risk framework covers all risk management, including evolving and emerging risks associated with climate change.

Enterprise risks are owned by the Executive Leadership team and are reviewed and updated in the organisation’s risk register on a quarterly basis by the Enterprise Risk team. The review includes updates to action plans to address gaps.

## Targets and metrics

Indicator	2016/2017 (Base Year) (tCO2e)	2019/2020 (tCO2e)	2020/2021 (tCO2e)
<b>SCOPE 1</b>			
Agriculture	4,970	5,931	6,069
Energy	7,781	5,474	6,820
Fugitive emissions & other gases	106	313	930
Transport	3,844	4,249	4,060
Waste	631	549	714
<b>Scope 1 Total</b>	<b>17,332</b>	<b>16,516</b>	<b>18,593</b>
<b>SCOPE 2</b>			
Electricity	6,957	4,499	4,768
<b>Scope 2 Total</b>	<b>6,957</b>	<b>4,499</b>	<b>4,768</b>
<b>SCOPE 3</b>			
Transport	905	6,313	7,066
Waste	257	2,069	1,531
Other	1,637	1,083	944
<b>Scope 3 Total</b>	<b>2,799</b>	<b>9,465</b>	<b>9,541</b>
<b>Total gross emissions</b>	<b>27,088</b>	<b>30,480</b>	<b>32,902</b>
Certified green electricity	-	-	-
<b>Net GHG emissions (all scopes)</b>	<b>27,088</b>	<b>30,480</b>	<b>32,902</b>

Auckland Council’s GHG emissions have increased by 8 per cent from 2019/2020. This is mainly due to increased activity in Council buildings in comparison to last financial year where we experienced a number of lockdowns which resulted in the temporary closure of many Council owned buildings. Emissions associated with the council’s buildings (combustion of natural gas and electricity), and the council’s farms and parks make up 56 per cent of the council’s GHG footprint. Emissions associated with our buildings will start to decrease as we begin the replacement of gas boilers with electric boilers in our community facilities.

Emissions associated with Council’s own transport have decreased by 4 per cent as a result of reduced travel across the organisation. We expect this figure to continue to decrease as we increase the number of low emission vehicles in our vehicle fleet. Emissions associated with waste collected from streetscapes and parks have also decreased this year by 26 per cent from 2019/2020. Scope 3 transport emissions, which include emissions associated with taxi, rental car and air travel, have increased by 12 per cent from 2019/2020. This is due to an increase in activity as a result of less time spent at COVID-19 Alert Levels 4 & 3 that restricted this activity.

An increase in GHG emissions was expected due to an overall increase in activity at our community facilities across the region. As part of our 10-year budget, we will be implementing several initiatives to reduce our operational emissions which will be reflected in our GHG inventory over the next five years.

# Auckland Transport

## Governance

- **Board of Directors** – provides governance over Auckland Transport’s risk management process and adaptation strategy and is responsible for approving the prioritisation of climate change risks. The board is also responsible for establishing Auckland Transport’s appetite for climate change risk.
- **Executive Leadership Team** – reviews and provides input into organisational policies, frameworks and systems that support Auckland Transport’s responses to climate change risk.
- **Management** – implements climate change risk management processes and ensures ‘owned risks’ have robust treatment plans and controls in place.
- **Transport Sustainability team** – leads the organisation-wide climate change risk response and works closely with the risk team, chief engineer and asset and finance teams to assess and price climate risk exposure, and develop the adaptation strategy.
- **Auckland Transport Assets team** – ensures risk management and resilience is embedded within the organisation and corresponds directly to the three key risk areas identified by the Climate Change Risk Assessment. Auckland Transport’s climate change adaptation strategy is led by Auckland Transport’s Environmental Specialist in the Chief Engineer’s team. Senior management in the Health & Safety, Service Delivery and Assets departments deploy the adaptation strategy.

All reports submitted to the Board for approval include a mandatory climate change considerations section. This must incorporate commentary on positive or negative impacts of all proposals on climate change, how proposals will impact operational and transport system emissions, and how climate change impacts will be addressed.

## Strategy

The Ministry for the Environment’s National Climate Change Risk Assessment Framework guides Auckland Transport’s approach to managing climate change risk. Auckland Transport also addresses climate change requirements set out by central government’s policy statement, Waka Kotahi New Zealand Transport Authority’s Regional Land Transport Plan and Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan.

Auckland Transport is in the process of modelling the financial materiality of its prioritised climate change risks against two scenarios, RCP 4.5 and RCP 8.5, for three timeframes: present day; 2050; and 2100. Funding decisions are made over a 10-year cycle (with three-yearly reviews). Auckland Transport has 30-year planning horizons where funding is confirmed for the first 10 years. These relatively long project planning and investment leads allow Auckland Transport to identify when tolerance thresholds are reached for assets and services and plan resource allocation in the relevant funding cycle.

Applying both RCP 4.5 and RCP 8.5 scenarios accounts for the deep uncertainty around how New Zealand, and the rest of the world, will perform against reducing emissions and addressing the impacts of climate change. New infrastructure and assets with a lifecycle of 50 years or more will be designed to an RCP 8.5 scenario.

The top risks are:

- increasing landslides damaging roads
- coastal hazards, such as damaged sea walls, roads and bridges from inundation, corrosion of steel components and the creation of a wet base
- coastal flooding disrupting public transport systems.

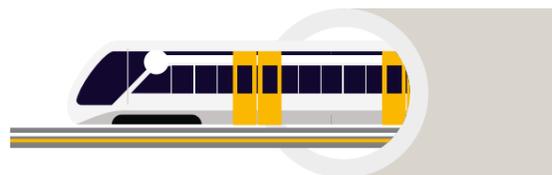
## Risk management

Auckland Transport’s Climate Change Risk Assessment identified 18 transition risks and 170 physical risks. Auckland Transport’s physical risks are classified under three key risk areas: health and safety; service delivery; and assets. Physical risks were rated using exposure and vulnerability criteria (vulnerability being a function of sensitivity and adaptive capacity).

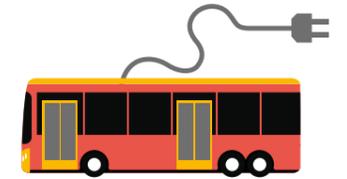
The transition risks were grouped into three primary categories: policy and legal; technology; and market. Secondary reputational risks were identified for 15 of the 18 risks.

Auckland Transport is embedding climate change risk management into business-as-usual practice through policy, standards, frameworks, manuals, plans and risk management tools, including:

1. Business Plan: Objective 6 of Auckland Transport’s Business Plan: improves the transport system and infrastructure’s sustainability and resilience to climate change.
2. Organisational Risk Management Framework: identifies macro risks for the organisation, including climate change risks, and high level responses.



3. Future Connect: maps strategic network links (those deemed critical for the movement of people, goods and services across the region) for each mode, identifying and prioritising sections of the transport network for development in 10-year cycles. Climate change risk-related geospatial data will be added to support planning decisions.
4. Enterprise Project Management Framework: provides project documentation, steps and stage-gates. Currently only climate change mitigation is considered.
5. Transport Design Manual: provides technical specifications assets must meet. Specifications related to climate hazards responses will be developed.
6. Project Management Plans: ensure risks and responses from the documents and processes outlined above translate into action.
7. Active Risk Manager: captures and monitors climate change risks in organisational risk management software.



## Targets and metrics

Indicator	2017/2018 (Base year) (tCO2e)	2019/2020 (tCO2e)	2020/2021 (tCO2e)
<b>SCOPE 1</b>			
Other fuels	321	297	302
Refrigerants	-	-	11
Stationary Energy	-	-	1
Transport fuels	1,748	1,989	1,647
<b>Scope 1 Total</b>	<b>2,069</b>	<b>2,286</b>	<b>1,961</b>
<b>SCOPE 2</b>			
Electricity	12,701	9,886	9,077
<b>Scope 2 Total</b>	<b>12,701</b>	<b>9,886</b>	<b>9,077</b>
<b>SCOPE 3</b>			
Electricity	1,035	749	778
Other fuels	38	35	18
Scope 3 Additional	93,281 <sup>3</sup>	122,574	104,904
Transport - other	143	165	35
Waste	14	137	312
Others	-	21	24
<b>Scope 3 Total</b>	<b>94,511</b>	<b>123,681</b>	<b>106,071</b>
<b>Total gross emissions</b>	<b>109,281</b>	<b>135,853</b>	<b>117,109</b>
Certified green electricity	-	-	-
<b>Net GHG emissions (all scopes)</b>	<b>109,281</b>	<b>135,853</b>	<b>117,109</b>

Auckland Transport’s greenhouse gas emissions have been measured and independently audited. Results show a 14 per cent reduction in emissions from 2019/20 to 2020/21. That emissions reduction (18,744 tCO2e) is the same as taking 7,746 cars off the road or powering 23,430 Auckland homes for a year.

In 2020/2021, the net reduction of operational emissions (mostly scope 1 and 2) was 8 per cent compared to 2019/2020. Compared to the previous year, the most significant decline (14 per cent) in electricity was due to the accelerated retrofitting of 32,200 conventional streetlights with energy efficient LED lights. Now, more than 85 per cent of the Auckland’s streetlights are LED. Corporate emissions (staff travel for work, office electricity, gas and waste) also reduced by 5 per cent compared to the 2019/2020 due primarily to COVID-19 restricting travel and office occupancy.

All the public transport services (bus, ferry, and train) produced 109,644 tCO2e of total GHG emissions in 2020/2021.

The ratio of emissions associated with public transport services to Auckland Transport’s total emissions remained constant (94 per cent) since 2018/19. Public transport bus operators produced a significant amount of GHG emissions (79 per cent), followed by Ferry (17 per cent) and Train (4 per cent) across the emissions associated with public transport services in 2020/2021. Analysing emissions per passenger kilometre data of 2020/2021, the electric train performed seven times less carbon-intensive than bus and nine times less than ferry in 2020/2021.

The public transport bus emissions declined by 10 per cent compared to the previous year mainly because of improved fuel use efficiency (10 per cent), and the zero-emissions buses rolled out across the network. PT ferry emissions also declined significantly (29 per cent) in 2020/2021 compared to the 2019/2020, mainly due to a reduction in ferry services (km, hour of operation). Once the service level reverts to the business-as-usual trend (pre-COVID-19), the ferry emissions are expected to rise again.

3. Scope 3 additional for 2017/2018 includes emissions associated with fuel used by third-party operators to provide public transport bus services. Emissions related to PT ferry services were considered in the inventory since 2018/2019.

# Watercare

## Governance

- **Board of Directors** - oversight of climate change strategy through the Enterprise Risk Register, including climate change risk (extreme events) and the steps being taken to mitigate them.
- **Committee for Climate Action** - a board sub-committee that focuses on climate change governance and provides input into mitigation and adaptation activities.
- **Sustainability Team** - prepares Watercare's climate change strategy and broader climate change programme.
- **Executive Leadership Team** - reviews and provides input into organisational policies, frameworks and strategies that support Watercare's climate change programme. An Executive Sponsor for Climate Change is appointed - currently Chief Infrastructure Officer.
- **Management** - implements climate change risk management approaches and delivers risk reduction activities in the business.

## Strategy

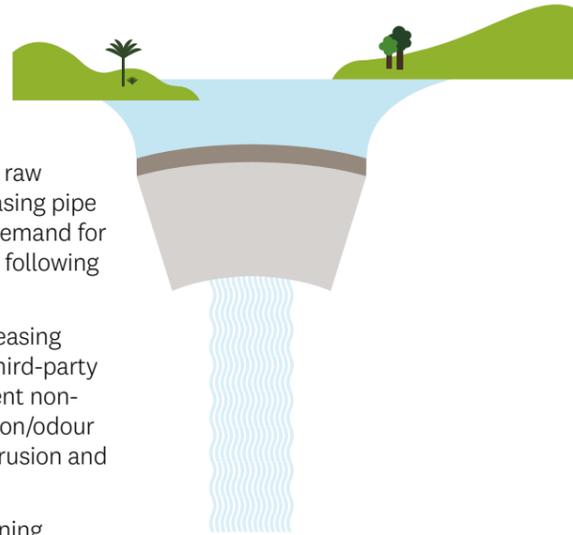
Watercare has identified its two key services are vulnerable under both RCP 4.5 and 8.5 scenarios and is working to mitigate this risk.

These include:

- **Providing water** - catchment land instability, water scarcity, diminishing raw water quality, onsite flooding, power/access road failures to plants, increasing pipe breakages, impacts on assets due to sea level rise, dramatic changes in demand for water services with increasing peak demands, potential 'stranded assets' following land-use changes and sea level rise.
- **Wastewater services** - decreased effectiveness of oxidation ponds, increasing probability of wastewater bypasses, onsite flooding, impacts on critical third-party services, changes to assimilative capacities, increased instances of consent non-compliances, submerged outfalls, migratory bird impacts, greater corrosion/odour issues, more overflows, increased pumping costs, increased saltwater intrusion and flotation of assets.

Climate change issues and opportunities are captured in key external planning documents, internal governance and infrastructure planning in the following ways:

- Developing a climate change strategy based on the climate-related risks identified. Fourteen work streams have been established to reduce climate impact over time. These work streams are categorised into value stream topics of Informed Decision Making, Assets, External Dependencies and Mitigation. Each of these areas in the strategy has short- and long-term actions to support climate change resilience goals.
- Incorporating climate change risks into infrastructure programmes through asset management plans, servicing strategies and facility strategies.
- Protecting major assets from climate impacts, such as sea level rise, in future years by incorporating direct funding for these approaches in asset management plans.
- Ensuring adequate water supply for Aucklanders through investments made in asset management plans. This caters for growth, maintaining levels of service and the considerations of a changing climate on water supply yield and changes in demand.
- Informing governance and decision-making through a value creation model using the six capitals framework. Watercare's role in, and contribution to, the natural environment is considered part of this framework.
- Revolutionising infrastructure delivery through the 40:20:20 programme<sup>4</sup>, an integrated vision that ensures carbon reduction is directly aligned with project planning as well as achieving cost reduction, and health, safety and wellbeing improvements.
- Incorporating a planning approach using dynamic adaptive pathways to understand climate change trigger points for infrastructure and a flexible planning approach.
- Integrating environmental considerations, including low-carbon solutions, into the Supplier Code of Conduct.



Watercare's 40:20:20 vision is an integrated programme with construction partners, design partners, supply chain and Watercare that aims for a reduction in carbon and cost, and an improvement in health, safety and wellbeing outcomes. Low-carbon thinking and processes will incentivise innovation, shift mindsets, reduce costs and emissions, and positively impact our service delivery. Another area of focus for Watercare will be adopting new technologies to meet future water challenges such as a roll out in smart water metering.

## Risk management

Climate change is integrated into Watercare's risk management policy and framework and follows the ISO 31000:2018- Risk Management Guidelines. A steering committee of the Executive Team monitors emerging risks and risk-mitigating actions and strategies.

A dynamic adaptive pathway planning approach is being implemented to help understand the options and trigger points for infrastructure planning and delivery of services in an uncertain future.

Climate risks are also addressed individually on a project-by-project basis in new infrastructure planning. An appropriate course of action will be dependent on the nature of the risks, the asset itself, or other factors such as impact on service delivery for the local community. Considerations include:

- relocating or retreating
- accommodating
- protecting.

## Targets and metrics

Watercare has measured and reported on its greenhouse gas emissions for over 10 years and had emissions verified externally by Toitū Envirocare in 2019/2020 and 2020/2021. A roadmap to achieve long-term emissions reduction targets is currently being developed.

Watercare's climate change strategy has two ambitious targets for reducing emissions which align with keeping the global temperature increase within 1.5 degrees Celsius:

- net zero emissions by 2050
- reducing operational greenhouse gas emissions by 50 per cent by 2040 (compared to 2018 levels).



We are developing annual performance targets for emission reduction and, alongside Auckland Council, developing metrics and targets for climate change adaptation for the region.

Watercare's approach is recognised by the New Zealand Construction Sector Accord as a beacon project, work that leads to improving the New Zealand construction industry overall.

Additional actions contributing to reduced GHG emissions include:

- energy neutrality at the Rosedale and Māngere wastewater treatment plants, two of Watercare's largest energy consumers, including a comprehensive review of energy consumption and increase in biogas generation. By generating their own electricity, the two plants will significantly reduce reliance on the grid and their scope 2 emissions
- solar PV and battery technology at three Watercare sites
- a 1MW floating solar array on the wastewater storage ponds at the Rosedale Wastewater Treatment Plant. This array generates 1.48GWh pa - enough power to run the equivalent of 200 New Zealand homes for a year.

These solar projects will reduce scope 2 emissions and Watercare's reliance on the grid.

4. For further detail, please refer to <https://www.constructionaccord.nz/good-practice/beacon-projects/watercare-partnering-for-carbon-reduction/>

Indicator	2017/2018 (Base Year) (tCO2e)	2019/2020 (tCO2e)	2020/2021 (tCO2e)
<b>SCOPE 1</b>			
Stationary combustion	2,908	1,993	3,703
Mobile combustion	1,761	1,883	1,930
Process Emissions (Waste Water)	9,224	7,577	8,003
Fugitive emissions	1,792	1,814	1,802
<b>Scope 1 Total</b>	<b>15,685</b>	<b>13,267</b>	<b>15,438</b>
<b>SCOPE 2</b>			
Electricity	13,898	15,210	14,668
<b>Scope 2 Total</b>	<b>13,898</b>	<b>15,210</b>	<b>14,668</b>
<b>SCOPE 3</b>			
Product use (lime)	5,906	6,320	6,557
Maintenance contracts	-	1,686	1,660
Transmission & Distribution loss gas and electricity	1,465	1,408	1,528
Waste	167	1,611	3,733
Business travel	129	114	72
Use of sold products (contract for services for Waikato District Council)	-	2,604	2,659
<b>Scope 3 Total</b>	<b>7,668</b>	<b>13,743</b>	<b>16,209</b>
<b>Total gross emissions</b>	<b>37,251</b>	<b>42,220</b>	<b>46,315</b>
Certified green electricity	-	-	-
<b>Net GHG emissions (all scopes)</b>	<b>37,251</b>	<b>42,220</b>	<b>46,315</b>

Watercare’s scope 1 and 2 emissions primarily come from operating the water and wastewater networks and treatment plants. The most significant sources include wastewater process emissions (e.g. N2O and CH4 treatment plants and disposal of biosolids) and electricity consumption. Watercare’s scope 1 emissions have reduced by 2 per cent overall when compared against the baseline year. In the past 12 months there has been a 16 per cent increase in scope 1 emissions when compared with the previous reporting year. This is due to consumption of natural gas which was uncommonly low in 2019/20 due to maintenance issues of cogeneration engines.

Electricity accounted for 32 per cent of our GHG emissions in the 2020/2021 reporting year. There was a decrease of 4 per cent emissions compared with the previous year but is higher than the base year. Watercare are currently balancing water security needs and energy consumption whilst responding to the recent drought. This has led to more use of the Waikato River water source which has a higher energy intensity. Moving forward, our energy use will be supplemented by solar PV generation from three existing pilot sites (Pukekohe WWTP, Redoubt Rd reservoir and Wellsford WWTP), the 1MW floating array at Rosedale WWTP and future projects yet to be announced.

Scope 3 emissions have increased 111 per cent since our baseline year, entirely as a result of improved data availability and increasing our reporting boundary. In particular emissions associated with waste to landfill, maintenance contracts and providing services for the Waikato District Council. These have not been back-cast to the baseline at this stage. This trend continued in the past year when our scope 3 emissions increased by 18 per cent as a result of reporting on disposal of grit and screenings to landfill and associated transport for the first time.

# Auckland Unlimited

## Including Auckland Unlimited Limited and Regional Facilities Auckland (Trust)

### Governance

In December 2020 Auckland Tourism, Events and Economic Development Limited and Regional Facilities Auckland Limited (the Corporate Trustee of Regional Facilities Auckland (the trust)), merged into one organisation and was re-named Auckland Unlimited Limited (the company). The company and the trust are in the process of setting up shared management teams and reducing duplication. This process will identify and define the teams responsible for governing climate-related risk and opportunities.

- **Board of Directors and Trustees** - the company’s board and the corporate trustee oversee decision-making associated with the risk management policy framework. The board and corporate trustee have delegated power to the executive management team to provide oversight on strategic and operational matters, including climate change, while the new organisational structure is defined and formalised.
- **Risk Committee** - the committee assists and advises the board and corporate trustee on meeting its responsibility for governance, risk management, health safety and wellbeing, and internal controls.
- **Executive Management Team** - the board and corporate trustee have delegated power to the executive management team to provide oversight on strategic and operational matters, including climate change, while the new organisational structure is defined and formalised.
- **The Climate Innovation and Sustainability team** - has oversight of existing programmes and activities. The climate innovation and sustainability team will also support the development and implementation of the trust’s sustainability strategy to align with Auckland Council’s key climate targets.

### Strategy

Auckland Unlimited is the cultural and economic development agency for Auckland. It owns multiple assets and provides a variety of services that support industry development and visitor and investment attraction.

We are assessing risks to assets and services using an RCP 8.5 and a high-level sensitivity check analysis against RCP 4.5 for physical climate change risks. A disorderly scenario, that explores higher transition risks due to policies being delayed or divergent across countries and sectors, will be used as the transition scenario.

Auckland Unlimited has also carried out an economy climate change risk assessment that identifies risks and opportunities from transitioning to a low carbon economy and the physical effects of climate change to Auckland’s economy. This work provides an evidence base for the economy section of Te Tāruke-ā-Tāwhiri: Auckland’s Climate Plan, that proposes an inclusive economy for Auckland, focusing on building a regenerative and resilient economy.

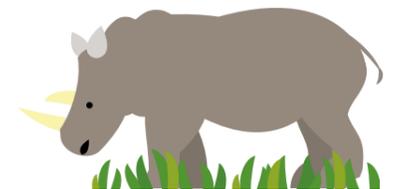
We will continue to deliver on corporate sustainability commitments, demonstrate thought leadership, influence sustainable procurement processes and ensure the venues and operations are working towards a zero emissions future by 2050. This includes the reduction of waste to landfill and ensuring our buildings work towards meeting a 5-star Green Star rating. Regional Facilities Auckland continues to educate and influence behavioural change and help conserve species in the wild through the organisation’s education and conservation programmes.

### Risk management

Auckland Unlimited’s Enterprise Risk Management Policy Framework is reviewed annually and will be updated as the organisation’s new management structure progresses.

Current processes for identifying and assessing risk include:

- business units undertaking quarterly reviews of current and emerging risks
- a risk committee approving risk evaluation outcomes and treatment actions
- a risk and assurance function to compile a top risk register
- a risk register which is reported to the Risk Committee quarterly.



A streamlined approach to managing climate related risk will be developed once the organisational impacts and opportunities are assessed against the best and worst-case RCP scenarios. Auckland Unlimited is following Auckland Council’s adoption of the ISO 31000:2018- Risk Management Guidelines. As of June 2021, the process for managing climate-related risk is as follows:

- operational Managers will identify, assess, control, and mitigate the risk
- Auckland Unlimited’s General Manager Risk, Safety and Assurance works with Auckland Council to facilitate and monitor effective risk management practices across business units
- this will be internally and then externally audited. It is important to note we are still defining our organisational management structure and roles and teams may change.

**Targets and metrics**

Indicator	2020/2021 (Base Year) (tCO2e)
<b>SCOPE 1</b>	
Other	14
Other fuels	467
Refrigerants	6
Stationary Energy	4
Transport fuels	102
<b>Scope 1 Total</b>	<b>593</b>
<b>SCOPE 2</b>	
Electricity	1,522
<b>Scope 2 Total</b>	<b>1,522</b>
<b>SCOPE 3</b>	
Electricity	151
Freight	411
Other fuels	28
Passenger vehicles - default age	1
Scope 3 Additional	297
Transport – other	78
Waste	71
<b>Scope 3 Total</b>	<b>1,037</b>
<b>Total gross emissions</b>	<b>3,152</b>
Certified green electricity	-
<b>Net GHG emissions (all scopes)</b>	<b>3,152</b>



The organisation measured and independently audited its GHG emissions by combining both legacy businesses’ annual emissions. Next year will be the first full year for Auckland Unlimited and it will continue to be measured and audited on an annual basis.

Auckland Unlimited achieved Toitū carbon reduce certification for the financial year 2021. Auckland Zoo is a business unit of Auckland Unlimited and voluntarily offsets their emissions allowing them to achieve the Toitū carbonzero certification.

The organisation is committed to transitioning to low carbon, in alignment with the Auckland Council Group’s emissions targets to reduce by 50 per cent by 2030 and achieve net zero emissions by 2050. The management of waste produced at delivered events and venues is a priority for Auckland Unlimited. The current target of 70 per cent waste diversion from landfill continues to be incorporated into cultural festival planning and delivery. Carbon neutrality is also being worked towards for these delivered cultural festivals, with an objective for all four cultural festivals to be carbon neutral by 2023. Legacy RFA had set energy-emissions targets and a 75 per cent waste diversion target for all business units. These targets will be reviewed and streamlined across Auckland Unlimited next financial year.

**Eke Panuku**

**Governance**

- **Board of Directors** - has oversight of Eke Panuku’s risk register, climate change strategy and associated priority actions, including GHG emissions measurement. The board meets quarterly to review these work programmes.
- **Executive Leadership team (ELT)** - Key performance indicators (KPIs) have been developed for the ELT and staff responsible for delivering the climate change strategy. KPIs are tracked by the Corporate Responsibility team and progress is reported monthly to ELT.
- **Risk Manager** - responsible for identifying and addressing climate change risks.
- **Corporate Responsibility team** – responsible for developing and delivering the climate change strategy and supporting the wider organisation to deliver Eke Panuku’s Climate Change Strategy through corporate business plans.

**Strategy**

Our climate change strategy has two overarching objectives:

- new communities in priority locations are designed and developed to be low carbon and climate resilient
- leading by example through reducing climate impact across our own operations and asset management.

A key activity is ensuring climate impacts, risks and vulnerabilities are considered in the regeneration of Eke Panuku neighbourhoods at the master planning stage so that communities that are developed are resilient to future impacts.

Board decisions are informed by a climate impact statement which includes adaptation and mitigation considerations. Capital expenditure projects take into account ongoing operating costs and energy efficiency.

More information is needed to enable better decision-making at the front end of planning and for optioneering purposes. Work is already underway to incorporate climate change mitigation and adaptation considerations into project planning, procurement, reducing or minimising emissions, and ensuring developments are resilient to climate impacts. This includes:

- improving project management processes by providing documents that direct project managers to consider climate and sustainability in planning, procurement, and delivery
- supplying suitable tools and resources (in collaboration with Auckland Council) to support staff (e.g. checklists, emissions calculators and risk guides)
- supporting project managers and building staff capability to assess climate impacts and sustainable procurement opportunities in renewals, capital works and development projects.



**Risk management**

Eke Panuku’s Risk Management Framework has been developed in accordance with the ISO 31000:2018- Risk Management Guidelines. Risks are identified and assessed according to the likelihood and level of consequence, with mitigations specified.

We have initially focused on immediate risks. More detailed work is needed to develop a comprehensive assessment of long-term, climate-related risks. The risks that have been identified relate to loss of reputation or social license if we do not deliver our developments effectively and incorporate mitigation and adaptation measures (either because of a lack of resourcing or internal buy-in).

Assessment and identification of physical risks and their impacts on managed assets will become clearer through the group’s scenario analysis work.

### Targets and metrics

Indicator	2018/2019 (Base Year) (tCO2e)	2019/2020 (tCO2e)	2020/2021 (tCO2e)
<b>SCOPE 1</b>			
Transport fuels	47	49	32
<b>Scope 1 Total</b>	<b>47</b>	<b>49</b>	<b>32</b>
<b>SCOPE 2</b>			
Electricity	79	105	72
<b>Scope 2 Total</b>	<b>79</b>	<b>105</b>	<b>72</b>
<b>SCOPE 3</b>			
Scope 3 Mandatory	342	268	397
Scope 3 Additional	428	391	559
Scope 3 One time	-	-	3
<b>Scope 3 Total</b>	<b>770</b>	<b>659</b>	<b>959</b>
<b>Total gross emissions</b>	<b>896</b>	<b>813</b>	<b>1,063</b>
Certified green electricity	-	-	-
<b>Net GHG emissions (all scopes)</b>	<b>896</b>	<b>813</b>	<b>1,063</b>

Eke Panuku has worked with Toitū Envirocare since 2019 to measure and report on corporate emissions and has achieved Toitū carbonreduce certification (i.e. energy, fuel and waste emissions are measured). We are also a member of the Climate Leaders Coalition which commits to measuring and reporting on emissions and sets an emissions reduction target. Measuring GHG emissions allows reduction efforts to focus on the most significant emissions sources. For us, these are electricity and waste, followed by diesel and petrol.

Actions identified in the plan already implemented include:

- trialling electric motors to replace diesel at Westhaven Marina
- obtaining and promoting e-bikes for work travel
- encouraging greater use of virtual and phone meetings
- achieving a 5 Star NABERSNZ rating for our head office at 82 Wyndham St.

Actions that are still to be completed include:

- compiling data and investigating management options to monitor and reduce energy consumption and waste in leased buildings
- investigating opportunities to reduce energy use, including public lighting and solar power installation in the Westhaven Marine Village.

Eke Panuku’s emissions inventory for 2021 shows an increase in total gross GHG emissions by over 18 per cent from the base year and around 31 per cent from 2019/2020. Scope 1 and 2 emissions have both decreased significantly. Scope 1 emissions have decreased by over 30 per cent from our base year and nearly 34 per cent from 2019/2020. Scope 2 emissions have decreased over 8 per cent from our base year and over 30 per cent on last year.

The increase in total gross and mandatory GHG emissions is attributed to an increase in scope 3 emissions; there were additional scope 3 mandatory emissions, scope 3 additional emissions and a new category of scope 3 one-time emissions which is waste associated with deconstruction of the America’s Cup bases.

The scope 3 additional emissions are those associated with energy use on marina berths that is on-charged to customers. The additional energy use is due to increased usage of these berths over the America’s Cup period and boats that had extended stays at Westhaven due to COVID-19-related issues such as border restrictions.

The main increases in scope 3 emissions are related to increased waste volumes. These are from head office, marina and Wynyard Quarter waste. Waste from the Eke Panuku head office is likely to be over-estimated as a waste audit was not undertaken this year, with volumes pro-rated from the whole building. Waste from the marinas increased due to increased berthage, and Wynyard Quarter waste increased due to waste associated with the America’s Cup event. There was also an increase in Scope 3 emissions from car mileage claims, the reasons for this are being reviewed.

## Ports of Auckland

### Governance

- **Board of Directors** - responsible for ensuring the implementation of the environmental policy, including understanding the nature of current environmental hazards and risks associated with our operations and ensuring appropriate resources and processes are in place to respond to them. The board is also responsible for meeting environmental legislative requirements and overseeing sustainability targets and performance against those targets. Further training on climate risk matters will be provided to the board in 2021/2022.
- **Executive Lead team** - the executive team has reviewed existing policies and identified where climate risk matters are captured, established a pathway to address gaps and opportunities, and presented this to the board for consideration.
- **Sustainability team** - responsible for managing and delivering our sustainability strategy and the overall management of climate change and sustainability risks.

### Strategy

Our sustainability strategy is based on a triple bottom line approach and is depicted below.



- We undertook a readiness assessment to assess the maturity of our climate-related policies, processes and plans, including a gap analysis of TCFD and Climate Disclosure Standards Board reporting requirements.
- The outcome of this assessment was a three-year roadmap and accompanying action plan to progressively align Ports of Auckland with TCFD and other leading practices in the governance and management of climate-related risks.
- Building on this high-level analysis of climate-related risks and opportunities, our next step is to conduct a more detailed scenario-based risk and opportunities analysis which will be sufficiently broad, deep and critical to inform business decisions. For example, this will include analysis and delineation of material risks and opportunities into short, medium- or long-term relevance, and analysis specific to integrated supply chain and geographies. We aim to start this process in 2021/2022.

- We are also developing a sustainable procurement strategy to deliver on our ambitious supplier and carbon targets. The sustainable procurement strategy will align with set climate and sustainability targets and inform the development of a sustainable procurement roadmap to deliver these through our procurement processes. This strategy has been scoped and will be developed in 2021/2022.

### Risk management

We recognise the importance of, and have robust systems for, managing material risks. The Key Risk Register classifies climate change as a “critical risk”. A high-level risks and opportunities assessment was completed using projections of RCP 4.5 and RPC 8.5. This identified risks related to atmospheric, hydrological, oceanographic, regulatory, technical and legal changes, and capital risks related to revenues and access to capital. The assessment identified that these could have a direct impact on assets and operations, and also looked at indicative risks to supply chains and stakeholders.

As a next step, the Organisational Readiness Assessment Roadmap outlines a programme to develop coordinated processes to reliably identify and analyse climate change and sustainability-related risks so that, over time, the collective risk management system is viewed through a climate lens. Following this, a consideration of velocity and interconnectivity between risks, as well as a conventional analysis of severity and likelihood, will be rolled out.



### Targets and metrics

Indicator	2016/2017 (Base Year) tCO2e	2019/2020 tCO2e	2020/2021 tCO2e
<b>SCOPE 1</b>			
Transport fuels and other	12,251	12,049	12,479
Other Gases	3	6	23 <sup>5</sup>
<b>Scope 1 Total</b>	<b>12,254</b>	<b>12,055</b>	<b>12,502</b>
<b>SCOPE 2</b>			
Electricity	1,867	1,368	1,446
<b>Scope 2 Total</b>	<b>1,867</b>	<b>1,368</b>	<b>1,446</b>
<b>SCOPE 3</b>			
Transport	420	264	13
Waste	200	29	7
Scope 3 Additional	1,467	2,166	2,425 <sup>6</sup>
<b>Scope 3 Total</b>	<b>2,087</b>	<b>2,459</b>	<b>2,445</b>
<b>Total gross emissions</b>	<b>16,208</b>	<b>15,882</b>	<b>16,393</b>
Certified green electricity	-	(327)	(1,446)
<b>Net GHG emissions (all scopes)</b>	<b>16,208</b>	<b>15,555</b>	<b>14,947</b>

Ports of Auckland has achieved an absolute reduction against baseline year (2017) for all categories of 1,261 tCO2e. This is Ports of Auckland's net GHG emissions (Net-GHG) for all categories and allows for market-based emissions factors through their purchase of renewable electricity certificates. Ports of Auckland has an emission reduction pathway that adopts a combination of purchasing renewable electricity, improving fuel efficiency and adopting low, and zero, carbon alternatives for diesel.

During 2020/2021 POAL implemented a trial of renewable diesel in a range of plant, vessels and vehicles. Through this trial, Ports of Auckland used over 17,000 litres of renewable diesel in its operations to achieve a saving of approximately 50 tCO2e. The trial was successful, and the renewable diesel will be adopted as a transition fuel and will play a significant part of the Ports of Auckland emissions reduction programme in the coming years.

Ports of Auckland gross emissions for all categories is 16,393 tCO2e and is a 1 per cent increase on baseline year (2017). Through its programme of work, including its purchase of renewable electricity certificates, Ports of Auckland net-GHG is 14,947 tCO2e and is a 8 per cent reduction on baseline year for all scopes. A 1 per cent reduction on baseline year was achieved for scope 1 and 2 emissions.

5. Note – 2020/2021 was the first year Ports of Auckland reported emissions associated to refrigerants in our building HVAC systems – totaling 12.4 tCO2e.

6. Note – 2020/2021 was the first year Ports of Auckland reported emissions associated to supply of water – totaling 1.9 tCO2e.

## Te Papakupu whāiti Glossary of terms

### Adaptation

Actions taken to help communities and ecosystems cope with changing climate condition (United Nations Framework Convention on Climate Change) OR Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (IPCC).

### Artesian water

Artesian water is a form of groundwater that flows to the land surface because pressure in underground rocks force it to the surface.

### Assimilative capacity

Assimilative capacity refers to the ability of the environment or a portion of the environment (such as a stream, lake, air mass, or soil layer) to carry waste material without adverse effects on the environment or on users of its resources.

### C40 cities

C40 cities is a network of over 90 cities around the world committed to addressing climate change.

C40 supports cities to collaborate effectively, share knowledge and drive meaningful, measurable and sustainable action on climate change.

### Climate resilience

The ability of a system and its component parts to anticipate, absorb, accommodate or recover from the effects of a hazardous event in timely and efficient manner. This includes ensuring the preservation, restoration or improvement of its essential basic structures and functions.

### Climate risks

The exposure to climate related danger, harm or loss.

### Emissions footprint

The total greenhouse gas emissions caused by an individual, event, organisation, service or product, expressed as carbon dioxide equivalent.

### Environmental degradation

The deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems; habitat destruction; the extinction of wildlife; and pollution.

### Executive leadership/management team

The chief executive officer and those employees reporting directly to them.

### Floating solar array

A floating solar array is an array of solar panels that floats on top of a body of water, fixed to a buoyant structure that keeps them above the surface.

### Greenhouse gas emissions (GHG)

Gases emitted to the atmosphere which contribute to the greenhouse gas effect where more than the normal amount of atmospheric heat is retained in the atmosphere. These emissions include water vapour, carbon dioxide, nitrous oxide, methane, ozone, halocarbons and other chlorine and bromine-containing substances.

### Low carbon economy

An economy based on low-carbon power sources that therefore has a minimal output of greenhouse gas emissions into the atmosphere, specifically carbon dioxide.

**Microgrid**

A microgrid is a local energy grid with control capability, which allows it to disconnect from the traditional grid and operate autonomously.

**Mitigation**

The action of reducing the severity, harm and seriousness of climate change through emissions reduction.

**Net zero**

Net zero emissions describes a situation whereby the amount of greenhouse gases emitted into the atmosphere is equal to the amount sequestered or offset (e.g. by forestry).

**Risk register**

A Risk register is a tool for documenting risks, and associated actions to manage each risk.

**Solar PV**

Solar photovoltaics. A system that converts sunlight (photons) into electricity. Supply chains

**Supply chains**

The sequence of processes involved in the production and distribution of a commodity.

**Zero-carbon**

Not releasing carbon dioxide into the atmosphere or removing the same amount of carbon dioxide from the atmosphere as produced (e.g. by an activity, building or organisation).

Te huarahi whakapā mai ki te kaunihera

**How to contact the council**

<b>Online</b>	<a href="https://aucklandcouncil.govt.nz/contactus">aucklandcouncil.govt.nz/contactus</a>
<b>Phone</b>	09 301 0101
<b>Post</b>	Auckland Council, Private Bag 92300, Auckland 1142

**Locations that offer council services****Bledisloe Lane (CBD)**

Bledisloe House, Ground Floor,  
24 Wellesley Street, Auckland CBD

**Aotea / Great Barrier Island**

81 Hector Sanderson Road,  
Claris, Great Barrier Island

**Helensville**

49 Commercial Road, Helensville

**Henderson**

6 Henderson Valley Road, Henderson

**Huapai**

296 Main Road (SH16), Huapai

**Kumeū Library**

296 Main Road, Kumeū

**Manukau**

Ground floor, Kotuku House, 4 Osterley Way,  
Manukau

**Orewa**

50 Centreway Road, Orewa

**Papakura Sir Edmund Hillary Library**

1/209 Great South Road, Papakura

**Pukekohe Library,  
Franklin: The Centre**

12 Massey Avenue, Pukekohe

**Takapuna Library**

9 The Strand, Takapuna

**Te Manawa**

11 Kohuhu Lane, Westgate

**Waiheke Island**

10 Belgium Street, Ostend,  
Waiheke Island

**Warkworth**

1 Baxter Street, Warkworth



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