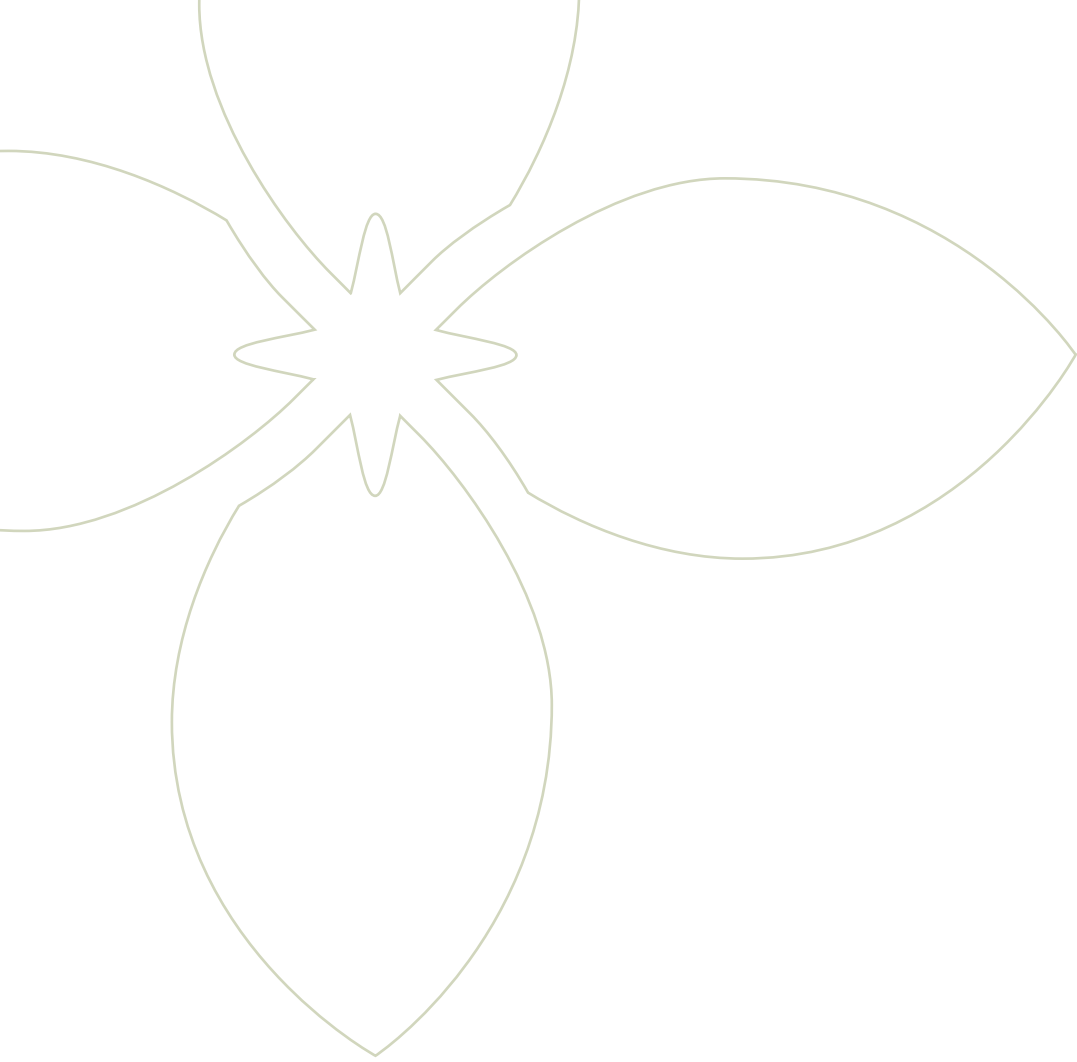


# Noosa Climate Change Response Plan





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# Introduction

## The climate emergency

We are living in times of increasingly complex and rapid change, driven by technological advances, economic transitions, demographic shifts, and a changing climate. Noosa Council, in partnership with the local community and other levels of government, has an important responsibility for providing essential services, managing local risks, and supporting disaster recovery, as well as adapting to changing circumstances and finding new opportunities to support a safe and prosperous Noosa into the future.

The 2019-2020 bushfire season, and the global pandemic, are stark reminders of both the fragility of the social systems and networks upon which we all depend, as well as the importance and benefits of responsible planning, rapid mobilisation, and working together as a community. COVID-19 has also shown us that we can make our own new normal – throw out old rules that no longer work for our community and make new ones, and ask ourselves what we want for our world. The response to the COVID-19 pandemic has demonstrated how scientifically-sound and carefully considered actions can lead us out of a crisis.

This is the type of unified response needed for responding to the global climate emergency. The disruptions to our way of life caused by a rapidly changing climate demand a certain moral courage that enables us to prioritise the ‘collective’ and to take positive action for ourselves, for future generations, and for the planet. It requires everyone to act, to ‘step up’ and to reimagine and create a new, cleaner, and safer Noosa.

This Climate Change Response Plan is a vision for a new future for Noosa, and a blueprint for us all to do our bit locally and to be an example for others of something better. It challenges us all to think big, heed the scientific advice and take careful and resolute action now.

### Our journey so far

Noosa Council declared a climate emergency in 2019, making a strong statement in support of taking action on climate change as part of a collective voice across local, state, and federal governments worldwide. We need action at all levels of government and across all sectors to avoid dangerous climate change. There are carbon emissions within the control of Council, carbon emissions elsewhere within the Shire that we can influence, as well as those that require regulatory change and leadership beyond Noosa’s boundaries.

Over the last several years Council has been working to reduce its own emissions. Since 2016, Council has had in place a Zero Emissions Organisational Strategy for the Council’s operations to achieve zero net emissions by 2026. In this time, we’ve successfully achieved the following:

- Installation of over 600 kW solar PV across Council owned and operated buildings and facilities
- Improved energy efficiency of air conditioning systems for Council facilities
- Changed hundreds of lights to energy efficient LEDs
- Worked to improve waste management and the efficiency of the landfill gas extraction at the Noosa landfill site
- Provided grants to community groups for solar and energy efficiency projects

- Provided a free solar advice hotline and education programs for households and businesses through the Australian Energy Foundation
- Partnered with ZEN Inc on a range of initiatives including solar for business, the electric vehicle expo and Race to Zero school program.

The installation of the solar systems has saved Council over \$500,000 in electricity costs since the program commenced in 2017.

In 2017 Council prepared a Climate Change Response Policy setting out our commitment to proactively plan and prepare for climate change, and to build knowledge and capacity as an organisation.

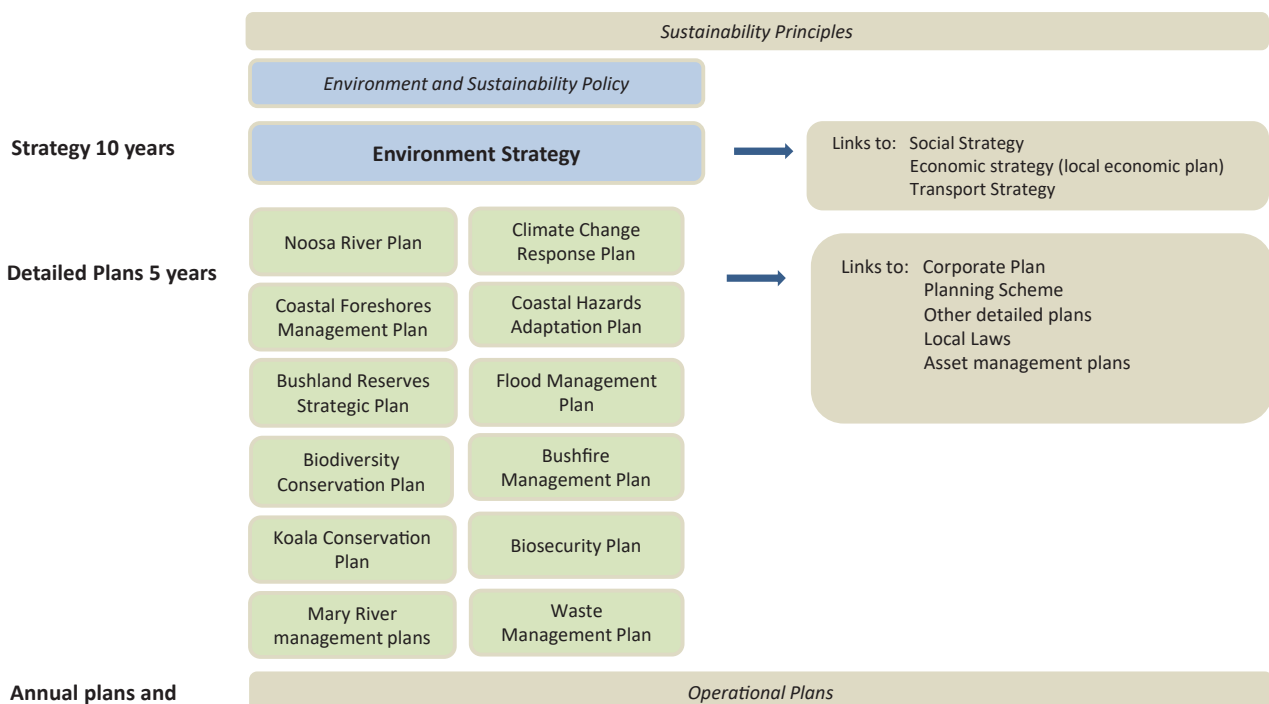
Council is also progressing the development and implementation of a Coastal Hazard Adaptation Plan for addressing increasing risks associated with coastal erosion, tidal inundation and sea level rise for public and private assets, including critical public infrastructure.

The Noosa Council Environment Strategy was also adopted in 2019 with outcomes and targets for both emission reduction and climate adaptation. This includes the target that Noosa Council operations, and the Noosa community as a whole, reach net zero emissions by 2026.

Through its participation in initiatives such as the Queensland Climate Resilient Councils, and the Cities Power Partnership, Council has joined many other local governments across Queensland and Australia in committing to a sustainable post-COVID economic recovery that creates local jobs, supports industries and sectors that invest in a zero-carbon future, and contributes to sustainable resilient communities.

Whilst this Plan sits under the Environment Strategy, it is recognised that this is a whole of Council document and has implications for all operations throughout Council.

## Environment Policy Framework



## A better future

Through the strategic priorities and actions outlined within this Climate Change Response Plan, Noosa Council is striving to lead by example by making positive progress, showing the way, and supporting and inspiring others.

Together, Council and the community are well positioned to be a powerful influencer to drive deep systemic change from the grassroots level. This includes:

- **Transition to net zero emissions by 2026** for Council operations and for the community
- **Transition to 100% renewable energy** powering Council buildings and facilities, and powering Noosa Shire
- **Drive clean low emissions industry**, and innovative technologies and solutions that address the climate crisis
- **Be a well informed and prepared community** that considers climate change in making day-to-day and business decisions
- **Facilitate sustainable, resilient and adaptive communities**, buildings and infrastructure to help reduce the impacts of climate change and reduce emissions
- **Support vulnerable populations**, ensuring inclusion in solutions and equitable access to opportunities and benefits
- **Accelerate transition to sustainable transport** and increase mobility through new technologies and active modes of transport such as walking and cycling
- **Enhance ecosystem health, adaptive capacity and carbon drawdown** whilst balancing other climate risks such as more frequent bushfires
- **Grow and distribute food locally and sustainably**, enabled by sustainable land management and regenerative farming practices
- **Advance a zero waste circular economy** where products and materials are reused and repurposed.

Responding to climate change involves a multi-pronged approach:

- **Reducing emissions** by reducing the levels of heat-trapping greenhouse gases in the atmosphere through: eliminating the sources of these gases (such as the burning of fossil fuels for electricity, heat or transport); adopting sustainable development solutions in energy, land, infrastructure and industrial systems; and enhancing the sinks that store these gases including vegetation and soils (referred to as carbon drawdown or sequestration)
- **Adapting to climate change** by building resilience in our local communities, built environments, economy and natural systems to reduce our vulnerability to the harmful effects of climate change.

This new future also means making the most of the potential opportunities that climate change brings, such as fostering new clean tech industries and positioning Noosa at the forefront of innovation and economic development. It means transitioning beyond business as usual to making a systemic shift across a range of sectors.

## Why do we need to act?

We are already beginning to experience the effects of a changing climate. We can expect to see more extreme weather events, bushfires, changes in rainfall patterns, increased temperatures and heatwaves. As the climate continues to change, the risks to people and property, infrastructure, human health, natural systems, agriculture and the economy are expected to increase.

We all have a responsibility to reduce our share of global emissions as a Council and as a community to minimise further impacts and safeguard our future.

## Council's role

It is critical that Council continues to adopt a proactive approach regarding climate risk to help build the adaptive capacity of our shire and reduce emissions. Council has a role in:

- Helping to inform and prepare our local community to ensure greater resilience in the face of climate change impacts and extreme weather events
- Helping to mobilise and strengthen community advocacy for greater action on climate change across all levels of government and different sectors by strengthening relationships, amplifying community voices and leveraging connections
- Improving decision making by embedding consideration of climate risks and emissions reduction into all areas of council operations

- Ensuring appropriate development requirements, infrastructure planning and asset management that take account of climate risks and emissions reduction
- Ensuring climate-ready and effective disaster management and governance systems
- Improving knowledge, capability and capacity to respond to climate change in order to drive meaningful action and localised emissions reduction
- Assessing climate impacts and coordinating an appropriate response and measuring progress.

The choices we make today are the pathway to our children's future - one that is safe and well prepared for any unavoidable impacts of climate change. Effective and affordable emissions reduction solutions are available, and we are confident that we can mitigate risks and adapt to climate change impacts locally. We need a clear and collaborative process to prepare and deliver solutions. This includes making the most of the new opportunities here in Noosa. We also need to engage and empower everyone in our community and to protect our most vulnerable as we adjust to a new future together - where people, businesses and nature thrive.





## About this Plan

This Climate Change Response Plan intends to establish Noosa as a genuine leader in responding to climate change by creating and implementing a cross-sectoral, cross-functional approach that is bold and efficient and maximises co-benefits.

The document details a 5-year plan that sets out the context, desired outcomes and actions for addressing climate change in Noosa Shire in partnership with the community. The plan provides overarching strategic direction, specific actions and targets for responding to climate change. The objectives are to ensure:

- Key climate risks are understood and accepted by Council and the community
- Roles and responsibilities for addressing climate risks with Council and key sectors of the community are established
- Climate risks and emissions reduction are considered and responded to in a holistic and strategic way and embedded in decision making, policy and planning
- Opportunities arising from climate change for Council and the community are identified
- Collaborative approaches are considered and pursued for reducing emissions and adapting to climate change
- Implementation and outcomes of climate action and changing risks are monitored and regularly evaluated.

The plan is structured under 8 themes:

1. Strong leadership and governance
2. Energy efficiency and renewable energy
3. Clean low emissions industries
4. Sustainable transport
5. Healthy and resilient natural systems and carbon drawdown
6. Sustainable agriculture and food systems
7. Resilient and adaptive communities and built environments
8. Zero waste and circular economy

Each theme has strategic priorities with information on why these priorities matter; how they will be achieved; Council's role in driving and influencing change; and important partnerships.

Within the Summary of Actions there is an overview of the specific actions to be implemented over the next few years, indicators for monitoring progress, and estimated timeframes for delivery.

Ongoing community involvement and contribution in the plan's implementation is important for ensuring successful delivery of the ambitions and strategic priorities of the plan.

## Climate change principles and objectives

The following principles from the Climate Change Response Policy and overarching Environment Strategy will help guide strategic priorities, and the implementation of climate change actions:

- Apply systems thinking to climate change adaptation and emissions reduction by developing and implementing short- and long-term responses that achieve **timely, well informed and effective action** while also delivering other social, economic and environmental co-benefits
- Commit to being **innovative, flexible and adaptive** in responding to climate change
- **Increase resilience** of the community, the economy and our natural assets to environmental hazards and climate change
- Ensure **ecological sustainability** is fully integrated into decision making in order to help secure the continued availability of natural resources for present and future generations
- Use a **scientific evidence-based approach** to managing the environment and climate change and adapt and respond appropriately as new information arises
- Take an **adaptive management** approach to climate risks and periodically undertake climate risk assessments and updates consistent with ISO 31000:2009
- Be a regional and Queensland leader for climate action and advocacy
- **Actively communicate and partner with the broader community** to improve awareness and build capacity around environment issues, climate risks and emissions reduction

- Provide **up-to-date and balanced information** to the community on climate change that builds community understanding, preparedness and resilience, and helps mobilise community action on climate change and emissions reduction.

Climate and emission reduction decisions consider Council's broader ongoing financial sustainability requirements including ongoing affordability considerations on annual rating decisions.

## Climate projections

Council recognises the important role of the United Nations Intergovernmental Panel on Climate Change (IPCC) in reviewing and summarising the latest climate change science for public use. Due to slow global progress on reducing carbon emissions, Council will use, as a minimum, regional climate projections that are based on a low-moderate global emissions reduction trend to inform its climate risk analysis (commonly referred to as "business as usual" or BAU)<sup>1</sup>. We will also use climate change projections that are consistent with those used or supported by the Queensland Government.

In the absence of either of these, we will seek to apply climate projections published by the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

Council will commence a review of its climate response plans and actions within 12 months of the publication date of new regional climate projections from the above organisations.

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<sup>1</sup> Referred to as "Representative Concentration Pathway (RCP) 8.5"



# Local Climate Change Impacts

## Our current climate

The South East Queensland region has a sub-tropical climate. The average annual temperature is 19°C. Summer average temperature is around 24°C, in autumn and spring it is 20°C, and in winter 14°C.

Annual and seasonal average rainfall are variable, affected by local factors such as topography and vegetation, and broader scale weather patterns, such as the El Niño–La Nina. Most rainfall occurs in summer and autumn.

## Our changing climate

The climate is changing across Queensland. Average temperatures across the state are around 1°C higher than they were 100 years ago. Recent decades have shown a clear warming trend driven by increasing atmospheric carbon emissions stemming from human activities. The climate has always been variable, but human-caused climate change is leading to shifts beyond this natural variability, at a rate that could be as much as 50 times greater than otherwise would have occurred.

Noosa has a long history of climate-driven extremes such as floods, droughts, heatwaves and bushfires.

Climate change is likely to exacerbate the frequency and/or severity of these events. It can be an amplifier of these and other hazards, and even lead to the emergence of new risks.

Below is a summary of the expected changes in key climate variables for Noosa, as well as some of the risks that we will likely need to adapt to. The figures presented have been obtained from the Queensland Government's Climate Dashboard (2021), and are based on a global emissions scenario whereby low-moderate efforts to reduce carbon emissions are made by the year 2090<sup>1</sup>.

The risks posed by a rapidly changing climate can be chronic (e.g. changes in average temperature or annual rainfall totals) or acute (e.g. rapid onset but relatively short-lived disaster events such as floods and storms).

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<sup>1</sup> This scenario is called 'Representative Concentration Pathway (RCP) 8.5'

## Temperature

Noosa's average, maximum and minimum temperatures are projected to continue to rise. For the near future (2030), the annually averaged warming is projected to be around 1.5°C above the climate baseline of 1986–2005. By the year 2070, this projected range of warming will reach between 2.1 to 3.4°C above the baseline. Noosa's current summer average temperature is 25°C. This could increase to 27°C by 2050, 28°C by 2070, and 29°C by 2090.

Such rapid changes in temperature could have an effect on the lifecycles of local flora and fauna, the viability of horticultural enterprises, and increase the prevalence of mosquito-borne diseases and other harmful pests. Increases in the average and maximum temperatures will also increase cooling costs for private- and publicly-owned buildings.

There is likely to be a substantial increase in the frequency and duration of heatwaves. Currently, the average duration for the longest single heatwave in a year is around 5 days. The duration of such an event is projected to increase to 7.5 days by 2030, 14 days by 2050, 33 days by 2070, and 67 days by 2090. Such a change represents one of the most significant climate risks to Noosa.

In Queensland, heatwaves are responsible for more deaths than all other natural hazards combined. Those groups most at risk include the

elderly, the homeless, and those with pre-existing health conditions. This is significant given the average age for a resident of Noosa is higher than the Queensland average. In addition to people, heatwaves can have an impact on critical infrastructure services, livestock and other agricultural practices, building cooling costs, and local flora and fauna.

## Rainfall

High climate variability is likely to remain the major factor influencing rainfall changes in the next few decades. By the year 2090, projections of average total annual rainfall show little change or a decrease across the Noosa Shire. However, the intensity of heavy rainfall events is likely to increase as summer totals rise by 11% by 2090. Conversely, winter and spring totals are projected to decrease by 8% and 25% respectively, by the year 2090.

By late this century, it is likely that the region will experience more time in drought, compared to the present day.

The combination of a drier dry season and wetter wet seasons, and an increase in drought conditions, could lead to a range of risks and changes such as soil loss through erosion (during heavy rainfall), localised flooding, compaction of soils leading to reduced absorption of rainfall, increased prevalence of outdoor sporting injuries, soil movement leading to fractures in built structures, and impacts on agricultural enterprises and native flora and fauna.



## Oceans

The average sea level for the coastal region Noosa is situated is projected to rise by 0.8m above present day levels by the year 2100. Higher sea levels will increase the risks posed by coastal hazards such as storm tide inundation and coastal erosion, and lead to more frequent nuisance flooding of low-lying foreshore areas. Noosa Council's Coastal Hazards Adaptation Plan, and accompanying technical studies, contain details regarding how these risks are expected to change, and what the most appropriate pathways for dealing with these risks are for Noosa's coastal zone.

In addition to sea level rise, sea surface temperatures off the Queensland coast have risen markedly over recent decades, and warming is projected to continue. Such increases could lead to changes in the makeup of local marine and estuarine ecosystems. Warmer seas could lead to a southward expansion in the range of certain tropical marine species, including those both visually attractive to beachgoers and those that are potentially harmful.

The world's oceans have been absorbing a significant amount of carbon dioxide emitted by human activities, and have increased in acidity by around 25%. If carbon emissions continue to increase as currently, this acidification of the oceans will also increase. Along with increases in sea surface temperature, this is likely to have a significant effect on marine ecosystems, as a more acidic ocean makes it more difficult for important marine species such as corals and plankton to make their skeletons and shells. Such impacts will extend up the oceanic food chain, affecting important ecological values and economic activities such as commercial and recreational fisheries and tourism.



## Extreme events

A warmer world is likely to result in an increase in the severity of extreme wind and storm events. Based on currently available information, the frequency of tropical cyclones forming and impacting the Queensland coast is expected to decrease. However, a warmer atmosphere and seas is likely to result in an increase in the average severity of tropical cyclones, as well as a southward expansion in their normal range. Whilst there does not appear to be any change in their frequency yet, climate change projections indicate an overall decrease in East Coast Lows can be expected.

An increase in the severity of storm and tropical cyclone events will lead to increased risks to people, private property, important infrastructure, and the local environment of Noosa associated with more intense and frequent flash flooding, and more frequent severe or extreme wind events.

Bushfire weather is a measure of fuel dryness and hot, dry, windy conditions. Recent bushfire events of 2019/20 in Peregian, Cooroibah and Noosa North Shore have highlighted the ever-present risk of bushfire. The combination of higher average temperatures, more frequent and longer heatwaves, and an overall drying trend is likely to result in an increase in bushfire risks across certain areas of Noosa Shire.

## Transition risks

Not all risks associated with a changing climate are related to the natural or physical environment. How society responds to the threat of climate change can lead to 'transition risks'. Transition risks are the result of steps taken primarily by governments, but also individuals and businesses, to reduce carbon emissions. Most transition risks are the result of either regulatory or economic change.

An example of a transition risk is a levy on carbon emissions. The introduction of a carbon levy would increase the cost of doing business for organisations responsible for carbon emissions, such as a local government that owns a landfill or an airline whose planes rely on fossil fuels. Increases in business costs are often passed on to customers and consumers, thereby potentially affecting the Noosa community through the household budget.

Another example is a reduction in the expected return on investment for assets and activities that do not align with a clean economy, such as a coal-fired power station. Some institutions have already begun to refuse to provide financing or commercial insurance for business activities on the grounds that the activities will result in an increase in carbon emissions. The lack of finance or insurance can create what is known as a 'stranded asset'. If investment portfolios (such as those included in superannuation funds) are not carefully managed, the prospect of stranded assets can create an economic transition risk, which can affect the superannuation returns for ordinary people.

A more direct form of economic transition risk is the transition from internal combustion engine (ICE) cars to electric vehicles (EV). For example, a buyer of an ICE car may be expecting to re-sell the vehicle in several years for 50% of the purchase price. However, they may receive significantly less than this amount if future buyers are only interested in purchasing an EV.

The existence of transition risks should not be viewed as a reason to avoid actions to avert climate change, but rather as an added incentive to transition to a cleaner economy and society more rapidly; a form of first-mover advantage. Taking such steps in Noosa, sooner rather than later, is likely to minimise pressure on future budgets for Noosa Council, and potentially the community as well.

## The economic cost of climate change

The costs of a changing climate are already being felt, and without action these are likely to increase significantly in the decades ahead.

For example, the cost of extreme weather in Australia has more than doubled since 1970, totalling \$35 billion over the past decade. By around mid-century, extreme weather events exacerbated by climate change, as well as the impacts caused by rising sea levels, could cost the Australian economy \$100 billion every year. Figures regarding the potential economic cost to Noosa from climate change are not yet available.

## Climate impacts and risks for key local sectors

Figures 1 – 5 illustrate how key sectors across the Noosa Shire are likely to be affected by a rapidly changing climate. It is common for the same or similar risks to be faced by multiple sectors.

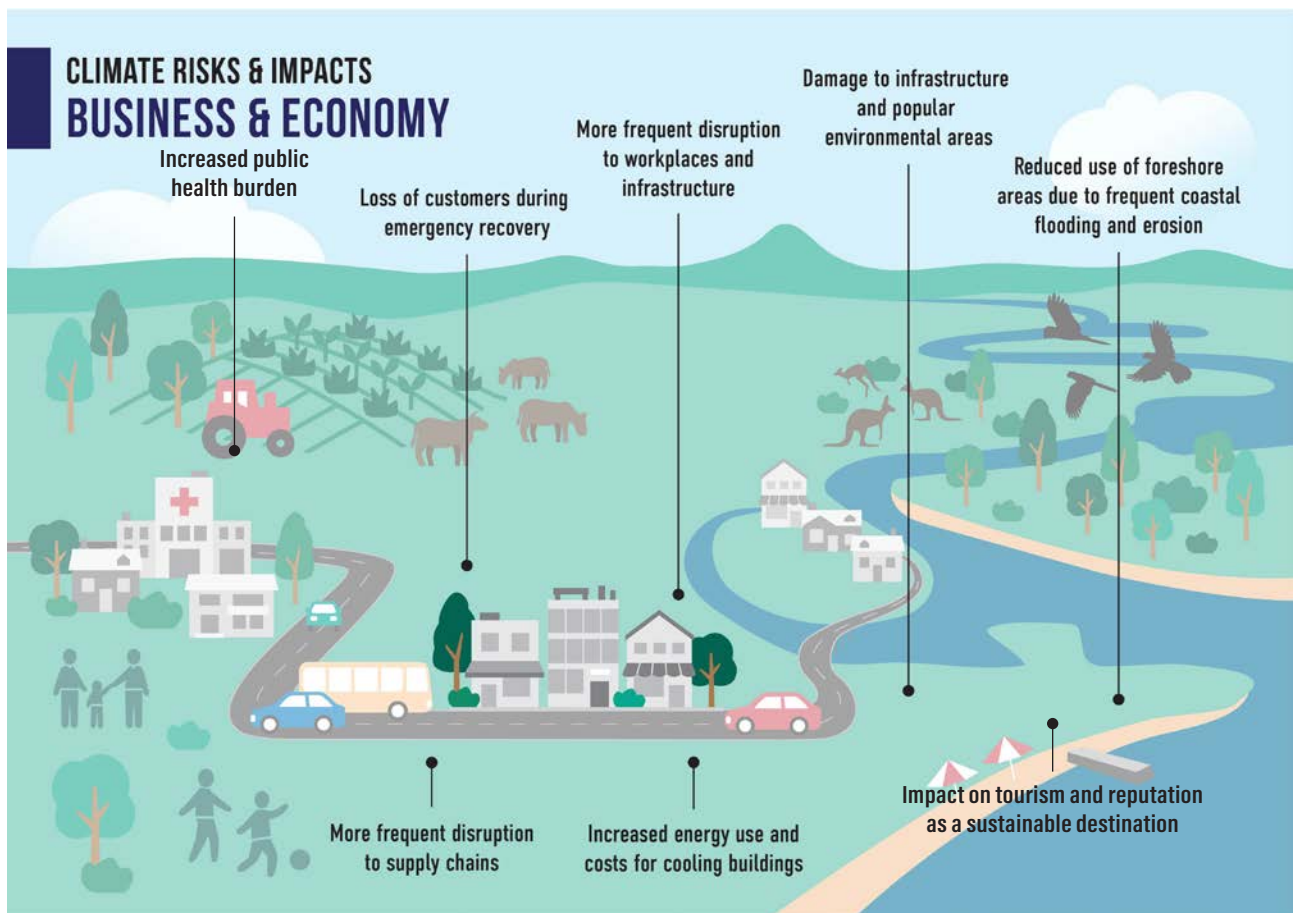


Figure 1: Climate risks for Noosa's business and economy



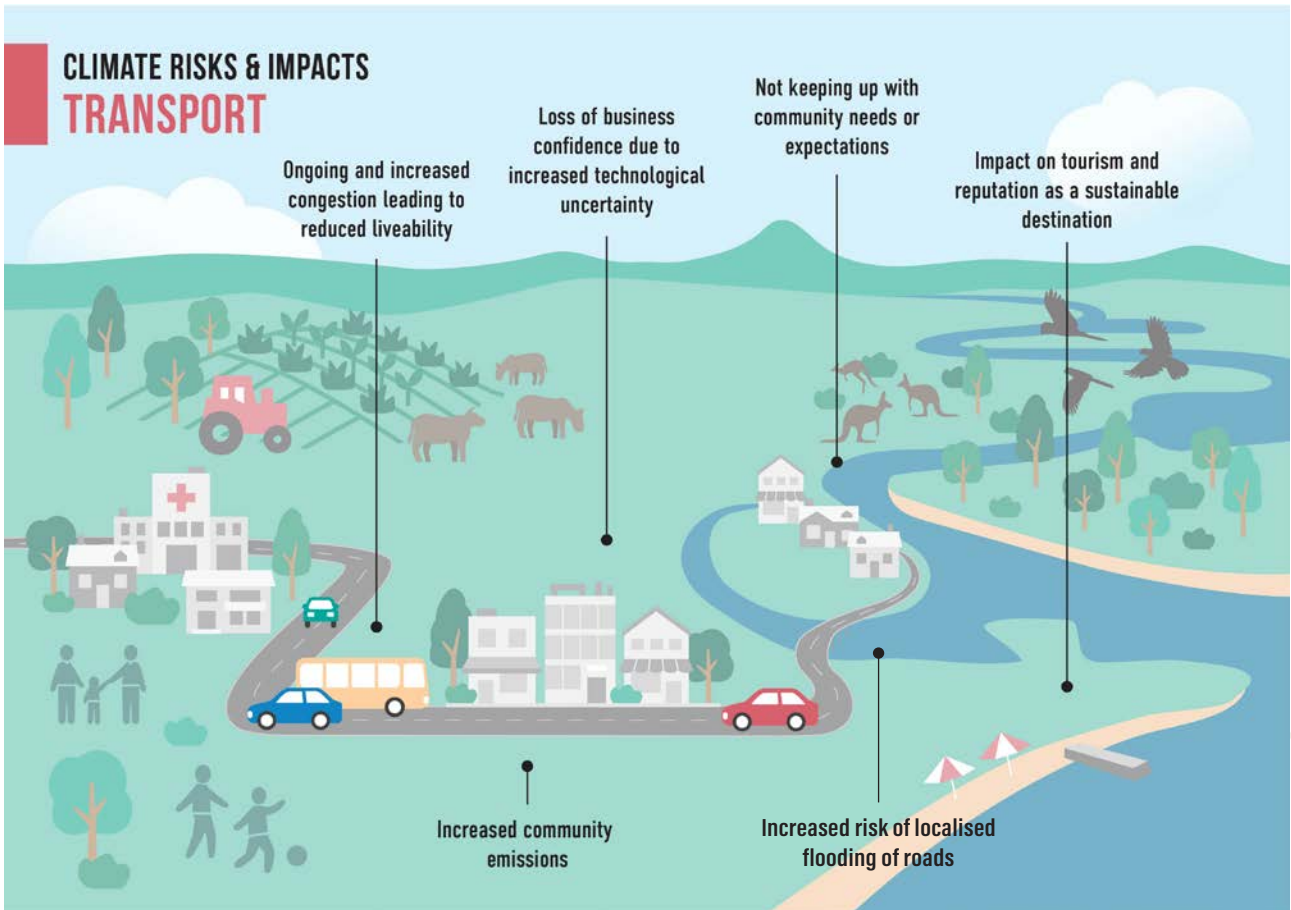


Figure 2: Climate risks for Noosa's transport system

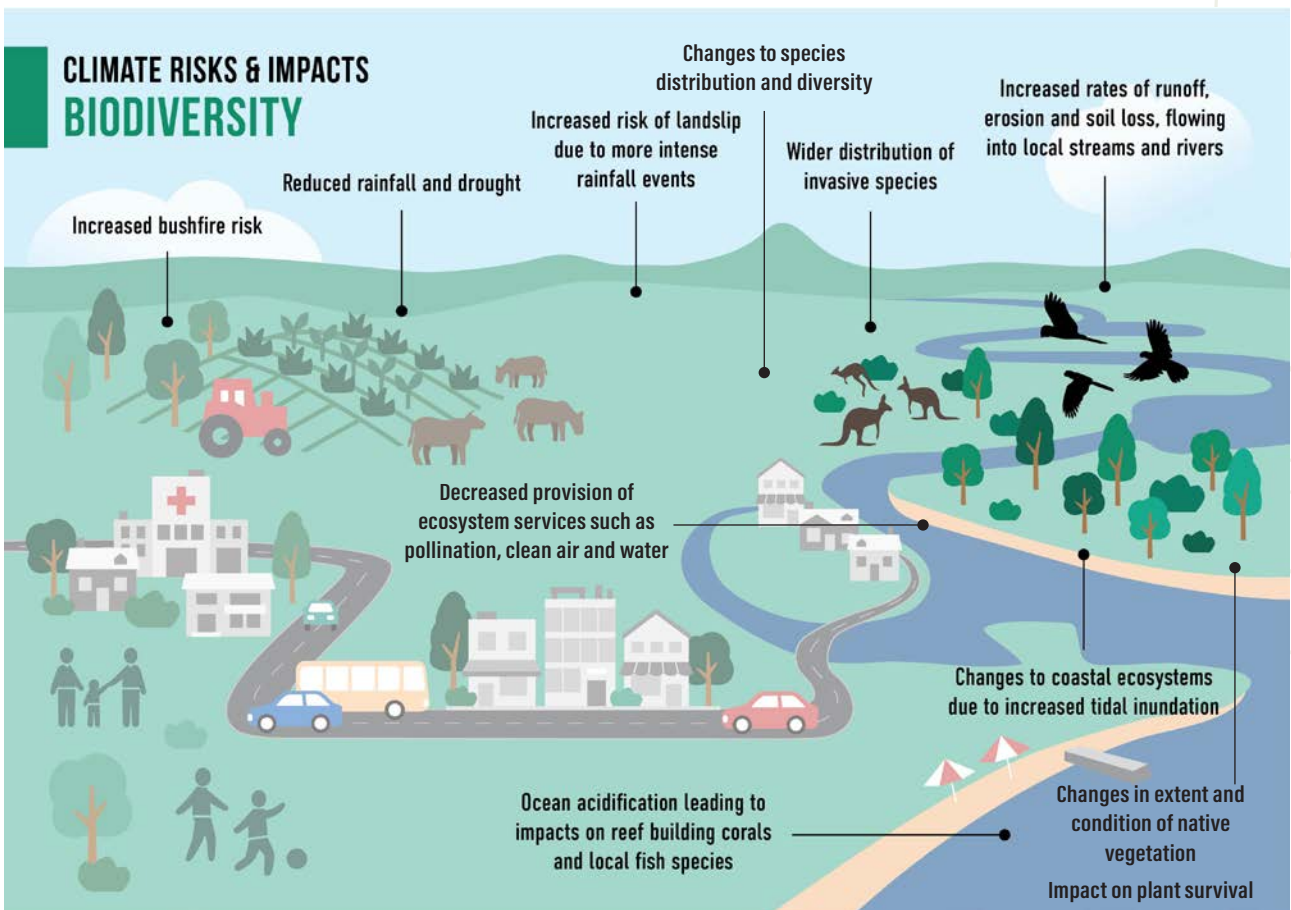


Figure 3: Climate risks faced by biodiversity in Noosa

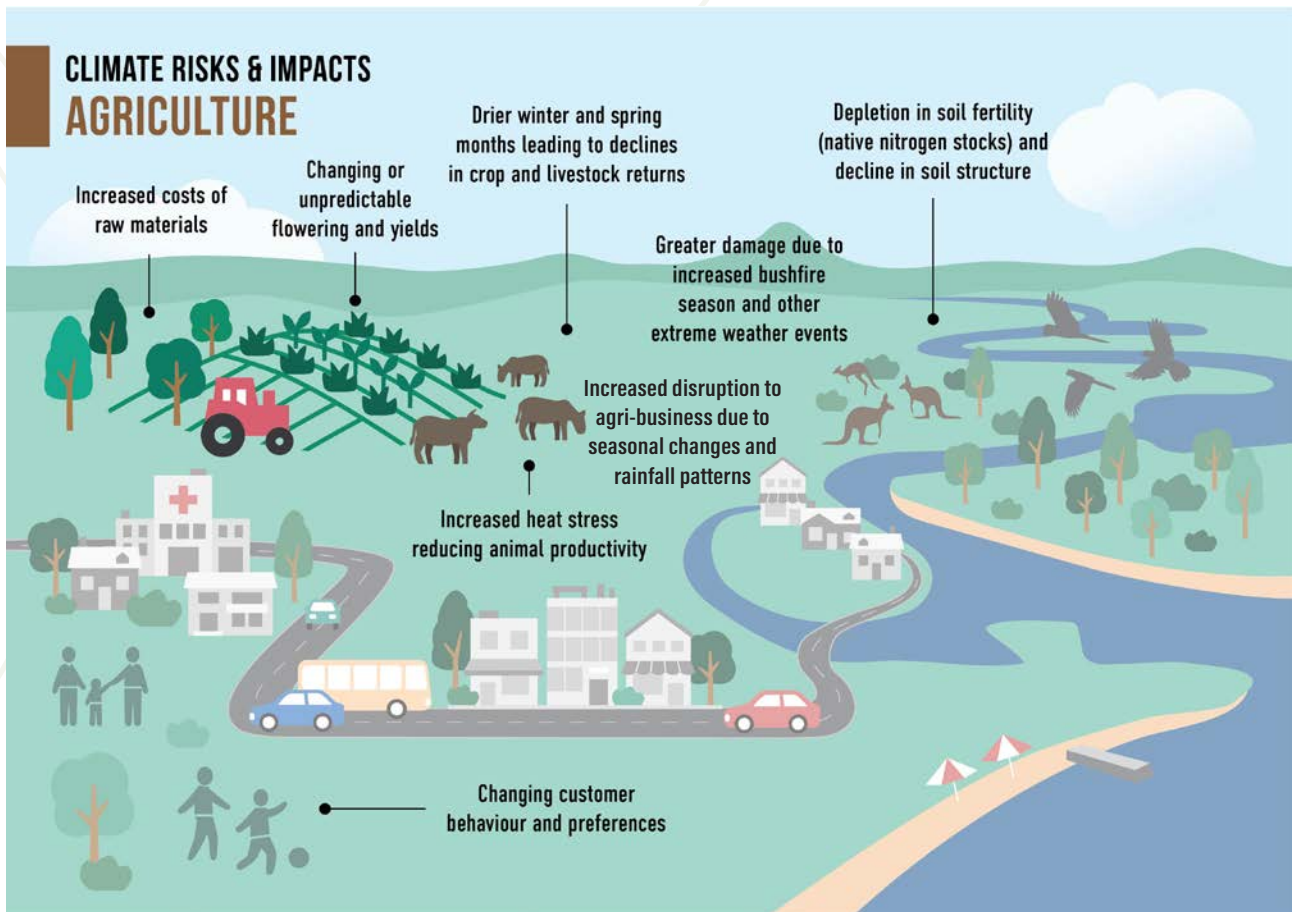


Figure 4: Climate risks for Noosa's agricultural sector

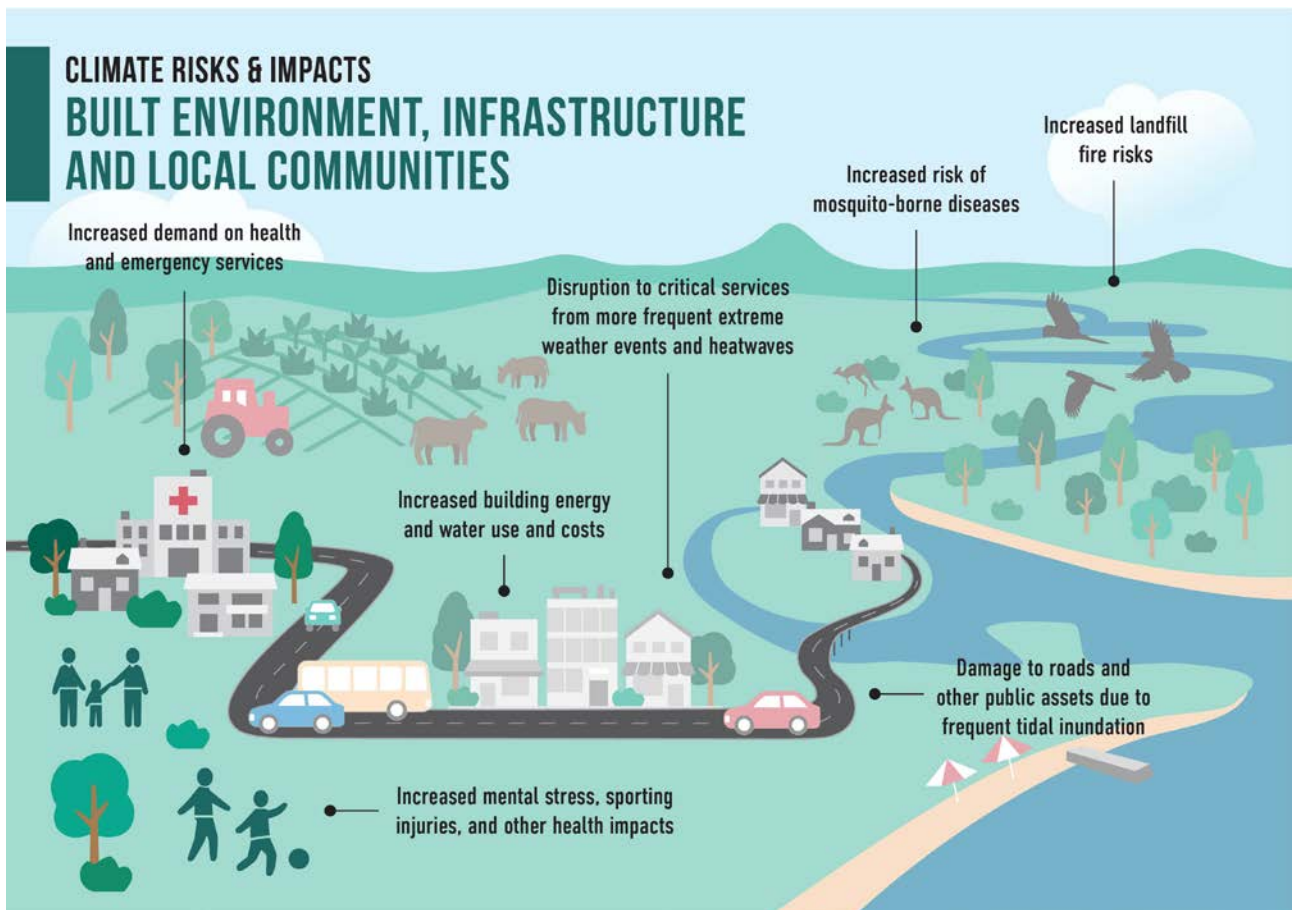


Figure 5: Climate risks for Noosa's built environment, infrastructure, and community



# Noosa's Carbon Emissions

## Noosa Shire community emissions

Community emissions have been estimated in accordance with the Global Protocol for Community-scale Greenhouse Gas Emission Inventories<sup>2</sup> (GPC). The GPC is designed to promote best practice greenhouse gas accounting and reporting. The breakdown of Noosa Shire emissions is shown in Figure 6 below.

Emissions from electricity consumption from the grid account for 58% of the total emissions, whilst transport emissions make up 33% and waste comprises 9% of total emissions.

Council will regularly update this profile, however it should be noted that the actual quantum of emissions may change as more accurate and granular data becomes available on a community wide basis. Updated community emission profiles will be available on Council's website.

## Noosa

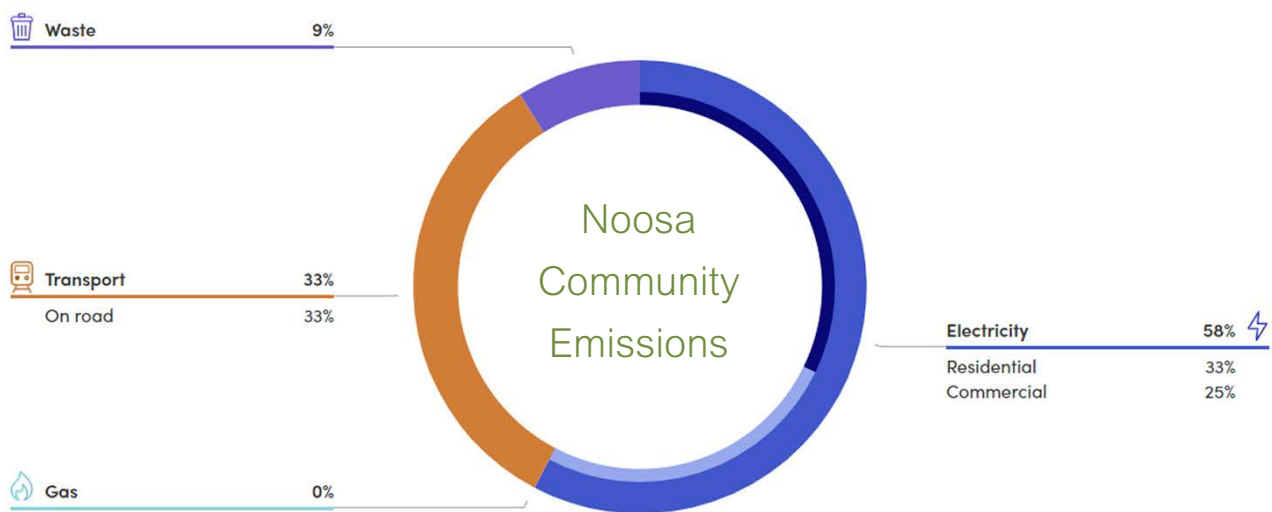


Figure 6: Breakdown of Noosa Community emissions profile

<sup>2</sup> <https://ghgprotocol.org/greenhouse-gas-protocol-accounting-reporting-standard-cities>

## Noosa Council emissions

Noosa Council calculates its own emissions from Council operations in accordance with the Climate Active Carbon Neutral Standard for Organisations<sup>3</sup>. These emissions are reported annually.

Council emissions are also included in the community emissions profile. As Council reduces its own emissions from its operations, it will be reflected in the community emissions profile.

Figure 7 shows Council's corporate emissions over time, since the baseline year of 2015/16. There has been an 11% reduction in Council's total emissions since 2015/16 despite further categories of emissions being added to Council's emissions profile as data has become available. Council has reduced its electricity consumption for its own buildings and facilities by 34% compared to the baseline year as a result of the installation of over 600kW of rooftop solar, energy efficiencies and staff behavioural change.

The most significant source of Council emissions (63%) is the landfill owned and operated by Noosa Council that receives and manages the Noosa community's residential and commercial waste. Council's waste management plan (in development) will deal with landfill emission reductions, as well as reducing overall waste.

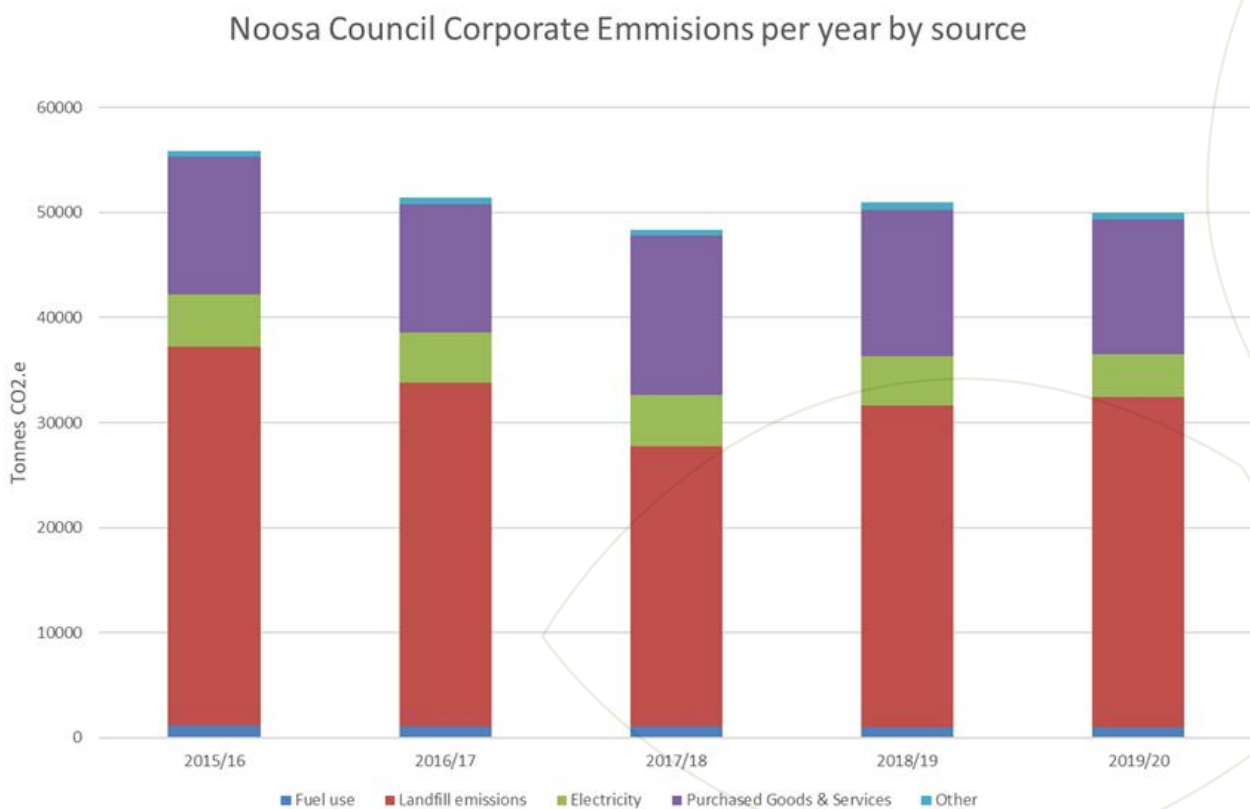


Figure 7: Noosa Council operation emission sources by year

<sup>3</sup> <https://www.industry.gov.au/data-and-publications/climate-active-carbon-neutral-standard-for-organisations>

## What does Net Zero Emissions mean?

The target of 'net zero emissions' by 2026 for Council and the community refers to achieving an overall balance between greenhouse gas emissions produced and greenhouse gas emissions taken out of the atmosphere.

Getting to net zero means we can still produce some emissions, provided they are offset by processes that reduce greenhouse gases already in the atmosphere. The more emissions we produce the more carbon dioxide we need to remove from the atmosphere to reach net zero. The process of removing carbon dioxide is called carbon sequestration or drawdown.

To meet the goal of net zero, new emissions must be avoided or as a minimum, maintained as low as possible. This means that we need to rapidly phase out the use of fossil fuels – coal, oil and gas – and transition to renewable energy.

## Why is net zero emissions important?

Reaching and sustaining net zero emissions is important in order to restore the Earth's energy balance and halt further global warming. The total amount of emissions released up until the point of reaching net zero will then determine the level of warming that will result for decades to come. The longer we wait, the harder it will be to reach, and the more warming that will result.

Climate change isn't a tap we can turn off once we stop using fossil fuels. Carbon dioxide, the main contributor to climate change, will stay in the atmosphere and keep heating the planet for years and years.

Hence, reducing greenhouse gas emissions is hugely important - but we can't stop there. The end goal is to balance the scales and restore the global climate to pre-climate change levels. To get there, we need to urgently reduce greenhouse gas emissions to zero and then get cracking on repairing past harm by drawing down past emissions.<sup>4</sup>

*"Unless we act decisively to phase out the use of fossil fuels, global temperatures will exceed a 2°C-rise above the pre-industrial levels in a few decades. By 2030 the average increase in global temperatures will reach 1.5°C, and the Earth's climate system is likely to begin to unravel. If we fail to act, dramatic destabilisation will be felt when the temperature rise breaches 2°C, sometime before 2050. Despair is not an option. Nor is selfish complacency. Instead, this is the moment to ask what you can do."*

*(Tim Flannery 'The Climate Cure: Solving the Climate Emergency in the Era of COVID-19)*

## Why net zero by 2026

Even if we limit global increases to 1.5°C, we can still expect rapid and far-reaching changes in our land and water resources, energy, industry, buildings and transport. A target of 'net zero emissions by 2026' for the Noosa community is commensurate with what these impacts mean, what the science is saying, and the urgency of the situation - irrespective of how difficult the target is to achieve.

Achieving net zero emissions is a shared responsibility. This plan outlines how Council is contributing to meeting this target with an increased focus on advocacy and mobilisation of the community. More broadly, social and economic transformation is required at all levels of government and industry.

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<sup>4</sup> Climate Council [https://www.climatecouncil.org.au/resources/what-does-net-zero-emissions-mean/?atb=DSA01b&gclid=Cj0KCCQiAgomBBhDXARIsAFNyUqPLFjZu4r3nfCOpoZxsMo858cG\\_faBYzQyuPI1ocqNNKX7QSgRrMQIaAjxCEALw\\_wcB](https://www.climatecouncil.org.au/resources/what-does-net-zero-emissions-mean/?atb=DSA01b&gclid=Cj0KCCQiAgomBBhDXARIsAFNyUqPLFjZu4r3nfCOpoZxsMo858cG_faBYzQyuPI1ocqNNKX7QSgRrMQIaAjxCEALw_wcB)

## Pathway to Zero Community Emissions

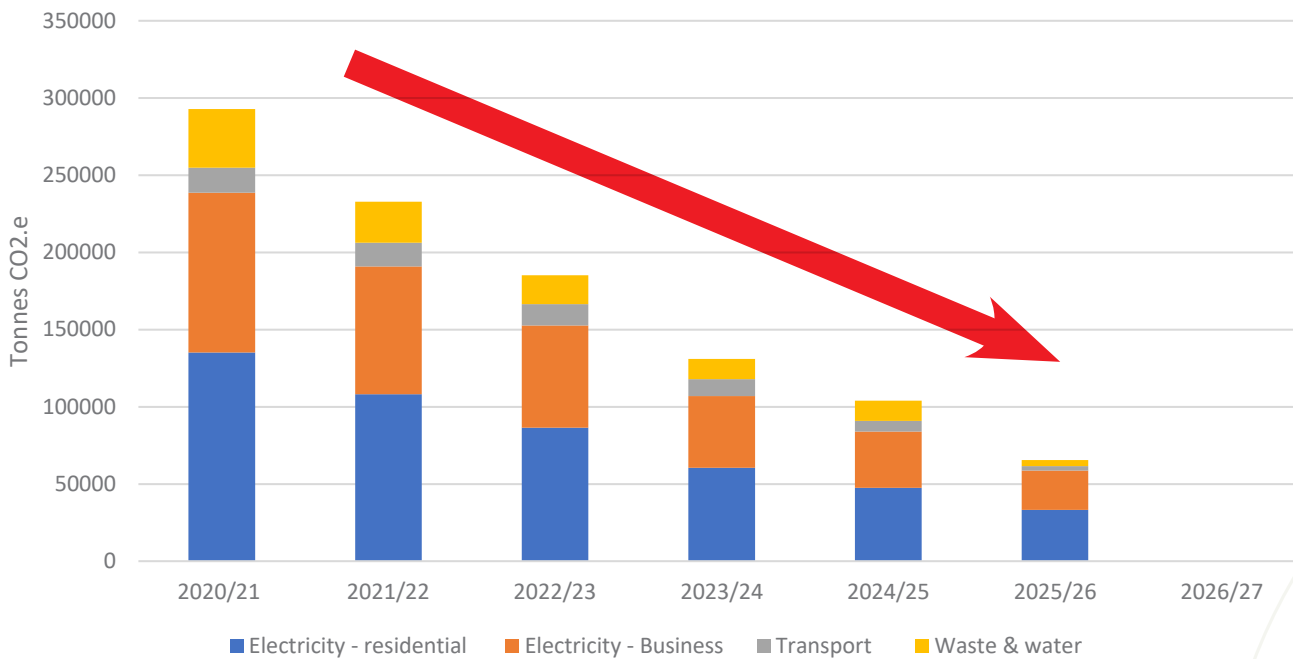


Figure 8: Community Emissions Indicative Reduction Pathway

This graph shows an indicative pathway to net zero emissions for the highest emission sources contributing to the Noosa Community carbon footprint. It should be noted that this data is from 3rd parties and may be subject to error. Council recognises that the Community emission profile is incomplete as the data is not yet available for the agriculture sector, nor the carbon drawdown potential of vegetation and landuse change. Council will update the emissions profile when this data is available, however it will not alter the main contributors to emissions herein.

Emissions sources	Opportunities	Barriers
Electricity	<ul style="list-style-type: none"> <li>The National Electricity Grid is de-carbonising and the cost of electricity from renewable energy supply is becoming cheaper.</li> <li>Council can have a role in assisting residents and businesses transition to renewable energy by:                             <ul style="list-style-type: none"> <li>Investigating renewable energy opportunities such as Power Purchase Agreements (PPAs), micro grids and virtual power plants</li> <li>Advocating to State and Federal governments to remove barriers and enhance incentives</li> <li>Providing assistance to the community to increase renewable energy and improve energy efficiency</li> </ul> </li> <li>Utilising expertise of community groups (eg. ZEN inc) to drive change.</li> </ul>	<ul style="list-style-type: none"> <li>Cost of emerging technologies</li> <li>Landlord take up of solar for tenants including low income households</li> <li>Electricity grid capacity to absorb the excess solar electricity being generated</li> </ul>
Transport	<ul style="list-style-type: none"> <li>The electrification of the private transport sector is inevitable.</li> <li>Council can encourage Noosa residents and businesses to switch to electric vehicles (EVs) through:                             <ul style="list-style-type: none"> <li>Provision of EV charging stations</li> <li>Lobbying State and Federal Government to remove structural barriers and create incentives</li> </ul> </li> <li>Council can also help encourage a modal shift to walking, cycling and public transport through a range of Transport Strategy initiatives</li> </ul>	<ul style="list-style-type: none"> <li>Range of models and perceived cost of EVs in Australia</li> <li>Consumer confidence in EVs</li> <li>Lack of gov. incentives for take up of EVs</li> <li>State gov run diesel bus fleet</li> </ul>
Waste	<ul style="list-style-type: none"> <li>Council controls the Noosa landfill and can continue to implement and upscale emission reduction initiatives by:                             <ul style="list-style-type: none"> <li>Continuing to improve landfill methane gas capture</li> <li>Investigating organic waste reduction and reuse opportunities</li> <li>Continuing community waste education programs</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Cost and resources required for different technologies (eg anaerobic digesters for organic waste)</li> </ul>



## Responding to the Climate Emergency



# Themes and strategic priorities

The following themes and strategic priorities have been identified to structure and direct climate risk actions and emissions reduction opportunities for the Noosa community and Noosa Council.



## Theme 1: Strong leadership and governance

- 1.1 Advocate to levels of government and mobilise the community to drive decisive climate emergency action
- 1.2 Strengthen partnerships with governments and stakeholders to take urgent action to achieve a low carbon economy and resilient community
- 1.3 Move council from business-as-usual operations to adopting deep, systemic change and being a powerful influencer and example of climate action.



## Theme 2: Energy efficiency and renewable energy

- 2.1 Transition Noosa Council and Noosa Shire to 100% renewable energy and ensure the transition is inclusive of low income and vulnerable residents and businesses, including strata tenants
- 2.2 Pursue energy efficiency and renewable energy measures within Council and for Council owned buildings
- 2.3 Develop a climate aware and empowered community for reducing climate risks and emissions



## Theme 3: Clean low emissions industries

- 3.1 Through targeted initiatives, create an environment that supports business development, innovation and investment shift to clean, green low emission industries and technology
- 3.2 Work with industry, business associations and government agencies to facilitate emissions reduction and environmental sustainability for local businesses



## Theme 4: Sustainable Transport

- 4.1 Accelerate public and active transport infrastructure investment and community usage through the implementation of Council's Transport Strategy and Walking and Cycling Plan.
- 4.2 Transition Council and the community to sustainable transport use and zero-emissions vehicles



## Theme 5: Healthy and resilient natural systems and carbon drawdown

- 5.1 Increase revegetation, ecosystems restoration and urban greening to increase carbon drawdown, reduce urban heating and support ecosystem and species resilience
- 5.2 Optimise use and management of water resources through integrated water cycle management including drinking water, recycled water, surface water and groundwater



## Theme 6: Sustainable agriculture and food systems

- 6.1 Support agri-businesses and landholders to create a sustainable and regenerative food system that includes consideration and preparation for climate change risks
- 6.2 Promote sustainable, locally produced food and improve local food access for farmers, residents, visitors and vulnerable people
- 6.3 Support agri-businesses and landholders to reduce their emissions through changes in farming practices and technology implementation, and to take up opportunities for income generation through carbon drawdown activities.



## Theme 7: Resilient and adaptive communities and built environments

- 7.1 Create a resilient built environment for householders, businesses, vulnerable people, property and infrastructure
- 7.2 Build Council and community awareness and preparedness for climate change and extreme weather events



## Theme 8: Zero waste and circular economy

- 8.1 Adopt circular economy principles to cut waste and pollution, keep products and materials in use and regenerate natural systems.
- 8.2 Manage the landfill in accordance with best practice to minimise greenhouse gas emissions
- 8.3 Minimise organic matter going to landfill from community waste

# Theme 1: Strong leadership and governance

## Why this is important

Responding to the climate emergency is a collective effort across all sectors of the community. Council has a unique role to lead by example for the community, other councils and levels of government. By showing powerful leadership and governance, Council can inspire and support others to integrate climate emergency responses into their daily activities and longer-term plans. This means moving from community engagement and education to mobilisation of the broader community, as well as stronger, political and strategic advocacy.

Council has engaged the community through education campaigns around solar power and energy efficiency and working with community groups such as Zero Emissions Noosa Inc (ZEN Inc). This is important and ongoing work. However, Council is broadening its reach and influence to drive collective action, not just individual action.

## How we'll achieve this

Through this Climate Change Response Plan, Council will assess local climate risks, help coordinate responses for the Council and local community, and monitor change and progress over time. Embedding consideration of climate change within all Council departments, including procurement processes, key policy documents and decisions, including the corporate plan and staff performance plans is an ongoing priority.

Council will continue to advocate for climate action and strengthen partnership opportunities. This includes advocacy with other local governments through Climate Emergency Australia to provide a collective voice for strong action on climate change. An advocacy and community mobilisation plan will be prepared to establish positions on a range of state and federal issues and to help support local community groups to develop their own climate advocacy programs for promoting positive climate action across the different sectors of the Sunshine Coast.

A climate change community reference group will be established to guide and provide advice on the implementation of the Climate Change Response Plan. As part of this, Council will continue to collaborate with local community groups and business associations through the existing Zero Emissions Noosa Memorandum of Understanding.

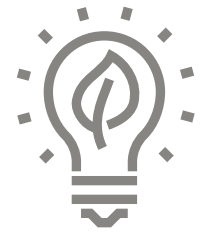
Strengthening regional partnerships and collaborating across neighbouring councils to identify and respond to common climate risks and to build a low carbon economy will also bring important regional benefits.

## Strategic Priorities

The following strategic priorities are identified for Strong Leadership and Governance:

- 1.1 Advocate to levels of government and mobilise the community to drive decisive climate emergency action
- 1.2 Strengthen partnerships with governments and stakeholders to take action to achieve a low carbon economy and resilient community
- 1.3 Move council from business-as-usual operations to adopting deep, systemic change and being a powerful influencer and example of climate action.

Specific actions for implementation through this Climate Change Response Plan are identified in the Summary of Actions.



## Targets

By 2026, 70% of survey respondents have a high understanding of climate change and what they can do to reduce their emissions and adapt to impacts

## Metrics

- Climate change advocacy actions and the effectiveness of this advocacy
- % survey respondents that understand the topic of climate change and what it means for Noosa Shire and themselves
- Number of events and promotion activities
- Number of projects involving Traditional Owners and incorporating First Nations knowledge
- Number of partnerships/collaborations with governments and other stakeholders for responding to climate change
- Number of corporate and operational policies that have incorporated a climate response
- Number of strategies and plans that have incorporated climate response objectives and actions
- Number of staff training and capacity building activities



## Partnerships

There are broad ranging areas that Council will extend its advocacy work through existing networks including Climate Council, Climate Emergency Australia, SEQ Council of Mayors, Tourism Noosa, Zero Emissions Noosa Inc, Food and Agri-business Network, Cleantech Sunshine Coast, Cities for Power Partnership, LGAQ Queensland Climate Resilient Councils, Planning Institute of Australia, Engineers Australia, Queensland Coastal Councils, and Youth Council, amongst others.



## Theme 2: Energy efficiency and renewable energy

### Why this is important

Stationary Energy comprises 58% of Noosa Shire's emissions profile. Emissions from stationary energy are predominantly from electricity generated from coal fired power stations and small amounts from natural and liquified petroleum gas (LPG). Reducing emissions from stationary energy includes improving energy efficiency, reducing energy demand and switching to renewable energy supply.

It has been estimated that \$77 million per year leaves the shire to pay for electricity generated elsewhere. The renewable energy revolution is underway and the costs of renewable energy continue to fall. Transitioning to renewable energy across the shire will significantly reduce emissions and costs to Council, households and businesses. This is also a significant opportunity for business development, economic growth and employment within Noosa.

Renters and low-income households are often locked out of the transition to renewable energy and options to reduce energy demand such as more energy efficient appliances. It is important that the programs to reduce electricity demand and the take up of renewable energy is inclusive of this sector. Improving the energy efficiency of homes has co-benefits of freeing up capital to be used on other essential expenses and makes homes more resilient to the impacts of climate change such as increased heat.

### How we'll achieve this

Council is responsible for its own buildings and facilities including those buildings that are leased to commercial or community tenants. Emissions from these buildings can be reduced by reducing demand, improving energy efficiency, and switching to renewable energy sources. To this end, Council will continue to invest in its own buildings and facilities to reduce emissions from stationary energy and encourage tenants to improve energy efficiency and take up of renewables through their leasing arrangements, grant opportunities and education.

Council will also support and assist the greater Noosa community to improve energy efficiency and make the switch to renewable energy through education; facilitating the uptake of renewable energy solutions via grants and expert advice; enabling access to energy solutions to vulnerable residents of our community; and showcasing the positive actions of those within the community that are reducing emissions from stationary energy.

Council will undertake further analyses of the options available to achieve 100% renewable energy for Noosa Shire.

## Strategic Priorities

The following strategic priorities are identified for Energy Efficiency and Renewable Energy:

- 2.1 Transition Noosa Council and Noosa Shire to 100% renewable energy and ensure the transition is inclusive of low income and vulnerable residents and businesses, including strata tenants
- 2.2 Pursue energy efficiency and renewable energy measures within Council and for Council owned buildings
- 2.3 Develop a climate aware and empowered community for reducing climate risks and emissions

Specific actions for implementation through this Climate Change Response Plan are identified in the Summary of Actions.



## Targets

By 2026, all Council facilities will be powered by 100% renewable energy/net zero emissions energy

By 2026 Noosa Shire is powered by 100% renewable energy/net zero emissions energy

By 2026, community awareness and empowerment to reduce emissions from stationary energy is increased.



## Metrics

- kW of renewable energy within the Noosa community
- kW of renewable energy generated for Council operations
- Number of Council facilities powered by 100% /net zero renewable energy
- Number of households completing energy audits
- Number of community alliance grants provided for climate change initiatives
- % of households powered by renewable energy
- % of businesses powered by renewable energy
- % reduction in community energy use



## Partnerships

Council engages with a number of community and business groups including ZEN Inc, Clean Tech Sunshine Coast and other industry networks. Council will continue to review opportunities to partner with other entities on a local and regional basis to make renewable energy available to the Noosa Shire.



## Theme 3: Clean low emissions industries

### Why this is important

Economic recovery post COVID-19 brings opportunities for industry and governments to invest in initiatives that create clean low emissions jobs and set communities up for the future - a recovery that supports the environmental industries sector<sup>1</sup> and tackles the challenges of climate change. The actions we take now must create an economic environment for innovation where new technology and industries form part of the climate change solution and help make communities more resilient and sustainable.

Noosa is in a unique and opportune position to leverage its clean green brand to attract and drive investment in clean low emissions industries and to showcase best practice sustainability and climate solutions. This means aligning economic activity and tourism promotion with the vision of making Noosa the preferred destination for clean, green business investment and clean tech industries.

This also includes supporting local businesses to be more sustainable through encouraging decarbonisation, energy efficiency upgrades, and waste minimisation.

### How we'll achieve this

Council will help create a strong, clean economy for Noosa by exploring opportunities and barriers to developing the environmental industries sector, through the development of Council's revised Economic Strategy (local economic plan). This will improve understanding of how best to grow environmental industries in Noosa that are high impact (create jobs and diversify the economy), leverage existing investment, are targeted for beneficial change, and are timely for rapid job creation and economic recovery.

Council will actively work with local businesses to encourage participation in programs that improve energy efficiency and sustainability, in partnership with Tourism Noosa, ZEN Inc and other community groups.

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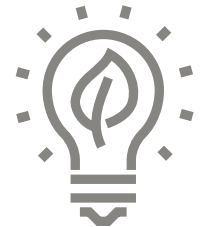
<sup>1</sup> Environmental industries consist of companies and organisations which carry out economic activities aimed at protecting the environment and managing natural resources, including waste management, wastewater treatment, limiting noise nuisance, correcting environmental damage, and production of cleaner technology products and services, such as production of renewable energy, electric transport and energy saving activities.

## Strategic Priorities

The following strategic priorities are identified for Clean Low Emissions Industries:

- 3.1 Through targeted initiatives, create an environment that supports business development, innovation and investment shift to clean, green low emission industries and technology
- 3.2 Work with industry, business associations and government agencies to facilitate emissions reduction and environmental sustainability for local businesses

Specific actions for implementation through this Climate Change Response Plan are identified in the Summary of Actions.



## Targets

By 2026, the number of businesses in the environmental industries sector has increased

By 2026, the energy efficiency and ecological sustainability of business in Noosa has increased



## Metrics

- No. of businesses in the environmental industries sector ((2021 baseline)
- No. of businesses participating in energy efficiency and sustainability programs



## Partnerships

Council partners with a number of industry and community groups to diversity and grow a strong and clean economy including Cleantech Sunshine Coast, Tourism Noosa, Food and Agri-business Network.

A collaborative approach to climate action and environmental industry development will help with sharing knowledge, making efficient use of resources, reducing duplication of effort/costs, scaling up successful local projects, and attracting partners and funding. Council will pursue and develop regional partnerships to drive low emissions industry investment for the broader Sunshine Coast region and beyond.





## Theme 4: Sustainable Transport

### Why this is important

Transport is the second largest source of emissions in Noosa Shire and is responsible for 33% of our community emissions. Moving towards sustainable transport will bring huge benefits for emissions reduction. This means reducing reliance on car travel in Noosa, switching to low/zero-emissions vehicles, increasing uptake of active transport like walking and cycling, improved pathway connectivity, adopting zero carbon public transport systems, and supporting working from home and home-based businesses.

These changes will provide broad-ranging benefits including more convenient ways for locals and visitors to travel, reduced congestion, improved health and wellbeing for individuals, and job creation opportunities. Sustainable transport will also contribute to Noosa's reputation as a sustainable, clean, green destination by reducing fossil fuel use and keeping up with changing technology.

### How we'll achieve this

Council is responsible for local roads and public parking and sets carparking design requirements for new developments. Public buses are run by the State Government Department of Transport through TransLink. A number of private bus companies provide customer specific transport services to and within the shire. Addressing the barriers to the take up of active transport and public transport due to high dependency on private vehicles and Noosa's dispersed settlement pattern is a key challenge. Climate change makes the task all the more urgent.

Through the Noosa Shire Transport Strategy and the Walking and Cycling Plan, Council is accelerating public and active transport investment and take-up by:

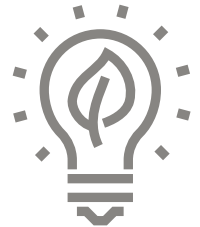
- Encouraging a modal shift away from private car use towards active transport modes and public transport through behaviour change programs and improved pathways and connections
- Addressing the transport emissions of over 2 million visitors to Noosa per year through consultation with relevant stakeholders to establish parking controls and public transport alternatives
- Increasing public transport use through improved services and increased bus services to the hinterland
- Partnering with government agencies and transport providers to explore and enable the replacement of diesel buses with electric/zero emission buses in Noosa
- Partnering with transport providers to explore and enable the uptake of electric bikes and personal mobility devices
- Increasing parking management controls in congested areas through timed and paid parking through timed and paid parking, with revenue to go towards sustainable transport
- Expanding the pathway network in urban and hinterland areas
- Rolling out electric vehicle charging stations at major Noosa destinations
- Amending the Noosa Plan 2020 to include requirements for new multi-residential and non-residential developments for carparking areas to be 'EV ready'.

Council's fleet emissions are less than 2% of total Council emissions. Transitioning Council's fleet to zero-emissions vehicles where fit-for purpose demonstrates leadership to the community but has an insignificant impact on Council's overall emissions. Also needed is ongoing behaviour change programs aimed at encouraging staff to walk, cycle, use public transport, scooter and carpool to work by promoting the multiple health and environmental benefits.

## Strategic Priorities

The following strategic priorities are identified for Sustainable Transport:

- 4.1 Accelerate public and active transport infrastructure investment and community usage through the implementation of Council's Transport Strategy and Walking and Cycling Plan.
- 4.2 Transition Council and the community to sustainable transport use and zero-emissions vehicles. Specific actions for implementation through this Climate Change Response Plan are identified in the Summary of Actions.



## Targets

By 2026, electric vehicle charging stations will be installed at all major Noosa destinations to support the transition to EVs

By 2026, public transport services in Noosa have improved and meets minimum standards from the Transport Operations Act.



## Metrics

- % modal shift to walking and cycling in key urban areas and in hinterland towns
- % increase of children walking and riding to school and using school buses
- % increase in electric micro-mobility devices/e-wheeling devices (e-bikes, e-scooter, e-skateboards etc.) in use by residents and visitors
- % increase in public transport use
- % increase in electric vehicle ownership
- kms of sealed cycling and walking pathways
- Number of staff that participate in walk/cycle-to-work day
- Number of EV charging stations in Noosa Shire for vehicles and e-bikes
- Electric vehicle infrastructure factored into development requirements eg. for multi residential and non-residential developments



## Partnerships

Accelerating sustainable transport requires strong advocacy and partnerships with government agencies and transport providers including Translink to future proof Noosa and connect communities. Council will continue to work with other community partners such as ZEN Inc, Tourism Noosa, Electric Vehicle Council and universities to help drive positive change and implement zero emissions transport solutions.



## Theme 5: Healthy and resilient natural systems and carbon sequestration

### Why this is important

Climate change will impact biodiversity, water resources and natural systems in many ways. Restoring ecosystems also present huge opportunities to remove greenhouse gases from the atmosphere, create jobs, support tourism, increase resilience of our native ecosystems, improve health and wellbeing through recreation and connection with nature, and improve heat-related impacts in our urban areas.

Changing temperature and rainfall trends and increasing risks of extreme weather events are creating significant impacts for Noosa's biodiversity and natural systems that will exacerbate existing threats. These changes are already being observed in the natural environment. Bushfires made worse by dry conditions across parts of Noosa Shire in the 2019/20 summer had devastating consequences for local ecosystems and highlighted the vulnerability of these natural assets.

Vegetation, soil and oceans are vital 'sinks' for absorbing greenhouse gases from the atmosphere and storing them long term. Establishing restoration plantings to offset corporate carbon emissions or to compensate for vegetated cleared elsewhere has broad ranging benefits for the environment and for businesses and community groups that may partner in the restoration efforts.

### How we'll achieve this

The Noosa Environment Strategy addresses many of the threats and impacts to biodiversity and natural systems arising from the Climate Emergency. A range of initiatives are underway to increase habitat, landscape connectivity, riparian buffers and ecosystem health.

Council will continue to build on this and improve vegetation and bushfire management practices to address climate risks, as well as take-up opportunities for maximising carbon drawdown through tree planting and 'blue carbon' restoration initiatives. This includes increasing revegetation and ecosystems restoration around waterways and along connecting habitat areas. Enhancing tree canopy cover in urban areas will be important for reducing urban heat stress, increasing carbon drawdown, and reducing energy needed to keep internal and external building spaces cool. A further initiative includes converting gardens to more drought tolerant native gardens to reduce plant loss, and irrigation needs, increase habitat and food for local wildlife. The development of a Coastal Foreshore Management Plan will provide for a dedicated program of foredune restoration and management in partnership with local bushcare groups. The Nature Conservancy (TNC) in partnership with Noosa Council continue to investigate opportunities for seagrass restoration in the Noosa River.

## Strategic Priorities

The following strategic priorities are identified for this theme:

- 5.1 Increase revegetation, ecosystems restoration and urban greening to increase carbon drawdown, reduce urban heating and support ecosystem and species resilience
- 5.2 Optimise use and management of water resources through integrated water cycle management including for drinking water, recycled water, surface water and groundwater

Specific actions for implementation through this Climate Change Response Plan are identified in the Summary of Actions.

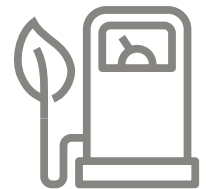


## Targets

Environment Strategy target: By 2030, half of all land in Noosa Shire is managed for its environmental values (% in 2020)

By 2030, 50% of mapped riparian buffers along waterways have vegetation coverage (42% in 2018)

By 2030, vegetation will be in place to increase canopy cover and shade to 45% of public open spaces in urban environments



## Metrics

- % urban canopy cover
- % change in estimated annual carbon drawdown by Noosa vegetation
- % of Noosa Shire managed for its environmental values
- % of mapped riparian buffers along waterways that have vegetation coverage (42% in 2018)
- No. Land for Wildlife properties and Voluntary Conservation Agreements
- Recycled water connections or uses in Noosa Shire



## Partnerships

Extensive community effort is directed towards protecting, maintaining, and restoring our natural environments. Many environment groups are actively involved in caring for Noosa's bushlands, wildlife, coasts and waterways, including hundreds of volunteers.

There are important benefits in greater collaboration between property owners, governments, community groups, businesses and infrastructure providers - working together to improve the resilient of natural areas in the face of warmer and drier conditions.



## Theme 6: Sustainable agriculture and food systems

### Why this is important

Local agricultural systems in Noosa are generally small-scale but diverse. Cattle grazing is the largest subsector in the shire and a variety of small to medium-scale horticultural crops are also spread across the region including macadamia nuts, coffee, and a mix of various fruit and vegetables. Short value chains for local food are growing with an increasing number of growers marketing direct to the public through farmers markets or providing produce to local restaurants. In 2018/19 the local agricultural industry added \$49.7 million to the local economy, or 2.2% of the total gross regional product (GRP) while employing 1.4% of Noosa's workforce (economy.id 2020).

Changing temperature and rainfall trends and increasing risks of extreme weather events are creating significant hazards for Queensland's agriculture sector that will escalate and exacerbate existing risks that farm businesses already face. This will impact on food security for Queensland and the nation.

Changing climate also brings opportunities. For example, vegetable growers producing summer crops may have the additional option of planting earlier, and later, therefore extending the production season. Runoff from higher intensity rainfall events may, with careful planning and adequate infrastructure, provide opportunities for growers to capture more water for irrigation.

As a community, we can reduce emissions and adapt to climate change by supporting sustainable regenerative agriculture in Noosa and by encouraging the availability and consumption of fresh locally produced food.

Changes in climate conditions require constant adapting to remain productive and viable. Early adoption of climate-smart agricultural practices will put enterprises in the best position to deal with climate risks and extreme weather. This includes increasing the organic matter in soils to increase the carbon taken up in the soils. This has added benefits of higher fertility levels, better water retention and prolonged resistance to drought.

There is also considerable cost savings to be gained by implementing on-farm emission reduction and there are benefits for income generation for farmers through carbon drawdown practices such as restoring soil health, planting native trees, and managing livestock.

### How we'll achieve this

The Noosa Environment Strategy addresses the challenges and environmental threats relating to agriculture in Noosa Shire, as well as opportunities for better managing agricultural areas to ensure adaptive and sustainable food production that increases agricultural productivity and protects the natural environment.

Council will investigate opportunities to encourage rural landholders to increase soil carbon drawdown through sustainable agricultural practices and tree planting. Council will also continue to support onground actions and education with landholders to improve their capacity to manage climate risks. Providing support for local food producers to help promote and connect supply chains to consumers is also a priority to help grow businesses and ensure fresh local food supply.

## Strategic priorities

The following strategic priorities are identified for this theme:

- 6.1 Support agri-businesses and landholders to create a sustainable and regenerative food system that includes consideration and preparation for climate change risks
- 6.2 Promote sustainable, locally produced food and improve local food access for farmers, residents, visitors and vulnerable people
- 6.3 Support agri-businesses and landholders to reduce their emissions through changes in farming practices and technology implementation, and to take up opportunities for income generation through carbon drawdown activities.

Specific actions for implementation through this Climate Change Response Plan are identified in the Summary of Actions.



## Targets

Environment Strategy target: By 2030, 80% of all grazing land achieves best practice management for agriculture

By 2026, the knowledge and capacity of local food and agribusinesses to prepare for climate risks and take up carbon reduction opportunities has increased



## Metrics

- Number of farmers participating in on-ground actions through land management programs
- Number of local producers promoted or accredited as being 'sustainable' or an equivalent.



## Partnerships

Council will continue to work with the Food and Agri-Business Network, Regenerative Agriculture Alliance, Country Noosa, Noosa Landcare and other organisations to improve support for agri-business and encourage take-up of sustainable agriculture.

Strengthening regional partnerships across councils will provide important benefits to the broader agricultural industry through increased collaboration and sharing of knowledge and resources.

The establishment and enhancement of industry networks will allow the continual advancement of knowledge and sharing of best practice to help move the sector towards a state of adaptability and sustainability.



## Theme 7: Resilient and adaptive communities and built environments

### Why this is important

Climate change will result in very real impacts on the physical environment, water resources, health and human services, the local economy and communities. Homes, businesses and community infrastructure will experience the effects of more extreme weather, bushfires, coastal hazards, flooding, and heatwaves. These hazards put increased pressure on emergency services and pose increased risks to people, including from increased vector borne diseases, mental health, blackouts and power shortages. These impacts are likely to be felt most by those already vulnerable such as the elderly and low-income earners.

We are already experiencing detrimental changes to our climate and built and natural environments. These effects will worsen over time.

Adapting to a changing climate involves adjusting to short duration events such as cyclones, floods and fires, as well as gradual changes such as sea level rise. Community resilience is the ability to not only cope with the impacts but to adapt and recover. Increasing the resilience of individuals, businesses and the community requires risk awareness, disaster preparedness, careful planning and management to help minimise risks and recover and adapt more easily.

Increasing the resilience and adaptive capacity of our communities and the built environment is about designing places, buildings and infrastructure to be more adaptive and sustainable, creating more comfortable and safe homes and workplaces, and reduced emissions and energy costs.

### How we'll achieve this

Council can support the community to increase resilience to climate change through building, infrastructure and landscape design that is responsive to the subtropical climate, and that is resource efficient for energy, water and materials, and minimises emissions. The Noosa Plan 2020 planning scheme (including planning scheme policy 5) sets standards for sustainable, subtropical design. These standards will be built upon to ensure that design outcomes increase the resilience and comfort of building occupants from climate risks, such as extreme heat. The development of climate responsive design guidelines will help provide support to the planning scheme, place making, asset management and infrastructure design. Localised assessments of climate risk, such as flooding, inundation and urban heat risk, will also help build understanding of appropriate design responses required for high-risk locations, including along foreshore areas subject to sea level rise and inundation risks.

Council is responsible for its own capital works program which includes new buildings. Buildings need to be designed and constructed to meet the 6 Star Green Building Standard and national standards for carbon neutral buildings.

Council seeks to build awareness and preparedness for extreme weather events through disaster management planning and response, development requirements, and resilient infrastructure design and delivery. Individuals and households are encouraged to develop and maintain up to date emergency action plans and Council collaborates with the State government as part of the Get Ready program. Providing resilient community infrastructure and safe refuge spaces for extreme weather events that are accessible to all community members is an ongoing priority. Involving health and family violence experts in emergency planning and response coordination and ensuring adequate access to health services including mental health and family violence services is also critical.

## Strategic Priorities

The following strategic priorities are identified for this theme:

- 7.1 Create a resilient built environment for householders, businesses and vulnerable people, property and infrastructure
- 7.2 Build Council and community awareness and preparedness for climate change and extreme weather events

Specific actions for implementation through this Climate Change Response Plan are identified in the Summary of Actions.

## Targets

Environment Strategy target: By 2030, sustainable building outcomes are delivered through regulation, education and showcasing best practice design.

Environment Strategy target: By 2030, community awareness, planning and preparedness for natural hazards and climate change is increased

By 2026, 60% of people in Noosa have a very good understanding of climate change





## Metrics

- % respondents that understand the topic of climate change and what it means for Noosa and themselves. (In 2019 almost four fifths of respondents (79%) either understood climate change reasonably well (41%) or had a very good understanding of climate change (38%).)
- % respondents aware of the level of risk posed by climate change and natural hazard events with respect to heatwaves, drought, flooding, beach erosion, stormtide, tropical diseases, extreme weather (2019 baseline available)
- % respondents that are prepared for the risks of climate change and natural hazards with respect to heatwaves, drought, flooding, beach erosion, stormtide, tropical diseases, extreme weather (2019 baseline available)
- % respondents that are prepared for a disaster or emergency and have an emergency plan. (In 2017 60% of respondents had a disaster management plan in place for a flood or fire, increasing to 66% in 2019).
- Climate change and heat risks factored into land use planning.
- Number of Council buildings that achieve a 5 Star or above under the Green Building Council of Australia rating scheme or equivalent.



## Partnerships

Council will continue to work with representatives of the Local Government Association of Queensland, other councils participating in the Queensland Climate Resilient Councils initiative, State agencies, and key infrastructure services delivery partners, such as Unity Water, SEQWater and electricity providers.



## Theme 8: Zero waste and circular economy

### Why this is important

Our current linear economic model of take-make-waste results in the excess use of resources, land and water pollution, and vast amount of waste going to landfill once products are no longer deemed necessary. In a circular economy, raw materials enter a cycle wherein their value is maintained throughout their life cycle.

Around 79000 tonnes of waste is taken to the Noosa Landfill each year. Of this 48% is reused or recycled, whilst the rest (41,000 tonnes) is buried in the landfill. Material that is dumped into landfill is a lost resource and a source of carbon emissions.

When organic matter (food, green waste, paper, etc) is sent to landfill, it is decomposed under anaerobic conditions. As the organic matter decomposes, it releases methane. Methane is 28 times more potent as a greenhouse gas than carbon dioxide. Emissions from landfill comprise over 60% of Council's corporate emissions and around 9% of the Noosa community emissions.

The degradation of organic waste in landfills is a complex series of chemical and biological reactions. Landfill gas is currently extracted from the Noosa Landfill, and flared, converting the methane into carbon dioxide. Methane from landfill gas can also be used to generate electricity. Landfill conditions, weather conditions, age of the waste and gas extraction equipment productivity will all affect the methanogenic bacterial action and hence the resultant landfill gas that is captured.

By moving from a take-make-waste system linear system to the circular economy, resources are used many times over, the nutrients from organic material are captured, land required for waste disposal is reduced, and the costs throughout the system overall are lower.

### How we'll achieve this

Council is responsible for the collection and processing of the community's waste. The landfill operations and the landfill gas system is managed by Council in partnership with its contractor. A waste management plan is being developed to determine the most effective management methods for the collection and processing of waste and the management of the landfill.

Council is also responsible for the generation of waste within its own operations and can increase demand for recycled products through its own procurement practices.

Council has a role in influencing how the community reduces its waste generation and the amount of waste ending up in landfill through the provision of appropriate infrastructure such as bins and collection services and through providing and supporting community waste reduction education and behaviour change initiatives with businesses and households. As part of this, Council supports and promotes programs such as Plastic Free Noosa.

## Strategic Priorities

The following strategic priorities are identified for this theme:

- 8.1 Adopt circular economy principles to cut waste and pollution, keep products and materials in use and regenerate natural systems
- 8.2 Manage the landfill in accordance with best practice to minimise greenhouse gas emissions
- 8.3 Minimise organic matter going to landfill from community waste

Specific actions for implementation through this Climate Change Response Plan are identified in the Summary of Actions.

## Target

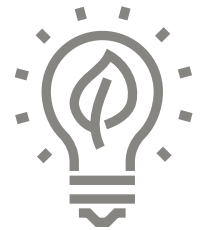
Environment Strategy target: By 2030, all green waste and food waste is diverted from landfill

## Metrics

- % green waste and food waste diverted from landfill
- Reduction in waste to landfill
- Landfill gas emission reductions

## Partnerships

Noosa Council partners with a number of community groups to educate the community on how to reduce waste. Noosa Council has a waste education program that is delivered to schools and the wider community.





LOCAL  
FRESH  
FRUIT  
& VEG

## Summary of Actions

The following identifies strategic priorities and specific actions including relevant metrics for measuring progress and timing for delivery.

Strategic Priorities What are our priorities over the 5 year life of this plan?	Specific actions How will we achieve our strategic priorities or encourage positive change?	Metrics How will we measure effectiveness or success of risk mitigation or emissions reduction efforts?	Timing (for commencement)
<b>Theme 1 – Strong leadership and governance</b>			
1.1 Advocate to levels of government and mobilise the community to drive decisive climate emergency action.	<ul style="list-style-type: none"> <li>Advocate to other local governments in Queensland and Australia for them to declare a climate emergency/take climate action and adopt net zero emissions targets and policies in line with climate science</li> <li>Advocate to the Federal and State government to increase support for renewable energy, transitioning to a low carbon economy, and addressing climate risk impacts from coastal hazards, flooding, drought, heat risk, bushfires and biodiversity loss.</li> <li>Advocate for legislative change to allow for Council to facilitate Environmental Upgrade Finance to enable eligible parties to access low risk finance for building upgrades.</li> <li>Advocate to State government and transport providers to:                             <ul style="list-style-type: none"> <li>improve and increase public transport services in Noosa Shire including for the hinterland, and to explore and enable the replacement of diesel buses with electric/zero emissions buses in Noosa; and</li> <li>Provide leadership direction and incentives regarding EV technologies and investment.</li> </ul> </li> <li>Develop an education, advocacy and community mobilisation plan to prepare advocacy positions on a wide ranging of state and federal issues and to educate and assist community groups, residents and others to become effective advocates.</li> <li>Develop an information tool kit to raise awareness and understanding of climate risks in the community, amongst industry sectors and within Council.</li> <li>Develop and promote an annual program of community- based climate education events for the broader Sunshine Coast region.</li> <li>Incorporate Indigenous knowledge systems, particularly for land management and ecosystem resilience, and involve and consider the needs of Traditional Owners.</li> </ul>	<ul style="list-style-type: none"> <li>Climate advocacy actions and the effectiveness of this advocacy</li> <li>Climate advocacy actions and the effectiveness of this advocacy</li> <li>Advocacy actions and effectiveness of this advocacy</li> <li>Advocacy actions and effectiveness of this advocacy</li> <li>Plan developed and progress made</li> <li>Information tool kit developed</li> <li>% survey respondents that understand the topic of climate change and what it means for Noosa Shire and themselves.</li> <li>Events and promotion activities</li> <li>Projects involving Traditional Owners and incorporating First Nations knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing</li> <li>Ongoing</li> <li>Ongoing</li> <li>Ongoing</li> <li>2022/23</li> <li>2021/22</li> <li>2021/22 - ongoing</li> <li>Ongoing</li> </ul>
1.2 Strengthen partnerships with governments and stakeholders to take urgent action to achieve a low carbon economy and resilient community	<ul style="list-style-type: none"> <li>Scope and develop a strategic approach to transitioning to LED street lighting and adopt turtle friendly lighting for coastal areas in partnership with infrastructure providers and state government agencies.</li> <li>Develop collaborations with other local governments to address climate risks and help build a low carbon economy. This includes developing a regional climate action roadmap for the broader Sunshine Coast region, as well as collaborative community education and carbon reduction initiatives across local government areas in SEQ.</li> <li>Pursue opportunities for private-public partnerships to develop scalable pilot projects in Noosa that demonstrate solutions for climate resilience and/or radical emissions reduction.</li> </ul>	<ul style="list-style-type: none"> <li>Approach established and next steps identified</li> <li>Collaborations with other local governments and progress made</li> <li>Collaborative private-public partnerships with others and progress made</li> </ul>	<ul style="list-style-type: none"> <li>2021/22</li> <li>2021/22 - ongoing</li> <li>2021/22 - ongoing</li> </ul>
1.3 Move Council from business-as-usual operations to adopting deep, systemic change and being a powerful influencer and example of climate action	<ul style="list-style-type: none"> <li>Continue to embed climate emergency responses across council and within key policy documents, procurement decisions, strategies and plans including in corporate and operational plans.</li> <li>Embed the climate change emergency into all staff roles and responsibilities and in performance planning.</li> <li>Update Council's climate governance road map based on findings of QLD Climate Resilient Councils (Q CRC) governance audit and Council's risk assessment, with annual updates provided to the Audit &amp; Risk Committee</li> <li>Establish a community reference group for climate change that periodically meets to provide information and advice to Council on climate issues, required actions, barriers and successes and ongoing program development.</li> <li>Continue to develop a web-based platform and dashboard to provide information on climate resilience and sustainability for households, businesses and farmers.</li> <li>Provide training and capacity building for council staff on embedding climate change within their roles, procedures and decisions.</li> </ul>	<ul style="list-style-type: none"> <li>Council and organisational policies that have incorporated a climate response</li> <li>Strategies and plans that have incorporated climate response objectives and actions</li> <li>Climate change included in performance planning</li> <li>Governance roadmap reviewed and up to date</li> <li>Community reference group established and progress made</li> <li>Website and dashboard developed and updated</li> <li>Number of staff training and capacity building activities</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing</li> <li>Ongoing</li> <li>2021/22</li> <li>2021/22 - Ongoing</li> <li>Ongoing</li> </ul>

Strategic Priorities What are our priorities over the 5 year life of this plan?	Specific actions How will we achieve our strategic priorities or encourage positive change?	Metrics How will we measure effectiveness or success of risk mitigation or emissions reduction efforts?	Timing (for commencement)
<b>Theme 2 - Energy efficiency and renewable energy</b> <b>Targets:</b> By 2026, all Council facilities will be powered by 100% renewable energy/net zero emissions energy By 2026 Noosa Council is powered by 100% renewable energy/net zero emissions energy By 2026 community awareness and empowerment to reduce emissions from stationary energy is increased			
<b>2.1</b> Transition Noosa Council and Noosa Shire to 100% renewable energy and ensure the transition is inclusive of low income and vulnerable residents and businesses, including strata tenants	<ul style="list-style-type: none"> <li>Renewable energy investigation (community focused) - Assess opportunities and financial models within and outside the shire for community owned renewable energy projects, such as solar farms, micro grids and solar gardens.</li> <li>Zero emissions pathways study (community focused) - to identify least cost emissions abatement opportunities for the Noosa Shire community and the role council plays in this.</li> </ul>	<ul style="list-style-type: none"> <li>Local renewable energy projects commenced</li> <li>Pathway to zero identified including next steps for implementation</li> </ul>	Ongoing  2021/22 - Ongoing
<b>2.2</b> Pursue energy efficiency and renewable energy measures within Council and for Council owned buildings  Review under-utilised Council buildings used for community purposes to help rationalise asset use and reduce emissions	<ul style="list-style-type: none"> <li>Noosa Council 100% renewable energy study to determine the most effective way for council to achieve 100% renewable energy for council facilities including leased facilities eg. power purchasing agreement (PPA), green power, etc.</li> <li>Continue to invest in energy efficiency and renewable energy measures within Council and for Council owned buildings and public lighting</li> <li>Trial the provision of energy audits for vulnerable households</li> </ul>	<ul style="list-style-type: none"> <li>Pathway to 100% identified including next steps for implementation</li> <li>kW of renewable energy generated for Council operations</li> <li>Number of Council facilities powered by 100% / net zero renewable energy</li> <li>Number of Council facilities powered by 100%/net zero renewable energy</li> <li>kW of renewable energy generated for Council operations</li> <li>Number of households completing energy audits</li> </ul>	2021/22     Ongoing  2022/23
<b>2.3</b> Develop a climate aware and empowered community for reducing climate risks and emissions	<ul style="list-style-type: none"> <li>Continue to partner with Australian Energy Foundation (AEF) and other services to enable residents and businesses to easily access expert advice on energy efficiency, solar and other products, including low income households/rentals.</li> <li>Continue to make available community alliance grants for community groups delivering emission reduction and adaptation benefits</li> <li>Trial an emissions reduction grant category to support households, businesses and community groups reduce emissions and increase energy efficiency.</li> <li>Promote new technologies and tools that build capacity and sustainable behaviour change.</li> </ul>	<ul style="list-style-type: none"> <li>% of households powered by renewable energy</li> <li>% of businesses powered by renewable energy</li> <li>% reduction in community energy use</li> <li>kW of renewable energy within the Noosa community</li> <li>Promotion activities completed</li> <li>Number of grants provided</li> <li>Number of emissions reduction grants provided and projects commenced</li> <li>Promotion activities completed</li> </ul>	Ongoing     Ongoing  2021/22  Ongoing

Strategic Priorities What are our priorities over the 5 year life of this plan?	Specific actions How will we achieve our strategic priorities or encourage positive change?	Metrics How will we measure effectiveness or success of risk mitigation or emissions reduction efforts?	Timing (for commencement)
<p><b>Theme 3 – Clean low emissions industries</b></p> <p><b>Target:</b></p> <p><b>By 2026, the number of businesses in the environmental industries sector has increased</b></p> <p><b>By 2026, the energy efficiency and ecological sustainability of business in Noosa has increased</b></p>			
<p><b>3.1</b> Through targeted initiatives, create an environment that supports business development, innovation and investment shift to clean, green low emission industries and technology (also linked to Themes 1, 2, 5, 6, 7)</p>	<p>Through the development and implementation of the Economic Strategy:</p> <ul style="list-style-type: none"> <li>• Explore opportunities and barriers to developing the environmental industries sector.</li> <li>• Pursue and develop regional partnerships to drive low emissions industry investment for the broader Sunshine Coast region and to support businesses and industries that are likely to come under pressure from the need to decarbonize.</li> <li>• Align economic activity and tourism promotion with the long-term vision for making Noosa the preferred destination for clean, green business investment, new clean tech business (eg, Firetech).</li> <li>• Work with Tourism Noosa to investigate programs to offset travel emissions for visitors to Noosa.</li> </ul>	<ul style="list-style-type: none"> <li>• No. of businesses in the environmental industries sector</li> </ul>	<p>Ongoing</p>
<p><b>3.2</b> Work with industry, business associations and government agencies to facilitate emissions reduction and environmental sustainability for local businesses also linked to Themes 1, 2, 5, 6, 7)</p>	<ul style="list-style-type: none"> <li>• Encourage business participation in emissions reduction, sustainability and climate resilience programs (eg. ecoBiz, EcoCheck) and actively promote businesses under the programs in partnership with Tourism Noosa and other networks.</li> <li>• Consider the use of clean/low emissions industries, contractors and goods/services through Council's purchasing activities and property and facilities management. Use suppliers located in Noosa Shire where possible.</li> </ul>	<ul style="list-style-type: none"> <li>• No. of businesses participating in emissions reduction and climate resilience programs</li> <li>• No. of businesses participating in energy efficiency and sustainability programs</li> </ul>	<p>Ongoing</p>

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<p><b>Theme 4 - Sustainable Transport</b></p> <p><b>Target:</b></p> <p><b>By 2026, electric vehicle charging stations will be installed at major Noosa destinations to support the transition to electric vehicles.</b></p> <p><b>By 2026, public transport services in Noosa have improved.</b></p>			
<p><b>4.1</b> Accelerate public and active transport infrastructure investment and community usage through the implementation of Council's Transport Strategy and Walking and Cycling Plan.</p> <p>(also linked to Themes 5 relating to urban greening)</p>	<p>Through implementation of the Transport Strategy and Walking and Cycling Plan:</p> <ul style="list-style-type: none"> <li>• Encourage a modal shift away from private car use towards active transport modes and public transport through behaviour change programs and improved pathways and connections</li> <li>• Increasing public transport use through improved services and increased bus services to the hinterland</li> <li>• Address the transport emissions of over 2 million visitors to Noosa per year through consultation with relevant stakeholders to establish parking controls and public transport alternatives</li> <li>• Partner with government agencies and transport providers to explore and enable the replacement of diesel buses with electric/zero emissions buses in Noosa</li> <li>• Partner with transport providers to explore and enable the uptake of electric bikes and personal mobility devices</li> <li>• Increase parking management controls in congested areas through timed and paid parking, with revenue to go towards sustainable transport</li> <li>• Expand the pathway network in urban and hinterland areas</li> <li>• Planting of shade trees along pathways to encourage walking and cycling</li> </ul>	<ul style="list-style-type: none"> <li>• % modal shift to walking and cycling in key urban areas and in hinterland towns</li> <li>• % increase of children walking and riding to school and using school buses</li> <li>• % increase in electric micro-mobility devices/ e-wheeling devices (e-bikes, e-scooter, e-skateboards etc.) in use by residents and visitors</li> <li>• % increase in public transport use</li> <li>• kms of sealed cycling and walking pathways</li> <li>• Number of staff that participate in walk/ cycle to work day</li> </ul> <p><i>For other priority actions - Refer to Walking and Cycling Plan (being developed)</i></p>	<p>Ongoing</p>
<p><b>4.2</b> Transition Council and the community to sustainable transport use and zero-emissions vehicles</p>	<ul style="list-style-type: none"> <li>• Commence a Council behaviour program that maximises efficient use of non-electric vehicles and offsets their emissions.</li> <li>• Consider cost benefit information when making decisions on purchase of council fleet to support transition to lowest emission vehicles.</li> <li>• Develop a roll out plan to incorporate electric vehicle charge stations at major Noosa destinations in partnership with EV providers and property owners</li> <li>• Install electric bike and electric scooter chargers at key destinations in Noosa Shire.</li> <li>• Amend the Noosa Plan 2020 to include requirements for new multi-residential and non-residential developments for carparking areas to be 'EV ready'.</li> </ul>	<ul style="list-style-type: none"> <li>• Behaviour program progressed</li> <li>• Policy developed and next steps identified</li> <li>• Roll out program developed</li> <li>• Number of EV charging stations in Noosa Shire for vehicles and e-bikes</li> <li>• % increase in electric vehicle ownership</li> <li>• Number of electric bike and scooter chargers in Noosa Shire</li> <li>• EVs factored into development requirements</li> </ul>	<p>2022/23</p> <p>2022/23 - Ongoing</p> <p>2021/22 - ongoing</p> <p>2022/23: 5 new chargers</p> <p>2021/22</p>



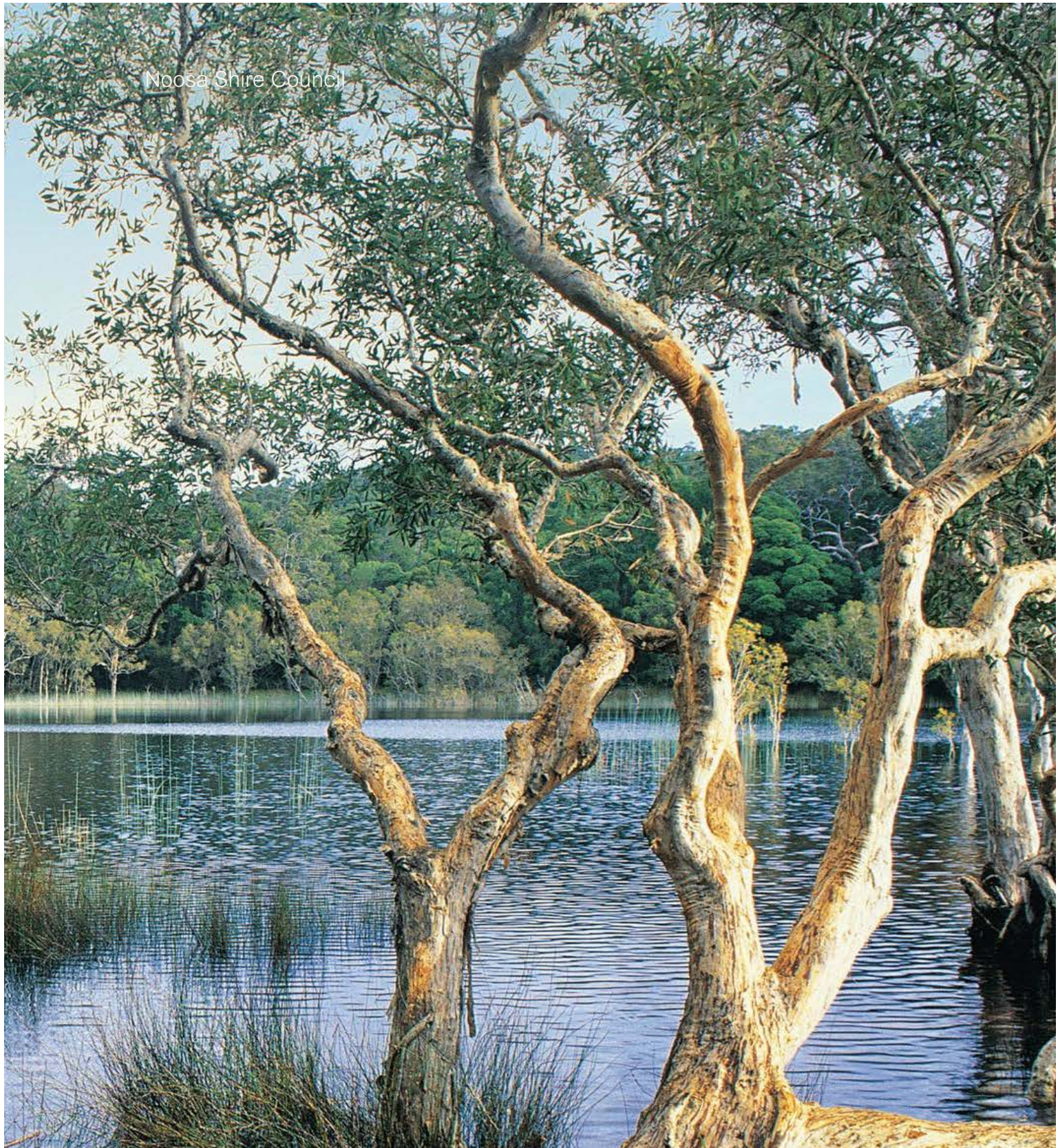
Strategic Priorities What are our priorities over the 5 year life of this plan?	Specific actions How will we achieve our strategic priorities or encourage positive change?	Metrics How will we measure effectiveness or success of risk mitigation or emissions reduction efforts?	Timing (for commencement)
<p><b>Theme 5 - Healthy and resilient natural systems and carbon sequestration</b></p> <p><b>Target:</b>                      By 2030, half of all land in Noosa Shire is managed for its environmental values                      By 2030, 50% of mapped riparian buffers along waterways have vegetation coverage                      By 2030, vegetation will be in place to increase canopy cover and shade to 45% of public open spaces in urban environments</p>			
<p><b>5.1</b> Increase revegetation, ecosystems restoration and urban greening to increase carbon drawdown, reduce urban heating and support ecosystem and species resilience</p>	<ul style="list-style-type: none"> <li>Develop an urban greening program for streets and public spaces that increases tree canopy cover, native vegetation and biodiversity, as well as to increase carbon drawdown and reduce urban heating. Investigate how implementation could be funded through an alternative revenue source. eg Trees for Tourism. Work with Indigenous people and young people to assist with onground planting to help build social capital.</li> <li>Prepare a Climate Change Ecosystem Vulnerability and Carbon Drawdown Assessment to help prioritise revegetation and restoration of high priority biodiversity, riparian and wetland areas vulnerable to climate threats and to assist with calculating carbon credits.</li> </ul>	<ul style="list-style-type: none"> <li>% urban canopy cover</li> <li>Change in estimated annual carbon drawdown by Noosa vegetation</li> </ul>	<p>2021/22 - ongoing</p> <p>2021/22</p>
	<ul style="list-style-type: none"> <li>Review the Noosa Plan Planning Scheme Policy No. 2 Landscaping to update the plant species schedule for Council's program of street tree replacement having regard to preferred species for shade, carbon drawdown and bushfire resilience.</li> </ul> <p>Through implementation of the Environment Strategy:</p> <ul style="list-style-type: none"> <li>Continue to increase habitat, landscape connectivity, riparian buffers, and ecosystem health and resilience through partnerships with levels of government, landholders and community groups (NPA, Biosphere, SCEC, NDLC)</li> <li>Expand and promote Trees for Tourism in partnership with Tourism Noosa, Landcare and Land for Wildlife properties</li> <li>Continue to monitor groundwater systems and groundwater dependent ecosystems and the impacts of climate change in partnership with University of Queensland</li> <li>Continue to improve coastal ecosystem resilience through the Coastal Connect bushcare project and related extension projects (linked to Coastal Hazards Adaptation Plan)</li> <li>Continue to implement the urban gardens for wildlife program to encourage planting of native plant species and enhance urban biodiversity, in partnership with NICA.</li> <li>Develop a Coastal Foreshore Management Plan for dune restoration and management in partnership with local bushcare groups.</li> </ul>	<ul style="list-style-type: none"> <li>Whether action is completed</li> <li>% of Noosa shire managed for its environmental values</li> <li>% of mapped riparian buffers along waterways that have vegetation coverage (42% in 2018)</li> <li>No. Land for Wildlife properties and Voluntary Conservation Agreements</li> </ul>	<p>Ongoing</p>
<p><b>5.2</b> Optimise use and management of water resources through integrated water cycle management including for drinking water, recycled water, surface water and groundwater</p>	<ul style="list-style-type: none"> <li>Continue to participate with Unity Water in the development and implementation of a total water management plan for the Shire's water use, supply and management.</li> <li>Increase connection and access to alternative water sources where suitable such as recycled water for irrigation eg. sports fields and agriculture.</li> <li>Strengthen requirements for water sensitive urban design for small scale developments through amendments to the Noosa Plan 2020 planning scheme.</li> </ul>	<ul style="list-style-type: none"> <li>Whether action is progressed</li> <li>Recycled water connections or uses in Noosa Shire</li> <li>Whether action is completed</li> </ul>	<p>Ongoing</p> <p>Ongoing</p> <p>2021/22</p>

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<p><b>Theme 6 - Sustainable agriculture and food systems</b></p> <p><b>Target:</b></p> <p><b>By 2030, 80% of all grazing land achieves best practice management for agriculture</b></p> <p><b>By 2026, the knowledge and capacity of local food and agribusinesses to prepare for climate risks and take up carbon reduction opportunities has increased</b></p>			
<p><b>6.1</b> Support agri-businesses and landholders to create a sustainable and regenerative food system that includes consideration and preparation for climate change risks</p>	<ul style="list-style-type: none"> <li>• Continue providing support to Landcare and MRCCC's rural extension programs to encourage sustainable agriculture and land management, and increase awareness of climate risks (eg. Keep it in Kin Kin program).</li> <li>• Promote platforms and programs for farmers to access climate projections, training, workshops, grants and guidance material for climate-ready farming.</li> <li>• Work with Food and Agri-Business Network, Regenerative Agriculture Alliance and Country Noosa, and other organisations to improve support for agri-business and encourage take up of sustainable agriculture</li> </ul>	<ul style="list-style-type: none"> <li>• Number of farmers participating in on-ground actions through land management programs</li> <li>• Whether action is completed</li> <li>• Whether action is completed</li> </ul>	<p>Ongoing</p> <p>2021/22 - ongoing</p> <p>Ongoing</p>
<p><b>6.2</b> Promote sustainable, locally produced food and improve local food access for farmers, residents, visitors and vulnerable people.</p>	<p>Through development and implementation of the Economic Strategy:</p> <ul style="list-style-type: none"> <li>• Support and promote farmers' markets, farm gates and local food box programs.</li> <li>• Support and promote businesses that use sustainable, regenerative food production methods including organic, biodynamic and agro-ecological principles.</li> <li>• Continue to work with Eat Local Noosa, Slow Food Noosa, Tourism Noosa (eg. food and drink festival) and other organisations to promote local producers and connect supply chains to local consumers.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of local producers promoted or accredited as being 'sustainable' or an equivalent.</li> </ul>	<p>Ongoing</p>
<p><b>6.3</b> Support agri-businesses and landholders to reduce their emissions through changes in farming practices and technology implementation, and to take up the opportunities for income generation through carbon drawdown activities.</p>	<ul style="list-style-type: none"> <li>• Investigate opportunities to encourage rural landowners to sequester soil carbon and accrue carbon credits through restoring soil health and sustainable agricultural practices. (eg. Landcare Soil Health Cards, Carbon Farmers of Australia)</li> </ul>	<ul style="list-style-type: none"> <li>• Whether action is completed</li> </ul>	<p>2022/23</p>

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<p><b>Theme 7 - Resilient and adaptive communities and built environments</b></p> <p><b>Target:</b>                      By 2030, sustainable building outcomes are delivered through regulation, education and showcasing best practice design.                      By 2030, community awareness, planning and preparedness for natural hazards and climate change is increased.                      By 2026, 60% of people in Noosa have a very good understanding of climate change</p>			
<p><b>7.1</b> Create a resilient built environment for householders, businesses, vulnerable people, property and infrastructure</p>	<ul style="list-style-type: none"> <li>Develop climate responsive design guidelines to support the planning scheme, place making, asset management and design to improve understanding of how infrastructure and urban design measures can be used to increase climate resilience within Noosa's public areas, streetscapes and buildings.</li> <li>Develop locality-based Heat Risk Assessment and mapping for urban areas to improve understand and help development responses to urban heat impacts in Noosa.</li> <li>Continue to update Noosa Plan 2020 planning scheme to manage the impacts of climate change on buildings and public spaces including heat mitigation requirements, as well as for flooding, inundation and bushfire risks.</li> <li>Advocate through LGAQ and the State for state policy and guidelines that provide a minimum standard for designing buildings to reduce emissions, improve sustainability and reduce urban heat risks.</li> <li>Prepare a Socio-economic impact hazard assessment of flooding and inundation including survey of building stock vulnerability (floor heights, building types and materials) to provide a business case for risk mitigation. This will also inform wind vulnerability assessment by Geoscience Australia. Linked to Coastal Hazards Adaptation Plan.</li> <li>Prepare localised modelling and concept design of inundation hazard reduction measures for Noosaville/Noosa Heads area (e.g. flood levy, landscape design, stormwater improvements). Linked to Coastal Hazards Adaptation Plan.</li> <li>Implement a monitoring program for coastal hazards for monitoring coastal erosion and inundation risks. Linked to Coastal Hazards Adaptation Plan. Linked to Coastal Hazards Adaptation Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Whether action is completed</li> <li>Whether action is completed</li> <li>Climate change and heat risks factored into land use planning</li> <li>Number of buildings that achieve a 5 star or above under the Green Building Council of Australia rating scheme.</li> <li>Whether action is completed</li> <li>Whether action is completed</li> <li>Whether action is completed</li> <li>Whether action is completed</li> </ul>	<p>2021/22</p> <p>2021/22</p> <p>2021/22-ongoing</p> <p>2022/23</p> <p>2022/23</p> <p>2021/22</p> <p>Ongoing</p>
<p><b>7.2</b> Build Council and community awareness and preparedness for climate change and extreme weather events</p>	<ul style="list-style-type: none"> <li>Provide best available hazard information and update design guidelines and capital works procedures for design, upgrade and maintenance of infrastructure works and building assets, e.g. new cyclone standards informed by the State's severe wind assessment.</li> <li>Work with industry partners to conduct disaster management and climate change preparedness workshops with various sectors (ie. businesses, households, aged care, farmers).</li> </ul>	<ul style="list-style-type: none"> <li>Whether action is completed</li> <li>% respondents aware of the level of risk posed by climate change and natural hazard events with respect to heatwaves, drought, flooding, beach erosion, stormtide, tropical diseases, extreme weather</li> <li>% respondents that understand the topic of climate change and what it means for Noosa and themselves.</li> <li>% respondents that are prepared for the risks of climate change and natural hazards with respect to heatwaves, drought, flooding, beach erosion, stormtide, tropical diseases, extreme weather</li> <li>% respondents that are prepared for a disaster or emergency and have an emergency plan.</li> </ul>	<p>Ongoing</p> <p>Ongoing</p>

Strategic Priorities What are our priorities over the 5 year life of this plan?	Specific actions How will we achieve our strategic priorities or encourage positive change?	Metrics How will we measure effectiveness or success of risk mitigation or emissions reduction efforts?	Timing (for commencement)
<b>Theme 8 - Zero waste and circular economy</b> <b>Target: By 2030, all green waste and food waste is diverted from landfill</b>			
<b>8.1</b> Adopt circular economy principles to cut waste and pollution, keep products and materials in use and regenerate natural systems.	Through development and implementation of the waste management plan: <ul style="list-style-type: none"> <li>• Ensure Council's waste management program adheres to circular economy principles for waste elimination, reuse and recycling and carbon reduction</li> <li>• Continue and expand the community waste education and behavioural change programs to build community awareness about emissions from waste and how to reduce them (eg methane emissions from food waste)</li> <li>• Explore opportunities for circular economy approaches through Council's purchasing activities, including the use of recycled material where feasible/appropriate</li> <li>• Investigate opportunities for local/regional processing of recycled materials</li> <li>• Investigate composting options for organic waste including end user opportunities, eg farms</li> <li>• Advocate to State and Federal governments for strict packaging and product stewardship standards and improved infrastructure/ business opportunities for waste reuse.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in waste to landfill</li> </ul>	Ongoing
<b>8.2</b> Manage the landfill in accordance with best practice to minimise greenhouse gas emissions	<ul style="list-style-type: none"> <li>• Continue to install landfill gas wells and improve the quality of the landfill cap to increase capture of landfill gas</li> <li>• Continue to explore power generation from landfill gas</li> </ul>	<ul style="list-style-type: none"> <li>• Landfill gas emission reductions</li> </ul>	Ongoing
<b>8.3</b> Minimise organic matter going to landfill from community waste	<ul style="list-style-type: none"> <li>• Implement recommendations from the new waste management plan to minimise organic matter going to landfill</li> </ul>	<ul style="list-style-type: none"> <li>• % green waste and food waste diverted from landfill</li> </ul>	Ongoing





## Implementation, Monitoring and Review

## Monitoring and evaluation

Monitoring and reporting on progress are critical to understanding the effectiveness of actions and to ensure delivery of the ambitions and strategic priorities in this plan.

The scale and urgency of the climate emergency means that the Council and the community need the evaluation of progress to be meaningful, transparent and timely.

A review of progress against the strategic priorities, actions, targets and metrics in this plan will occur every second year to allow Council and the community to assess plan implementation and the impact of action taken. Smaller interim annual reviews will also occur to help inform Council budget processes.

The monitoring and evaluation framework for this CCRP has been designed to help Council and other project partners to understand what is working and what is not. Our understanding of climate change is evolving in terms of what makes people, communities and environments vulnerable to climate impacts, and what to do about it. The monitoring and evaluation is about understanding change – what has changed, how has it changed and by how much. Understanding how climate actions are actually reducing vulnerability or reducing emissions or increasing capacity of people and organization is complex. The process therefore needs to be elastic and inclusive to provide for adaptability as things emerge and morph.



## Community reference forum

Noosa Council will establish a climate change community reference group to strengthen accountability, transparency, and cooperation. Representatives of the group will be able to discuss and provide advice on climate change issues, on-ground action, barriers and successes, monitoring and evaluation, and ongoing program development. This group will be an important component of plan implementation given that many of the actions in the CCRP require a partnership approach across a range of sectors. This includes working with community groups that form part of the existing Zero Emissions Memorandum of Understanding.

## Resources and funding

Potential funding sources will be actively pursued to enable ongoing implementation of the CCRP for both emissions reduction and climate resilience. This includes investigating opportunities for alternative revenue sources. This could include linking activities that occur locally and that derive revenue within the community with delivery of real on-ground actions, such as Trees for Tourism in the hinterland, other funding for urban greening projects, or funding for science-based programs that monitor long term environmental and climate risks.

Council has been awarded grant funding for climate risk and resilience through a number of programs in recent years amounting to around \$3 million in funding for Noosa Council and for cleantech business development. Some of these include:

Grants	Funding source	Funding to council	Year commenced
Climate Risk Management Strategy grant – to develop a climate action roadmap for the broader Sunshine Coast region	State government, administered through LGAQ	\$210,000 in collaboration with Sunshine Coast Regional Council	2021
Climate Resilience Alliances Pilot grant – to develop an alliance to accelerate the delivery of on-ground climate transition and adaptation actions	State government funding, administered through LGAQ	\$100,000 in collaboration with SEQ councils	2021
Regional Tourism Bushfire Recovery grant – Firetech conference for bushfire resilience through technology innovation	AusTrade – Federal Government Additional contribution from State government	\$100,000 \$50,000	2020/21
Firetech 2020 Program – incubator support, expert in residence	AusIndustry – Federal Government	\$100,000	2020
Queensland Bushfires Local Economic Recovery Program – funding for new fire tech laboratory including projects for environmental monitoring and data generation	Qld Reconstruction Authority (QRA) - State Government	\$1,894,503	2019
QCoast 2100 coastal hazard program - to develop a Coastal Hazard Adaptation Plan for coastal erosion, tidal inundation and sea level rise	State government, administered through LGAQ	\$490,000	2016



## DEFINITIONS

**Adaptation:** Regarding climate change, adaptation is the process of adjustment to actual or expected climate and its effects. It seeks to moderate or avoid harm or take advantage of beneficial opportunities.

**Carbon drawdown:** The removal of carbon from the atmosphere by capturing or storing it through biological, chemical and physical processes. Also referred to as carbon sequestration.

**Circular economy:** A closed system in which reuse, recycling and disposal channels are in-built to consumer and industrial products, to elimination.

**Climate:** Relates to the average weather over various timescales, including over a period of months up to millions of years.

**Climate Change:** is any change in the climate lasting for several decades, including changes in temperature, rainfall and wind patterns. It refers to the average weather conditions over a period of 30 years or longer. Climate change is different from weather. Weather refers to what you see and feel outside from day to day (e.g. sunny, rainy).

**Hazard:** the potential occurrence of a natural or human-induced event, trend or impact that may cause damage, including loss to property, infrastructure, livelihoods, service provision, and ecosystems.

**Intergovernmental Panel on Climate Change:** Established by the United Nations, the IPCC is the leading international body for the assessment of climate change, with representatives from 195 countries.

**Mitigation:** A human intervention to reduce the sources or enhance the sinks of greenhouse gases.

**Resilience:** The capacity of social, economic, and environmental systems to cope with a hazardous event, trend, or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.

**Risk:** is the potential for consequences where something of value is at stake and where the outcome is uncertain, recognising the diversity of values. Risk is often represented as probability of occurrence of hazardous events (likelihood) multiplied by the impacts (or consequences) should these events or trends occur.

**Water sensitive urban design:** A holistic approach to water management that integrates urban design and planning with social and physical sciences in order to deliver water services and protect aquatic environments in an urban setting

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