



Te Mahere Mahi a te Āhuarangi

CLIMATE ACTION PLAN



**CLIMATE
ACTION
NELSON**



Nelson City Council
Te Kaunihera o Whakatū



**CLIMATE
ACTION
NELSON**

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Introduction

Climate change is our biggest global challenge, and Nelson City Council is committed to considering and reducing where possible the climate change impact of all the decisions it makes. Climate change is a lens through which all Council work programmes are considered.

This Climate Action Plan brings together all the climate change projects and actions Council is funding over the next ten years, as set out in our Long Term Plan 2021-31. This Long Term Plan is a significant one for Council's climate change journey, bringing together work and thinking over many years into our most significant climate change work programme.

Council's climate change's journey started many years ago with recognition of the importance of early action to address climate change. In 2008, Council joined Communities for Climate Protection and approved an action plan that outlined the greenhouse gas reduction targets Council wanted to achieve.

Another milestone was the Nelson 2060 Strategy developed by a 24-member mayoral taskforce with extensive community input. It was adopted by Council in 2013. This strategy has a community-led vision for Nelson in 2060 setting out 10 goals to help Nelson achieve that vision, plus ways to measure progress.

In 2017, Council signalled its commitment to a holistic approach to climate change through participation in the Local Government Position Statement on Climate Change and by signing the Local Government Climate Change Declaration. The group of mayors and chairs representing local government from across New Zealand came together to acknowledge the importance and urgent need to address climate change for the benefit of current and future generations, and to encourage Government to be more ambitious with climate change mitigation measures.

Council's sustainability policy was developed in 2018 in partnership with the community and tangata whenua. It recognises Council's stewardship responsibilities for the environment of Nelson, including the city's current and future prosperity and the health and wellbeing of its people. The policy recognises that sustainability is a local, regional, national and

global responsibility. It includes a commitment to increase the use of renewable resources and reduce greenhouse gas emissions.

Project Kōkiri is the Nelson Tasman economic development collaboration set up to navigate and mitigate the economic impacts of the COVID-19 pandemic. One of the top ten economic challenges identified is Climate Change, which is already affecting our horticulture, aquaculture and agriculture industries, native ecosystems, infrastructure, health and biosecurity. We are a coastal region and must make challenging decisions on future investments in infrastructure and strategic land use planning. Consideration of the transitions required within the current economy to a lower-emissions focus, and a focus on the future resilience of the region in response to the significant challenges presented by climate change, is at the heart of the regenerative economic thinking in Project Kōkiri.

At a local level, Nelson City Council has a key role to play in reducing its corporate emissions, supporting and providing leadership on mitigation actions across the community, and helping to manage and lower risk by adapting to climate change effects, especially in relation to sea level rise, infrastructure planning, coastal inundation, and flooding. Council has been investigating actions to reduce its emissions, as well as looking at what adaptation and response activities would be needed in the wider community. Work that has been ongoing for many years includes Council's support for walking, cycling and public transport initiatives, waste reduction projects, implementation of energy efficient street lighting, and increasing planting programmes across the city. Council has also provided support and funding for the Nelson Tasman Climate Forum and Businesses for Climate Action, groups which have attracted national attention for their innovative approaches to community climate action.

At the beginning of 2019, Nelson was identified in a Local Government New Zealand report as one of the South Island priority areas whose infrastructure would be affected by climate change and sea level rise. This report was released at the same time Council was commencing discussions with the community on coastal hazards. Around the same time Council also started a programme of work to measure its organisational carbon emissions, the first step towards setting targets to reduce these.

In 2019, Council supported central government's Climate Change (Zero Carbon) Amendment Bill, which set out a climate change plan for the next 30 years, including a objective of limiting temperature rises to no more than 1.5 degrees Celsius within this time period. This support for central government action was followed by Council declaring a Climate Emergency on 16 May 2019.

Council consulted on its programme to address climate change as part of developing its Annual Plan 2019/20 and received strong feedback from our community about the need to do more and give the work higher priority.

The Climate Emergency acknowledges the scientific evidence and advice that there is a small window for action to avoid the most damaging effects of climate change.

The declaration of a climate emergency:

- Publicly declares that the world is in a state of climate emergency that requires urgent action by all levels of government; that human-induced climate change represents one of the greatest threats to humanity, civilisation, other species, and the life-supporting capacity of air, water, soil, and ecosystems; and that it is possible to prevent the most harmful outcomes, if societies take sustained emergency action, including local councils.
- Recognises that the potential for technology, expertise and capacity exists for humans to mitigate and adapt to this global challenge, but that collaboration and action is essential.

- Commits to examine how Council's plans, policies and work programmes can address the climate emergency and ensure an emergency strategy is embedded into all future Council strategic plans.
- Prioritises collaboration with the government, other councils and governing Bodies, iwi, business, industry and scientific sectors, and with the wider community, in order to maximise collective action that will achieve climate change, mitigation, adaptation and resilience.
- Recognises that transparency and accessibility of climate change information, along with education and participatory community engagement in collective action, will be essential to achieve climate change mitigation, adaptation and resilience.

The Climate Emergency declaration emphasises Council's intention to play a key role in leading the community toward a resilient and low emissions future and implementing adaptive measures that help to manage and minimise risk. By making the declaration, Council committed to look at how its plans, policies and work programmes can support action to address the climate emergency and ensure that is embedded in all future Council strategic plans. This declaration was a strong signal to our community of the importance of this issue and the urgent need for collective action.

Further action was undertaken as part of the 2019 Annual Plan, when additional resources and funding were provided to enable Council and the community to work more closely together on climate issues. To date a number of community-led and Council-led projects have accessed funding from the Climate Reserve that was established through that Annual Plan process.

The importance to Council and community of responding to the challenges of climate change was also reflected in the Te Taihū Intergenerational Strategy. This strategy, led by Wakatū Incorporation in partnership with councils, iwi and stakeholders from across the Top of the South, includes climate change and



regenerative outcomes as a priority area. The vision for the Strategy is that we will be good ancestors reflecting the fact that the primary impacts of climate change will be faced by our descendants. The Strategy also helped inform Council's 2021 Long Term Plan and the actions in this plan contribute to the Te Taihū Intergenerational Strategy outcomes.

In support of its declaration of a Climate Emergency, on 13 August 2020 Council set its own greenhouse gas (GHG) emissions reduction targets. This is a way of ensuring Council takes early and substantive action towards achieving carbon neutrality. In setting GHG emission reduction targets, Council also adopted central government targets:

- to achieve net zero emissions of all GHGs (other than biogenic methane) by 2050 and
- to reduce biogenic methane emissions by 24 - 47 percent by 2050.

Council will also be adopting the government's five-yearly reduction targets to be announced by the end of 2021, to ensure we keep on track to achieve the broader goals by 2050.

As Council does more to reduce emissions,

our performance will be tracked against all targets and this information will be included on our website. This will form an important accountability mechanism for measuring Council's work in addressing climate change.

Achieving New Zealand's emissions objectives requires partnership with, and action by, central government, local government, iwi, businesses, community groups and residents. Progress cannot be achieved without a collaborative approach.

With this Plan, Council is demonstrating its commitment to action and putting climate change front and centre in its work programmes and decision making. Side by side with all willing partners we will work to respond to the challenge of climate change, creating a more resilient and sustainable future for Nelson.

Purpose of this Action Plan

This Action Plan shows all the resources Council has currently allocated to climate change projects over the next ten years, as set out in our Long Term Plan 2021-31. The Action Plan is a living document that will be updated as the actions are completed, or amended or new actions are added. Any changes to the Plan will be in accordance with the requirements of the Local Government Act 2002, for example as part of an Annual Plan or future LTP process. As these changes happen, the Climate Action Plan will be updated online, alongside our emissions reduction dashboard, so the community can track progress towards achieving our targets. The actions in the Plan cover a wide range of infrastructural, social, and environmental areas, demonstrating Council's commitment to meeting the urgent challenge of mitigation of and adaptation to climate change.

The Te Tauihu – Intergenerational Strategy, tells us about the importance of Tūpuna Pono (being good ancestors). This speaks to the purpose of the Climate Action Plan, which is to deliver meaningful change in, and for our communities, by working together towards net zero carbon and a resilient community. The impact of climate change on future generations will be profound unless there is local and global action to reduce GHG emissions.

The implementation of mitigation and adaptation initiatives will bring co-benefits (protection and enhancement of local biodiversity, sustainable built environments, improvement of water and soil health, provision of employment and wider community health benefits) and lead to opportunities for a more resilient Whakatū. Examples of actions identified in this Plan which will contribute to these co-benefits include the proposed Urban Greening Plan, large scale ecological restoration projects such as Project Mahitahi, cleaner air, and health benefits from active transport.



What is adaptation and mitigation?

Responding to climate change involves two complementary types of action: mitigation and adaptation.

Mitigation of climate change is where we reduce GHG emissions or enhance sinks (sequestration) of GHGs. Sinks are places that absorb more carbon than they give out. An example of mitigation is improving public transport so that there are fewer cars emitting GHGs or planting trees to absorb GHGs.

Adaptation to climate change is the process of implementing actions to reduce actual or predicted negative impacts of climate change, for example preparing for more frequent outbreaks of fire by keeping flammable vegetation away from homes. Adaptation seeks to moderate or avoid harm to people, the natural and built environments and infrastructure. It can also include finding ways to exploit beneficial opportunities, for example taking advantage of longer growing seasons as the climate changes.

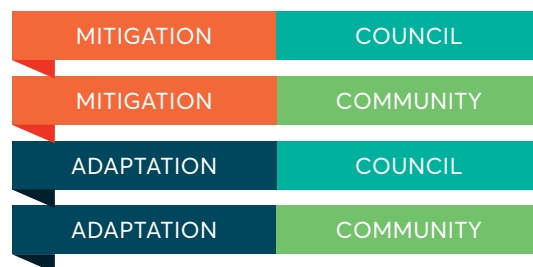
Mitigation and adaptation are closely linked – the more we collectively take action to reduce GHG emissions at the global level, the better the chance that we will have fewer impacts to adapt to in the future. Some actions contribute to both areas, for example planting coastal vegetation absorbs carbon (mitigation) and also protects properties by stabilising coastlines (adaptation). Council will be identifying interdependencies between mitigation and adaptation actions to maximise efficiencies and minimise investment risk.

How this Plan is organised

All of the activities in this Plan are being undertaken/resourced by Council. Some will reduce Council's carbon footprint and some will reduce the community's carbon footprint. We have decided where different activities belong by following the scope of [ISO 14064-1](#) (Specification with guidance at the organization level for quantification and reporting of GHG emissions and removals) for Council's operational footprint and the [Global Protocol for community-scale GHG emissions inventories](#) for community's footprint. The ISO standards are internationally agreed by experts and set out the best way to do something – in this case to measure organisational and communities carbon footprints. Both guidelines are the international best practice to account for GHG emissions.

The standard used to guide Council work in climate change adaptation is the ISO 14090 – Adaptation to climate change – Principles, requirements, and guidelines. For climate change adaptation in communities, the guideline that Council will follow is the Coastal Hazards and Climate Change from the Ministry of Environment (2017) and a process known as Dynamic Adaptive Policy Pathways (DAPP). The Plan also includes adaptation activities to reduce risk for Council assets and services and adaptation activities to reduce risks for the community.

The Climate Action Plan includes actions across these four areas:



This Action Plan will build on work already underway or planned by Council delivered through four themes, following the Long Term Plan structure:



How we will live and work

By making smart choices over the next 10 years, including capitalising on new technology, we can improve our resilience and create a smart sustainable city (supporting inner city living, progressing transition towards a regenerative economy, implementing Urban Greening Plan).



How we will reduce consumption and waste

We can meet our needs by changing how we consume products and services (deconstructing buildings which are no longer fit for purpose and recycling the materials instead of sending them to landfill).



How we will move





Transport is one of the sectors where we can make the biggest reductions in CO₂ emissions. We can do this by encouraging a shift away from single-occupancy private vehicle use towards higher public transport use, by improving public transport and enabling more active transport options.



How we will protect nature

Restoring biodiversity is a major way of storing carbon. Healthy ecosystems can mitigate climate change impacts such as absorbing excess flood water or creating a buffer against coastal erosion and extreme weather events (planting edible plants, trees, restoring native forests).

Each of these areas of action relate to a heading used in the Long-Term Plan 2020-2021 under the Climate Change chapter. A colour code has been used for each of the initiatives, to show which category the action relates to:

-  How we will live and work
-  How we will reduce consumption and waste
-  How we will move
-  How we will protect nature

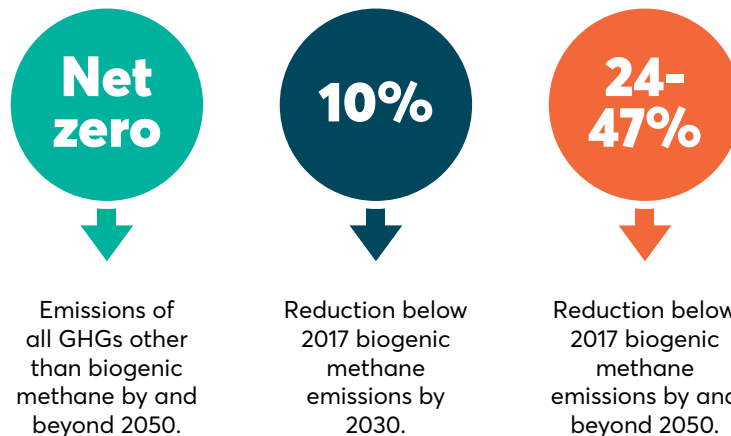
Mitigation of Council Emissions

This section covers the carbon footprint and mitigation initiatives for Council's operational emissions. Council measures its own carbon footprint every year and is using the 2017/18 financial year as the baseline against which reductions are measured.

In August 2020 Council committed to adopting central government's five-year national emissions reduction budgets, which are expected to be developed and confirmed by 2022. Council made this commitment to ensure that it takes early and substantive action towards achieving carbon neutral status.

There are also two long-term Government targets that Council has committed to achieving. These are:

- net zero emissions of all GHGs (other than biogenic methane) by 2050,
- a reduction of 10% of the 2017 biogenic methane measurement by 2030, and a 24-47% reduction of the 2017 biogenic methane measurement by 2050.

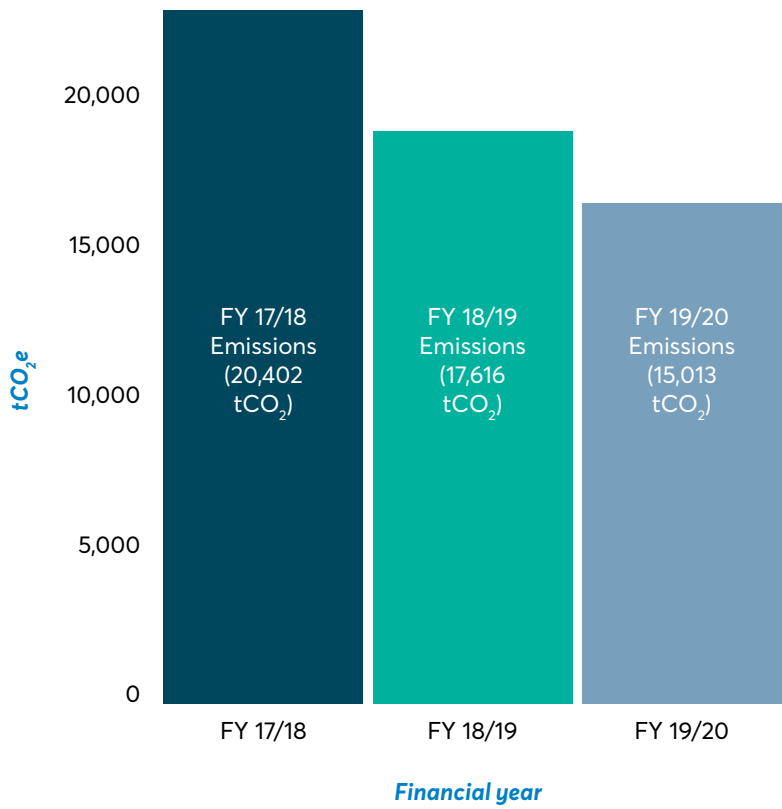


The following figures show the pathway for Council to achieve net zero carbon emissions by 2050 and the main sources of Council's GHG emissions. The main initiatives Council will use to reduce its emissions are improving energy efficiency, use of renewables, low emissions vehicles for its fleet, behaviour change and waste minimisation.

Process



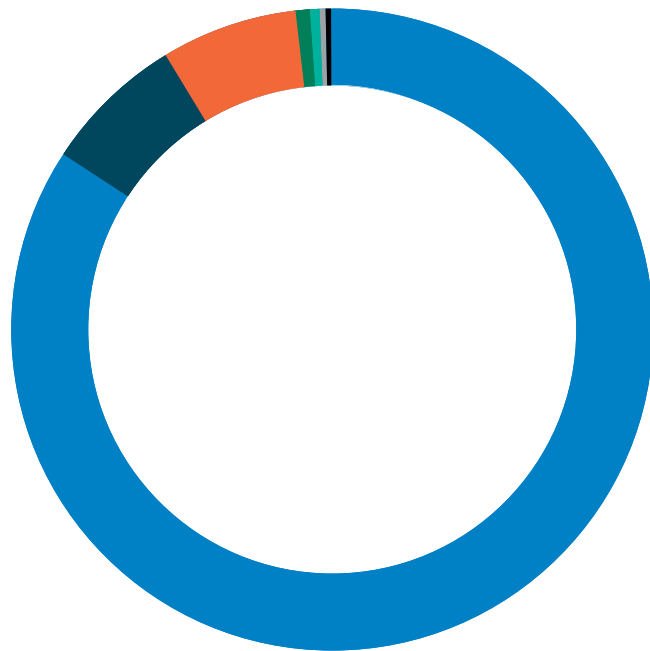
Council Operational GHG emissions



Top 10 sources of GHG emissions for Council Operational emissions

Activity 2017/2018

- Landfill waste - mixed waste
- Wastewater
- Electricity
- Diesel Stationary Combustion
- Air Travel Domestic
- Diesel
- Petrol Regular



Mitigation Actions to Reduce Council's Carbon Footprint

Actions underway

- ● Energy audits in key Council buildings will have recommendations for lower carbon operations, such as:
 - Energy efficiency initiatives
 - Fossil fuel switching for a low carbon emission alternative
 - Renewable energy
 - Replacing existing refrigerants with low global warming potential (GWP) refrigerants

(Budget: \$81,970 across 3 years starting from FY 21/22) Budgets for implementation of recommendations identified in the energy audits will be allocated once the energy audits are completed.
- ● The Civic House Refurbishment will consider waste minimisation and will include initiatives that will contribute to running a more efficient building in terms of energy consumption for heating, ventilation, and lighting. These initiatives will be implemented in stages within a period of 7 years. (Budget: a portion of the total of \$20,509,270 Civic House refurbishment, Civic House renewal plant & equipment and Civic House roof renewal). To be decided by Council in FY 21/22.
- ● Energy audits and implementation of recommendations will occur in water, wastewater and stormwater assets, including a GHG emissions study to improve accuracy of measurement data (Budget: \$148,000 across six years starting from FY 20/21).
- ● Identify potential users for the energy (heat) mapped in the wastewater network that is potentially available to be recovered and reused in various parts of the city. (Budget: \$30,000 approx., FY 21/22).
- ● Council has adopted an electric first policy when replacing/adding cars to its fleet (Budget: A portion of \$100,000 for FY 21/22 will be allocated to electric vehicle purchase)

- ● Conventional lighting will be switched to more efficient lighting technology in buildings and sportsgrounds (Budget: \$452,804 for Trafalgar Park and \$860,000 for sports ground for the next 10 years)
- ● Council is working to ensure that waste minimisation is built into the operation of its facilities and events, both in its own operations, and the conditions of use by the public. This includes a focus on reduce and reuse over recycle, composting of food scraps and integration of recycling where appropriate. The Rethink Waste programme is being used to upskill event organisers and improve resources for waste minimisation in tandem with this process.
- ● Behavioural change programmes (eg, active transport, waste minimisation).
- ● Council's revised Procurement Policy, which is now guided by the underlying principle of minimising GHG emissions, will be implemented.
- ● All Council reports will consider the potential impacts and risks that climate change presents so that this is included in decision-making processes.

To be implemented

- ● An Energy Management Programme, based on ISO 50001, will be implemented.
- ● A framework to include climate change consideration in all business cases will be developed.
- ● There will be continuous monitoring of data from buildings management systems (energy meters, utility bills and other sources) so these can be regularly analysed to identify further energy savings.
- ● Behavioural change programmes (eg building energy usage).

KEY:



How we will live and work



How we will reduce consumption and waste

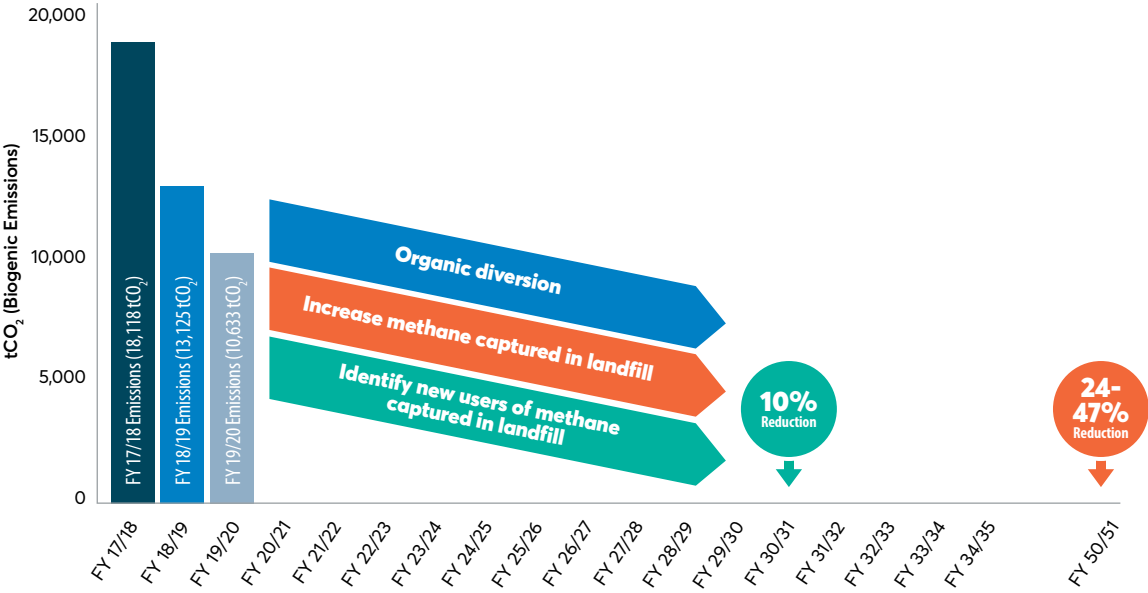


How we will move



How we will protect nature

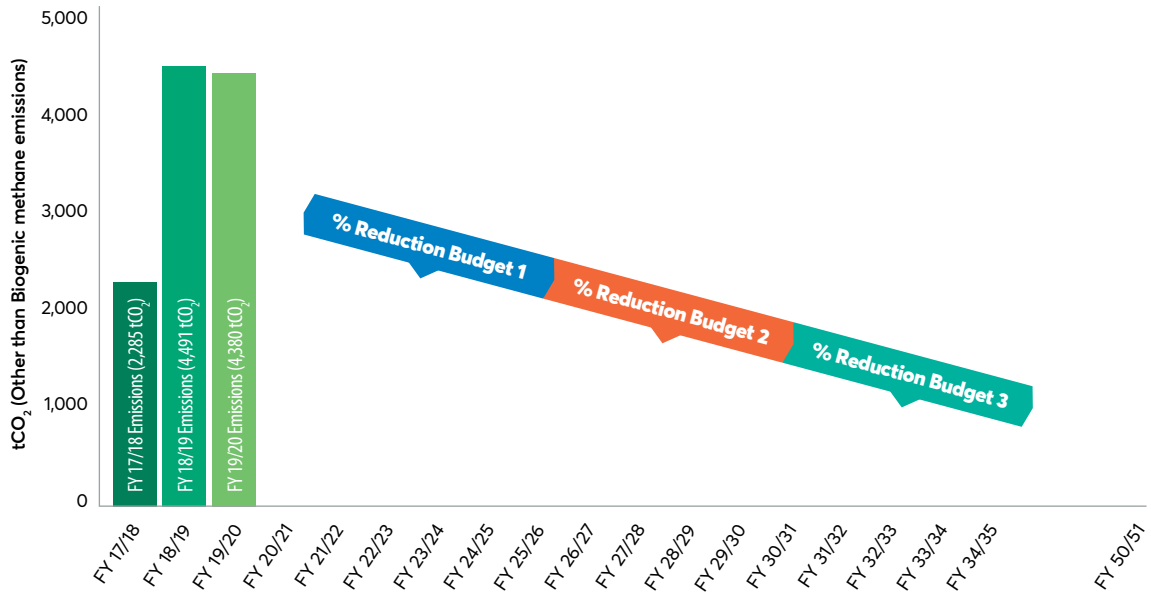
Biogenic Methane Emission Targets



Biogenic methane emissions are the result of biological processes in the waste sector (landfill and wastewater treatment plants). In base year FY 2017/18, Council's gross GHG biogenic methane emissions were about 18,118 t CO₂-e. The reduction target for these emissions are:

- 10% by 2030
- A minimum of 24% by 2050 (but aiming up to 47% or higher)

Other than Biogenic Methane Emission Targets



Emissions other than biogenic methane are related to carbon dioxide, nitrous oxide, and F-gases (hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride). In base year FY 2017/18, Council's gross GHG emissions other than biogenic methane were about 2,285t CO₂-e. The percentage of the emissions reduction's targets over the three budget periods are yet to be set by government by 31 December 2021 and will be adopted by Council.

Mitigation of Community Emissions

Council is playing a leading role in supporting and encouraging the community to implement mitigation initiatives that reduce emissions, as well as delivering its own programmes to mitigate community emissions. Council has identified key enablers such as the Nelson Tasman Climate Forum, a community-led initiative that draws from the collective strength and leadership of community groups. Additionally, in Te Taihū (the Top of the South) Businesses for Climate Action is taking the lead in creating a zero carbon Aotearoa within a resilient sustainable economy, adaptable to both the opportunities and disruptions of climate change. This section includes the GHG emissions from the Nelson community and the initiatives that Council is taking to reduce GHG at this level.

“

We ask Council to play a leading role in the region's transition to a low-emissions economy”.

Zero Carbon Nelson Tasman, LTP Submissions 2021

“

We aim to get everyone in our climate change response waka paddling quickly in the same direction.

Our mission is to weave individuals, households, civil society organisations, businesses, councils and iwi together around urgent, strategic action on climate change in the Nelson-Tasman region”.

Nelson Tasman Climate Forum

“

Together we can transform our business community to create lasting, positive impact”.

Business for Climate Action

“

We are all part of the cloth our community is weaving from the threads of knowledge and passion for a more resilient Nelson”.

Nelson City Council



Process



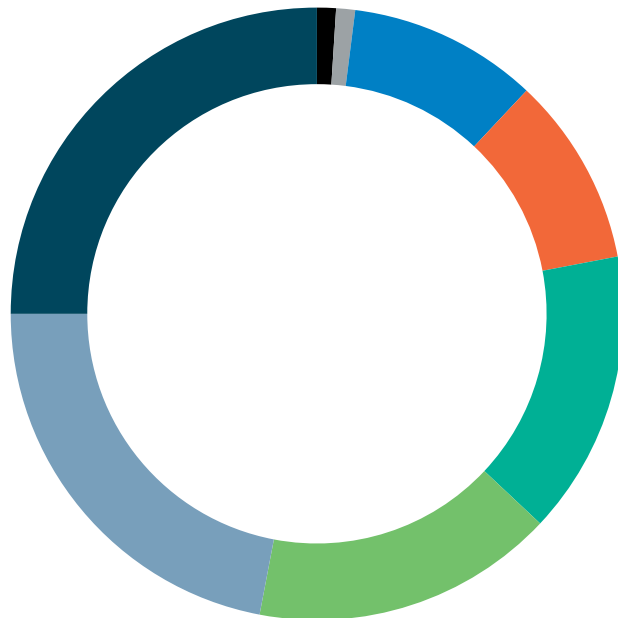
Top 10 sources of GHG emissions in Community for 2019

Households

- Transport 25%
- Heating/cooling 1%
- Other 1%

Industry

- Manufacturing and construction 16%
- Transport, postal, and warehousing 15%
- Electricity, gas, water, and waste services 10%
- Services excluding transport, postal, and warehousing 10%
- Primary industries 22%



Source: Statistic NZ, 2021

Mitigation Actions to Reduce the Community's Carbon Footprint

• Carbon sequestration – development of new carbon sinks

- ●● Afforestation/reforestation and implementation of ecological restoration plans on Council-owned land will increase carbon capture (Budget: \$804,408/year includes: replacement planting, new planting, revegetation, street garden development, street tree development). Budget for retired forestry: over \$800,000 across the next 10 years)
- ●● Implementation of an Urban Greening Plan to expand our urban canopy, will bring more CO₂ absorbing plants and trees into our City Centre while reducing air and noise pollution and supporting biodiversity and food resiliency (Budget: \$20,000 allocated).
- ● Support for afforestation/reforestation and implementation of ecological restoration plans on privately-owned land will increase carbon capture (Budget: Grants totalling \$336,000 were awarded in 2020/21 year from Council's Nelson Nature, Healthy Streams and Sustainable Land Management programmes, and a similar amount is budgeted in 2021/22)
- ● Seagrass and saltmarsh research, mapping, monitoring and enhancement will support marine carbon sequestration. (Budget: a portion of the \$53,373 budget for Tasman Bay monitoring and research being spent in 2021/22)
- ● Council will seek new grant funding for projects to increase terrestrial carbon sequestration, such as Jobs for Nature funding. These projects will be delivered through Council work programmes and partnerships, including with the Kotahitanga mō te Taiao Alliance and the Tasman Environment Trust.
- ● Project Mahitahi is a Kotahitanga mō te Taiao Jobs for Nature project focused on terrestrial ecosystem protection, enhancement and resilience in the Maitai River catchment. The project includes the

planting of \$125,000 trees over 5 years (Budget: \$1,411,359 in 21/22 funded by Ministry for the Environment and Department of Conservation).

• Carbon sequestration - protecting existing carbon sinks to reduce carbon loss

- ● Reducing soil loss through addressing erosion. Council's Sustainable Land Management programme will support soil retention and health through reducing hill country erosion and supporting sustainable land use (Budget: in FY 21/22 is \$330,000 funded by Ministry for Primary Industries and \$67,353 funded through rates).
- ● A portion of the Nelson Nature budget (\$434,912 in FY21/22) will support ecological resilience (adaptation) of terrestrial habitats and species by undertaking pest plant and animal control to protect ecosystems and allow continuing carbon sequestration by those ecosystems. Nelson Nature is Council's terrestrial biodiversity programme, and along with improving indigenous biodiversity it has climate change co-benefits including increased carbon sequestration and adaptation/resilience of ecosystems to changing climate.
- ● The Jobs for Nature Wakapuaka and Whangamoā Project beginning in 2021/22 will protect existing carbon capture by Significant Natural Area ecosystems on private land in the Wakapuaka and Whangamoā catchments, by addressing the impacts of pest plants and browsing animals such as goats on growing and mature trees (Budget: \$990,638 over 3 years).
- ● Understanding the extent of our estuarine carbon sinks through Council's coastal and marine programme, and working with partners such as Taman District Council, Te Taihu iwi,

KEY: ● How we will live and work ● How we will reduce consumption and waste ● How we will move ● How we will protect nature

Kotahitanga mō te Taiao and Tasman Environmental Trust, will help to protect these carbon sinks by informing decision making and reducing the likelihood of disturbance (Budget: allocated to Tasman Environment Trust through the LTP: \$10,000 per year for three years).

- **Emissions mitigation advice, information and education provided to the community:**

- ● Free advice to residents from Council's Eco Design Adviser will help reduce energy usage and improve house performance, which supports reduction in energy consumption (Budget: A portion of the Resilience and Sustainability budget which is \$39,839 in 2021/22)
- ● Council's contribution to the Warmer Healthier Homes Nelson-Tasman-Marlborough project will support reductions in energy use (Budget: \$52,800 per year for the next 10 years).
- ● Council will promote external funding for renewable energy or energy efficiency (e.g. through interest-free bank home loan top-ups, Energy Efficiency and Conservation Authority grants or other government schemes)
- ● Investment in behaviour change programmes will continue to support a shift away from single occupancy use of private vehicles towards public transport and active transport
- ● Information will be provided to the community on how to avoid or reduce waste through the Rethink Waste|Whakaarohia programme.
- ●●● The Enviroschools programme supports educating our tamariki and rangatahi to make better choices about using resources and reducing waste; reduction in energy consumption; habitat restoration/ protection and active transport (Budget: \$112,112 for FY 21/22).
- ● As well as financial support and implementation of projects, Council's environmental programmes including Nelson Nature, Healthy Streams, Sustainable Land Management, Air Quality, Coastal and Marine, and Biosecurity provide advice, education

and information to support the community to care for our natural spaces (Budget: The education component is an integral part of these programmes).

- **Council collaboration with community initiatives for climate action**

- ● Participating in the Nelson Tasman Climate Forum and supporting it to deliver actions outlined in its Climate Action Book. (Budget: \$100,000 per year for three years).
- ● Supporting initiatives such as Businesses for Climate Action (Budget: \$175,000 over three years, \$38,000 of that funding is the remaining funds from the Climate Change Reserve and \$137,000 is ratepayer funded)
- ● Investigating the potential for a Nelson Climatorium (centre of innovation for tackling climate change)
- ● Supporting Community Compost's initiative to grow its organic collection operation (Budget: through a grant of \$32,000 from the Climate Change Reserve in FY 20/21).

- **Waste minimisation initiatives are funded from the waste levy to the solid waste closed account. The objective of Council's waste minimisation programme is to avoid or reduce the creation of waste. The initiatives implemented in the coming financial year(s) include:**

- **Rethink Waste programme: Programmes and activities that enable people in Nelson to avoid or reduce waste**
 - ● Waste minimisation grants to enable community-led projects, to avoid or reduce waste and support the development of a circular economy. Reducing single-use initiatives including the refillery programme and cup bond subsidies
 - ● Development of activities to support a culture of repair and reuse
 - ● Secondhand Sunday
 - ● Support for diversion of e-waste including subsidies
 - ● Focus on textile waste, including Op Shop map

KEY: ● How we will live and work ● How we will reduce consumption and waste ● How we will move ● How we will protect nature

- ● Event waste minimisation
- ● Community workshops
- **Construction & Demolition Waste reduction programme**
 - ● Support for building waste diversion
 - ● Deconstruction case study (deconstruction allows building components to be recycled and reused when the building reaches end of life)
 - ● Building sector engagement
- **Organic waste reduction**
 - ● Kitchen waste composting trial. If this project progresses to a full kerbside service it will contribute to our commitment to reduce overall waste to landfill by 10% per capita by 2030.
 - ● Home composting workshops and subsidies
 - ● Support for Love Food Hate Waste programme
 - ● Support for the Nelson Marlborough Health leadership of the Good Food City initiative
 - ● Waste minimisation at Council events
- **Infrastructure**
 - ● Investigation of EV Charger installation for our community in public spaces will support uptake of electric vehicles (FY 21/22)
 - ● Improvements to cycling, walking (shared walk/cycle paths) infrastructure will promote modal shift (Budget: \$32M over 10 years - approximately 51% will be subsidised by Waka Kotahi NZ).
 - ● Improvements to public transport options will help to reduce traffic (Budget: \$65M over 10 years classified as paid by fare revenue - approximately 51-65% will be subsidised by NZTA).
 - ● Council's Future Development Strategy will manage urban growth in Nelson over the next 30 years
 - ● The project to develop the new city library will include sustainability and climate change objectives
 - ● Installation of new wells to increase methane captured in landfill. This action will be implemented by the Nelson Tasman Regional Landfill Business Unit (Budget: \$2M for York Valley). The identification of new users of methane captured in landfill is directly linked with the previous action of increasing methane captured.
- ● Council's Wastewater activity will develop projects to implement outcomes from the emissions reduction investigative work (currently underway) from FY 22/23 till 30/31. (Budget: \$1,425,000 through LTP)
- **Influencing transport emissions/travel demand management**
 - ● Travel demand management initiatives (Budget: \$1.5M over 10 years). Options to reduce vehicle km travelled will be investigated e.g. car sharing scheme development
 - ● Installation of solar powered compacting bins in public places will reduce servicing requirements and therefore transport emissions (Budget: \$160,000 per year for the next 10 years, sourced from the waste account)
 - ● At the point of contract renewal Council will look to achieve a low emission option for public transport. Included in the budget of \$65M over 10 years classified as paid by fare revenue (approximately 51-65% will be subsidised by NZTA).
 - ● Council will facilitate higher density housing in areas which are close to where people work and shop, to reduce travel.
 - ● Council will encourage more inner city living and intensification to reduce traffic and congestion.
 - ● Council is developing a Parking Strategy which can encourage more use of public transport and walking/cycling. (Budget estimated: \$120,000 from FY 20/21)
- **Investigating the adoption of new technologies, where safe and effective**
 - ● Council is investigating low carbon emissions fuel options (hydrogen, biofuel, etc) as fuel for vehicles

Future Actions

- ● A road map towards low-emission public transport will be developed (Budget: Climate Change mitigation \$1.239 M over the next 10 years)

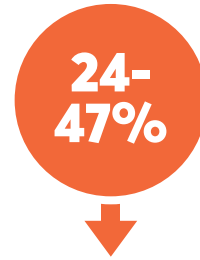
The domestic 2050 target requires at least:



Emissions of all GHGs other than biogenic methane by and beyond 2050.



Reduction below 2017 biogenic methane emissions by 2030.



Reduction below 2017 biogenic methane emissions by and beyond 2050.

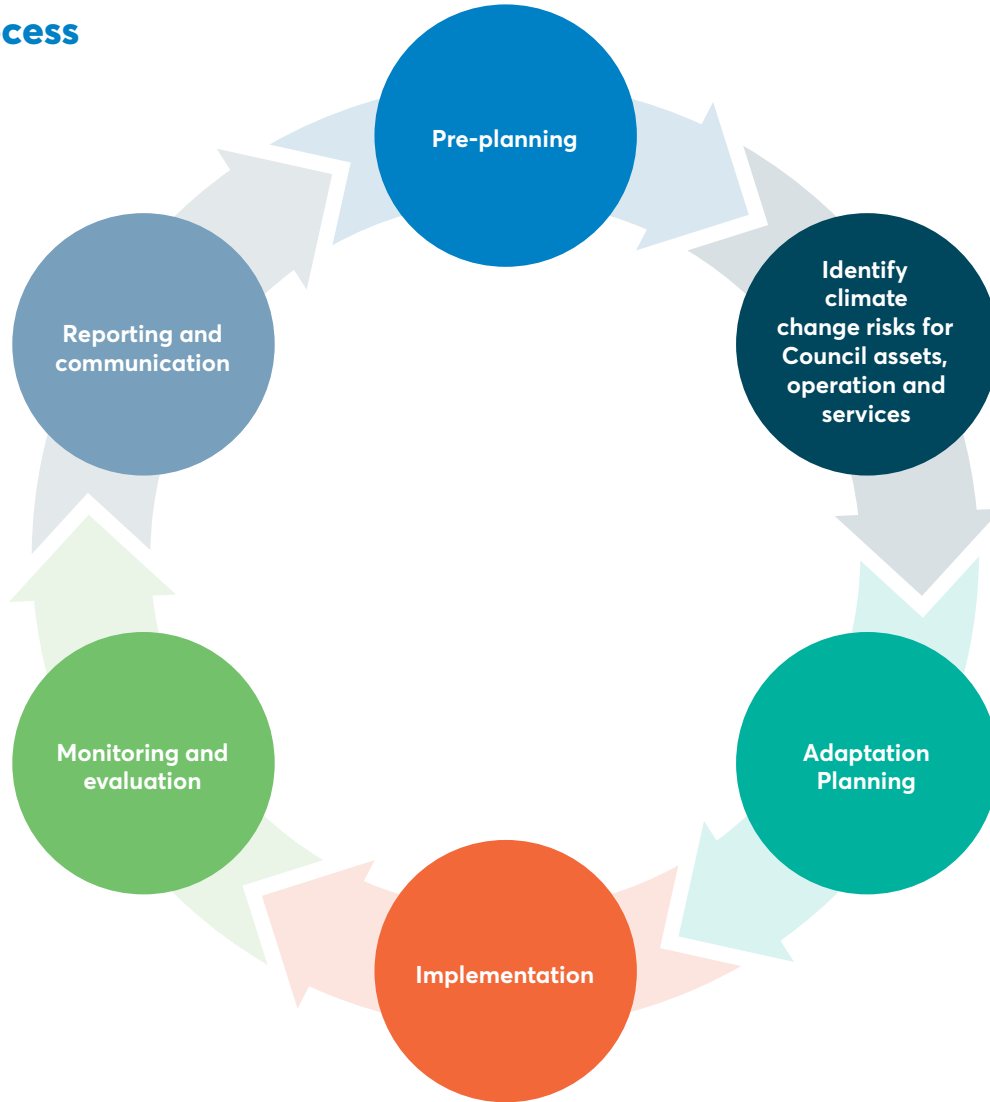
Adaptation to Climate Change by Council

Climate change is impacting organisations in various ways. Climate change adaptation is required to reduce threats and maximize opportunities presented to Council in its assets, operations, and services. This section focuses solely on Council operations, identifying climate change risks and opportunities to reduce those risks, as well as opportunities to increase resilience and reduce vulnerability. The process that Council will follow will be aligned with ISO 14090 (Adaptation to climate change – Principles, requirements, and guidelines). By following an international standard, Council can develop measures and report on adaptation activity in a verifiable way. Council will be also able to demonstrate that its approach to climate change adaptation is credible.

We are taking a whole-of-Council approach to make this transition. For example, we have embedded this thinking in the Infrastructure Strategy, which looks forward 30 years to identify climate issues that could affect our core infrastructure as well as providing options to address these issues. The Local Government Leaders Climate Change Declaration also provides guidance for this work.



Process



Source: ISO 14090 – Adaptation to climate change – Principles, requirements, and guidelines

Risk Identification

● ● ● ● **Alignment with Council's Risk Register. Review identified climate risks with reference to Council's risk criteria and capture relevant risks in Council's Risk Register. This action will involve the following tasks:**

Undertake a risk assessment to identify and assess impact on Council's ability to:

- A** Maintain public safety
- B** Protect and enhance the local economy
- C** Protect existing community structures and the lifestyle enjoyed by the local people
- D** Manage our natural and built environments
- E** Ensure sound public administration and governance

● **Include the Council's insurer in the risk management discussion**

● **Implement ISO 14090 (Adaptation to climate change – Principles, requirements, and guidelines) in Council operations to reduce risk, increase resilience and reduce climate vulnerability in Council buildings.**

● ● ● ● **Identify natural hazard risks under the Resource Management Act, Local government Act, Building Act and others.**

Adaptation Actions

● ● ● ● **Future planned actions**

- An Adaptation Plan for Council assets, operation and services based in the risk assessment will be developed (Budget: Climate Change adaptation \$1.464 M over the next 10 years)

KEY: ● How we will live and work ● How we will reduce consumption and waste ● How we will move ● How we will protect nature

City Context

We have a challenge ahead: to adapt to a changing climate – and the natural hazard impacts that comes with it. To respond to this challenge, Council is working with specialists, iwi, other agencies and the community. The aim is to have a clear pathway to adapt to complex and uncertain climate change impacts.

Projections of climate change depend on future GHG emissions, which are uncertain. Table 1 indicates the regional projections for Nelson-Tasman region:



Temperature

- Compared to 1995, temperatures are likely to be 0.7°C to 1.0°C warmer by 2040 and 0.6°C to 3.0°C warmer by 2090.
- By 2090, some parts of Nelson-Tasman are projected to have from 5 to 43 extra days per year where maximum temperatures exceed 25°C, with around 9 to 28 fewer frosts per year.



Rainfall

- Rainfall will vary locally within the region. The largest changes will be for particular seasons rather than annually.
- Seasonal projections show summer, autumn and winter rainfall increasing by up to 10, 7 and 11 per cent respectively by 2090, with little change in spring rainfall.
- Extreme rainy days are likely to become more frequent throughout the Nelson-Tasman region by 2090 under the highest emissions scenario.



Snowfall

- A reduction in the number of snow days experienced annually is projected throughout New Zealand, including the Nelson-Tasman region. The duration of snow cover is also likely to decrease, particularly at lower elevations. Places that currently receive snow are likely to see a shift towards increasing rainfall instead of snowfall as snowlines rise to higher elevations due to rising temperatures.



Wind

- The frequency of extremely windy days in the Nelson-Tasman region is not likely to change significantly. There may be an increase in westerly wind flow during winter, and north-easterly wind flow during summer.



Storms

- Future changes in the frequency of storms are likely to be small compared to natural inter-annual variability. Some increase in storm intensity, local wind extremes and thunderstorms is likely to occur.



Sea-level Rise

- New Zealand tide records show an average rise in relative mean sea level of 1.7 mm per year over the 20th century. Globally, the rate of rise has increased and further rise is expected in the future.

Table 1: Climate Change projections for the Nelson-Tasman region, Ministry for Environment, May 2018



Coastal hazards

- There may be increased risk to coastal roads and infrastructure from coastal erosion and inundation, increased storminess and sea-level rise.



Heavy Rain

- The capacity of stormwater systems may be exceeded more frequently due to heavy rainfall events which could lead to surface flooding. River flooding and hill country erosion events may also become more frequent.



Drought

- By 2090, the time spent in drought ranges from minimal change through to more than double. More frequent droughts are likely to lead to water shortages, increased demand for irrigation and increased risk of wild fires.



Disease

- There may be an increase in the occurrence of summer water-borne and food-borne diseases such as Salmonella. There may also be an increase in tropical diseases.



Biosecurity

- Climate change could increase the spread of pests and weeds. Warmer temperatures will make pests such as mosquitoes, blowflies, ants, wasps and jellyfish more prevalent in the region. Similarly, crop diseases such as fungi and viruses may penetrate into the region where currently they are excluded by lower temperatures. There may also be a loss of habitat for native species.

Table 2: Impacts of climate change for Nelson-Tasman region, Ministry for Environment, May 2018

Adaptation to Climate Change by the Community

The science is clear: our climate is changing and will continue to do so in the future. We are already seeing the impacts of more extreme weather events in Nelson. Part of Nelson City Council's role is to understand what the impact will be for our region and to work with our community to adapt and prepare for those impacts.

Council has undertaken extensive computer modelling to help determine the nature and extent of flood hazard events and coastal inundation and there have been some initial conversations with the community about managing these risks. Council has also undertaken activities across multiple impacts such as water security and management, slope instability and land management.

Council will work with Local Government New Zealand, central government and the community to address the broader issues and examine how impacts can be managed. Discussions with the community through the Whakamahere Whakatū Nelson Plan process, will help drive some of the local conversation on managing the effects of climate change.

Delivering a climate-resilient future requires all cities to take transformational action to reduce transport emissions, improve building energy efficiency, remove fossil fuels from the energy supply, minimise waste to landfill and change consumption patterns. It also requires cities to strengthen their ability to deal with the impacts of climate change through adaptation

The process that Council will follow is known as Dynamic Adaptive Planning Pathways (DAPP). The DAPP process assists Council and the community to identify the different options

for adaptation and assess these against various climate change scenarios. This process will help Council and the community with the management of change and adaptation to unavoidable climate change impacts. The Ministry of Environment guidelines Coastal Hazards and Climate Change (2017) sets out the process and can be accessed at <https://environment.govt.nz/assets/Publications/Files/coastal-hazards-guide-final.pdf>

Dynamic Adaptive Pathways Planning (DAPP) approach will be applied for working with the community on coastal inundation (flooding from sea water) and erosion hazards and with other hazards separately. This process allows Council and the community to identify options for adaptation and assess these against various climate change scenarios

Council is currently working on the early stages of the DAPP process which involves the assessment of coastal hazards, determining the matters that the community values that may be impacted and considering the risks to the community and its assets from the hazards.

This section of the Plan refers to a climate action process informed by the community and key stakeholders, which identifies the risks and develops adaptation plans.

Process



Risk Identification

Sea level rise, heavy rainfall, flooding events, storm, drought, bush fires and extreme temperatures.

- ● Mapping areas of coastal inundation and identification of coastal structures (sea level rise, tidal and storm inundation)
- ● Mapping flooding areas (river tidal)
- ● Mapping coastal erosion
- ●●● High level identification and assessment of climate change risks from coastal inundation, erosion and flooding on the lower Maitai river across five domains (human environment, natural environment, economy environment, built environment and governance) for short and long-term climate change impacts. These will be monitored and reviewed over a series of LTP processes as a result of the iterative process
- ● Identification of vulnerable species and habitats at risk from climate change impacts, including threatened coastal habitats and species at risk from sea level rise
- ● Marine, freshwater and terrestrial biosecurity field monitoring to identify any new biosecurity risks resulting from changing climate and water temperatures
- ● State of the Environment monitoring programme which gathers long-term environmental data. Key parameters may be useful to inform decision making as the environment changes in response to climate change (groundwater salinity, groundwater level, sea level, tidal, water temperature, rain changes, river flows, draught resistance plants etc.). Budget is a portion of the roughly \$900k Monitoring the Environment activity (in FY 21/22).
- ● Collection of data and monitor shoreline changes through CoastSnap
- ● Identification of vulnerable people and communities and transition to a more resilient environment.
- ●●● Identification and assessment of risks and opportunities from all other relevant climate change effects such as heavy rainfall, flooding events, storms, drought, bush fires and extreme temperatures for short and long-term climate change impacts across the five domains (see above), considering the New Zealand's most significant climate change risks described in the National Climate Change Risk Assessment (MfE, 2020).
- ●● Detailed and specific cultural heritage impacts assessment if required
- ●● Identification of impacts on key infrastructure (roads, state highway, bridges, landfill, water supply, wastewater, and stormwater assets)
- ●● Liaison with key organisations (Port, Airport, Waka Kotahi) to complement and find synergies with the climate change risk identification and assessment done by each organisation

KEY: ● How we will live and work ● How we will reduce consumption and waste ● How we will move ● How we will protect nature

Adaptation Actions

Current Actions

- ● To reduce flooding and coastal inundation the following projects will be undertaken: Stormwater and flood prevention projects: Saxton Creek Upgrade, Orphanage Stream Upgrade, Little Go Stream Upgrade (Rutherford Stages 1 and 2), York Stream Upgrade, Maitai Flood Mitigation Project, Jenkins Creek Upgrade, Poorman Valley Stream Upgrade (Budget: \$52M over 10 years)
- ● Preparation of land use plan/s to support adaptation (Budget: Whakamahere Whakatū Nelson Plan \$2.12 for FY 21/22)
- ●●● Natural hazards will be assessed, starting with coastal inundation (flooding from sea water) and erosion hazards. Ongoing
- ●●● Public engagement will be undertaken on coastal hazards as part of the DAPP (Dynamic Adaptive Pathways Planning) process
- ● The resilience of our natural environment and biodiversity is being monitored, protected and built through Council's Nelson Nature, Healthy Streams, Sustainable Land Management, Coastal/Marine, Freshwater monitoring and Biosecurity programmes. This is related to how the natural environment is adapting to climate change, and how resilient habitats and species are responding to changes. Activities include freshwater, coastal and marine monitoring and research into vulnerable habitats and species. Potential adaptations are being explored such as coastal habitat retreats and understanding the drought resistance profile of native plants (Budget: a portion of the roughly \$900k Monitoring the Environment activity, plus a portion of the \$434,912 Nelson Nature budget in 2021/22)
- ● A biosecurity programme is in place to manage existing marine, freshwater and terrestrial biosecurity risks, and identify and respond to new risks (Budget: \$333,108 including \$40,000 specifically for emerging pests and \$56,832 for invasive marine species monitoring in the 2021/22 year)
- ● Council is working with landowners to support climate change resilience in the rural sector through the Sustainable Land Management programme (Budget: \$67,353 in 2021/22)
- ● An inventory of biodiversity and natural features at risk from sea level rise (Biodiversity Strategy - Outcome 5 "Biodiversity is resilient in the face of climate change") has been completed and areas will be prioritised for protection and ecological restoration
- ● Drought response advice and information for rural landowners, including advice on water conservation measures Water demand management for households on reticulated water supply (Budget: Staff time only).

Planned Future Actions

- ●● Community values and objectives will be identified, followed by consideration of risks from hazards, and options available to respond starting with coastal inundation (flooding from sea water) and erosion. Other hazards will be considered separately
- ●●● Feedback will be sought from the community about how they are already responding, or planning to respond, to the risks and impacts from inundation
- ●●● Options/pathways for adaptation for coastal hazards will be developed over the short, medium and long term. Budget is funded through the Long-Term Plan 2021-2031, draft Whakamahere Whakatū Nelson Plan and Infrastructure programmes
- ●●● Adaptation plans, including options, timeframes, funding sources and responsibilities for other climate change hazards will be developed. Budget is funded through the Long-Term Plan 2021-2031, draft Whakamahere Whakatū Nelson Plan and Infrastructure programmes
- ● Nature-based solutions will be assessed when developing adaptation plans
- ● Development of City Centre Spatial Plan which will consider climate change adaptation opportunities for Nelson's city centre (Budget: \$8M for the next 10 years through LTP)
- ● A resilient transport network will be developed
- ● Social infrastructure will be incorporated in the analysis of risks (e.g. schools, medical clinics)
- ● The most suitable platform to engage with the community will be identified
- ●● Engagement with Māori/iwi will take place to assess values and embrace Te Ao Māori view in the development of adaptation actions
- ● Council will plan for and respond to biosecurity incursions that occur as the climate alters (Budget: A portion of \$40,000 for FY 21/22 for emerging pests which are expected to increase as a result of warming air and sea temperatures and changing climate; and \$56,832 in 21/22 for invasive marine species monitoring)

KEY: ● How we will live and work ● How we will reduce consumption and waste ● How we will move ● How we will protect nature

- ● Council will prioritise species and habitat protection programmes based on climate change vulnerability as well as biodiversity significance
- ● Council will use the latest science to inform project delivery, such as using drought resistant plants in areas vulnerable to dry soils, and understanding the requirements for long-term site-specific ecosystem resilience
- ● Council will implement applicable legislation and subordinated documents such as the Climate Adaptation Act (when it is released by Central Government) to support climate adaptation, NZ Coastal policy, etc.
- ●●● Council will respond to the Strategic Plan Act (regional perspective) – which is part of the Resource Management Act reforms
 - Explore the future, find out how communities are affected and develop objectives
 - Identify and evaluate what we can do and develop adaptive management strategies
- Implement strategy
- Monitor strategy using early signals and triggers (decision points) for adjusting between pathways
- ● Council's Water Supply activity will include climate change adaptation projects (Budget: \$2,089,200 through LTP from FY 25/26 till 30/31)
- ●● There are a number of projects in Council's Wastewater/Water activity (Budget: \$3,850,000 for wastewater and \$270,450 for water through LTP)
 - Climate Change – Vulnerability Assessment Implementation from FY 25/26 till 30/31
 - Climate Change – Adaptation Strategy from FY 25/26 till 30/31
- ●●● Climate Change - Adaptation Strategy Implementation from FY 26/27 till 30/31



“

We agree that the population of the Nelson area will need to be educated to be resilient and proactive if any headway is to be made on this difficult topic. We are encouraged by the work the Council have done and consider the work being done by the Climate Commissioner as vital”.

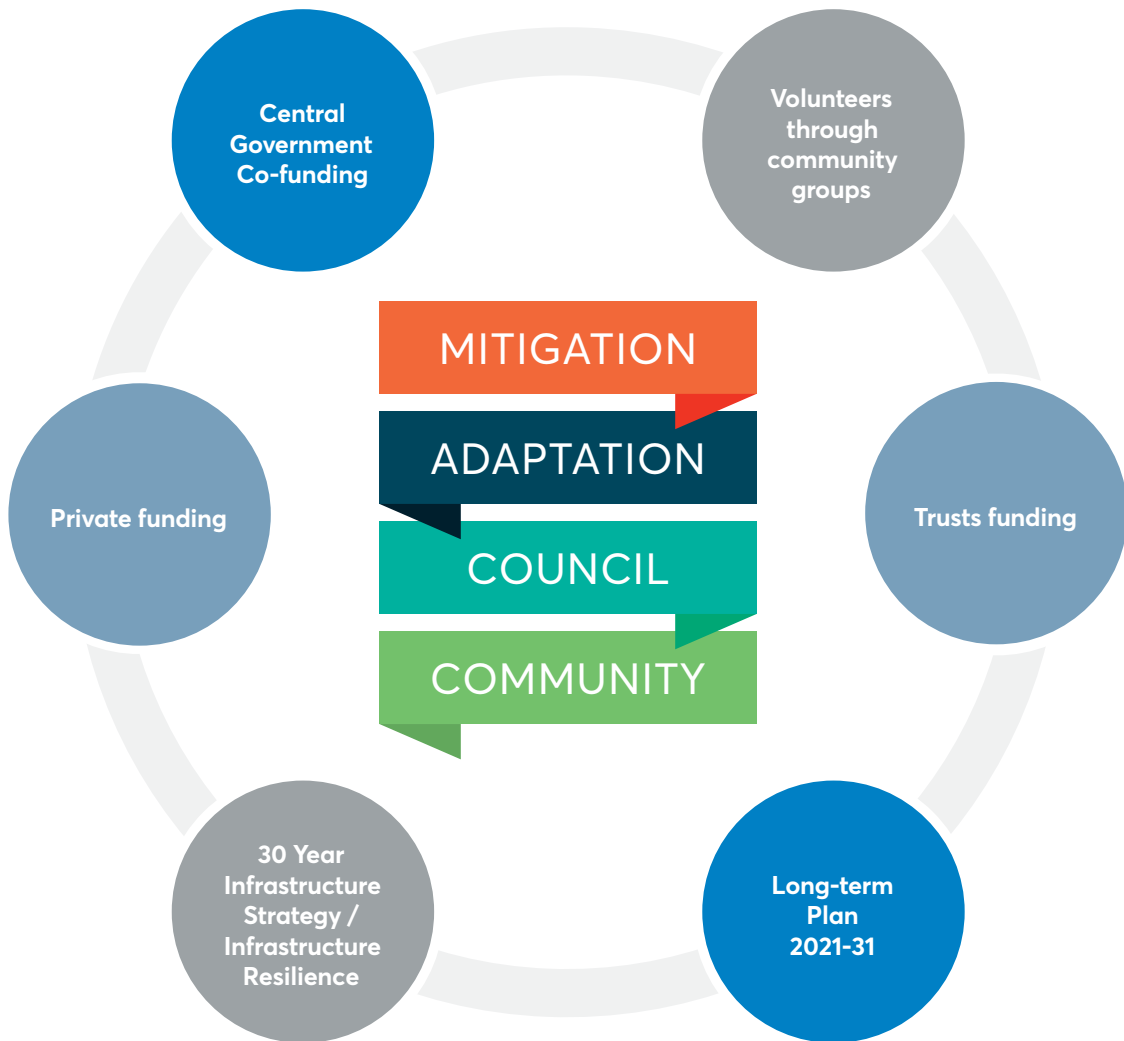
National Council of Woman

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NMH is supportive to the flood protection works outlines in the Activity summary. Council's flood protection system is designed to protect people and property from harm while minimising the negative impacts of flood protection activities on the surrounding environment”.

Nelson Marlborough Health, LTP 2021 Process

Resources/Budget/Finance





CLIMATE ACTION NELSON



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