

SUSTAINABLE HOBART ACTION PLAN

Towards a zero emissions Hobart

2020-2025



ACKNOWLEDGEMENT OF COUNTRY



In recognition of the deep history and culture of our city, we acknowledge the determination and resilience of the palawa people of Tasmania, who have survived dispossession and continue to maintain their identity, culture and rights.

Tasmanian First Nation people have lived sustainably in this place for more than 40,000 years. Tasmanian First Nation people moved with the seasons, respecting resources and using fire to support hunting and fresh growth of vegetation, allowing them to replenish the land.

Tasmanian First Nation people applied the stories and lessons of their ancestors and planned for generations into the future. We acknowledge that we have much to learn from Traditional Custodians here in Hobart as we move into the future.

MESSAGE FROM THE LORD MAYOR



Hobart is on the front line of climate change – our city is already seeing impacts, our budgets are being thrown off course by extreme events and our residents are concerned about the future.

Climate change doesn't discriminate – just as we are all having to deal with the consequences, we all have a role in creating a zero emissions future.

There are great opportunities for cities to take climate action by adopting new policies, technologies and infrastructure that help to create change. We are joining with the cities around Australia and the world that are implementing innovative policies and practical programs to cut carbon emissions.

There are so many extra benefits for Hobart in having a sustainability action plan, such as lower energy and petrol costs, new job and business opportunities, less air pollution, a cleaner and greener city and a healthier population.

Our community have told us they are ready for ambitious climate action from all levels of government. This plan is Hobart's next step on the journey towards becoming a zero carbon city.

We look forward to the community joining us as we become a more sustainable Hobart.

Anna Reynolds

Lord Mayor

Sustainable Hobart Action Plan





**We are brave and caring.
We resist mediocrity and sameness.**
*From Hobart: A community vision for our
island capital*

EXECUTIVE SUMMARY

In the City of Hobart's 2018 document, *Hobart: A community vision for our island capital*, the people of Hobart said they wanted the Council to act to mitigate climate change and put adaptation strategies in place. The community spoke strongly in favour of valuing and enhancing biodiverse ecosystems and designing for energy efficiency. They also asked the Council to encourage the movement of people ahead of cars, and to be bold in investigating, trialling and implementing energy-efficient transport and technology alternatives for the community.

Our commitment is to adopt a mix of new ways of thinking and highly practical actions to make the community's vision a reality, in an ecologically and economically sustainable way. We will adapt to a changing climate but continue our mitigation path to a zero-emissions future, and act to protect and enhance biodiversity in and around our city.

Changes to our climate affect Hobart's economy and its built and natural environments. For two decades, the City has been building climate considerations into its decision-making processes and operations. We have measured and significantly reduced our energy consumption and greenhouse gas emissions, and used climate science predictions of rainfall, temperature, wind and sea level rise to set policy, identify barriers and create opportunities.

We will respond to the global issue of climate change in an intelligent, localised and community-focused way.

The actions we have developed are organised into six areas: Leadership, Mobility, Energy, Resilience, Waste and Governance.

As fire and flood are two of our biggest threats, many practical actions are directed at protecting Hobart against the kind of devastation seen recently in mainland Australia. Related initiatives seek to protect our wildlife by increasing habitat and developing the communications and education pathways to enable our communities to understand the local actions they can take for the greatest effect.

Many actions are developed to combine a sustainable and social goal. For instance, shopping online is convenient, but flying in individual goods incurs a carbon cost while taking business away from local retailers. So we suggest actions promoting models to develop sustainable digital commerce in Hobart, combined with low-carbon mobility options that deliver benefits to businesses and consumers.

Moreover, the Greater Hobart Act, Hobart City Deal and UTAS relocation create once-in-a-generation opportunities to develop whole-of-region sustainability actions in transport, energy and planning. These will benefit and protect the people of Hobart, their jobs, wellbeing and future, as well as the natural environment of our region and beyond.

With our community's help, we will deliver practical, targeted and local actions with real and ongoing sustainability and biodiversity outcomes for the people of Hobart and the natural environment.

TABLE OF CONTENTS

ACKNOWLEDGEMENT OF COUNTRY	2
MESSAGE FROM THE LORD MAYOR	3
EXECUTIVE SUMMARY	4
TARGETS	6
ABOUT THIS PLAN	8
WELCOME TO SUSTAINABLE HOBART	9
COMMUNITY ENGAGEMENT	10
FLOOD AND FIRE	11
RISKS AND HAZARDS	12
ACTION PLAN OVERVIEW	14
<i>Leadership</i>	16
<i>Mobility</i>	22
<i>Energy</i>	28
<i>Resilience</i>	32
<i>Waste</i>	38
<i>Governance</i>	42
GLOSSARY	48

TARGETS

Towards a zero-emissions Hobart



1. City of Hobart corporate greenhouse gas target (2030)

By 2030, the City of Hobart will reduce its 2020 corporate greenhouse gas emissions by 20%

2. Hobart community greenhouse gas target

The City will support the community to identify targets and actions by 2022 to reduce local greenhouse gas emissions

3. Renewable energy target (2040)

The City of Hobart will achieve 100% net renewable electricity by 2040

Setting targets

In our consultation with the community, we asked whether you wanted us to set targets for greenhouse gas emissions and renewable energy use for the City's operations, and for the community as a whole.

The response was resounding. Ninety per cent supported targets for the City and 89% supported community targets.

- We believe targets should be **real** and **achievable**.
- We also believe targets should be achieved by **local action**, not by purchasing offsets from corporations around the world.

Our goal is a zero-emissions Hobart. But we can't yet set this as an achievable target. For instance, McRobies Gully landfill is the source of 70% of our corporate emissions and will give off greenhouse gas emissions for decades to come. We have already trapped what we can of these emissions to turn them into energy and less harmful gases.



What we can do is steadily replace our fleet with EV or H2 vehicles as the technology becomes available. We can also set ambitious targets to keep reducing emissions, as we have over the past two decades, and adjust our electricity mix to economically source all of our electricity from renewable energy.

We can achieve 100% net renewable electricity, and gain full economic payback on the investment. We have already saved \$1 M from our annual energy bill thanks to our energy action programs over the past decade.

We will also make significant reductions to overall corporate emissions (electricity, gas, petrol etc.) as we upgrade fleets and buildings and develop better public transport and micromobility options.



Between 2010 and 2020 the City reduced its greenhouse gas output by 17%. We will achieve a further 20% reduction over the next decade through reduced waste to landfill, electrifying the City's vehicle fleet, energy efficiency in our buildings and lighting, better control of electricity and other savings.

The Hobart community's greenhouse gas emissions come from industry (42%), transport (28%), commercial activity (14%), residential housing (10%) and agriculture/forestry (6%). The City's ability to directly affect these emissions is limited, but we can enable change through our leadership role in supporting electric vehicles, public transport, domestic energy efficiency and education, as well as working with the community to set an emissions reduction target before the end of 2022.

The Tasmanian Government has committed Tasmania to a net 200% renewable target by 2040. As the state's capital city, the City of Hobart will meet the challenge to source reliable, net 100% renewable electricity for its operations. Changes to other energy use over the same period will help push us beyond this target, towards zero corporate emissions.





ABOUT THIS PLAN

The focus areas and all individual actions are guided by the 'pillars' of *Hobart: A community vision for our island capital* and the *Capital City Strategic Plan 2019–29*, which together guide the City of Hobart's work.

- **Pillar 1:** Sense of place
- **Pillar 2:** Community inclusion, participation and belonging
- **Pillar 3:** Creativity and culture
- **Pillar 4:** City economies
- **Pillar 5:** Movement and connectivity
- **Pillar 6:** Natural environment
- **Pillar 7:** Built environment
- **Pillar 8:** Governance and civic involvement

These eight pillars were chosen as part of a large body of strategic work, by a representative community panel.

We are deeply grateful to the members of the Hobart community who gave so much of their time to take part in debating, writing and creating a strategic vision for Hobart.

This Action Plan complements the City's other key strategies and plans, which together seek to deliver sustainable and smart outcomes.

'The Paris Agreement recognises the important role of sub-national governments in addressing climate change. It is fantastic to see the City of Hobart have such a comprehensive plan for action that complements the work of the Tasmanian Government.'

Sophie Muller

Director

Tasmanian Climate Change Office

This plan contains over 40 individual actions in six areas:

1. **Leadership:** Initiatives involving the City influencing, educating or collaborating with other governments and stakeholders
2. **Mobility:** Initiatives to move around the city in more sustainable ways
3. **Energy:** Initiatives to reduce greenhouse gas emissions and use renewables more effectively and at lower cost
4. **Resilience:** Initiatives that make Hobart better prepared for the changes climate change is bringing
5. **Waste:** Initiatives to make better and more efficient use of resources and prevent them becoming pollutants at end of life
6. **Governance:** Initiatives that use the City of Hobart's legislative frameworks to effect change.

This Action Plan responds to the City's key strategies and action plans, which together seek to deliver climate-safe and smart outcomes for Hobart. These include:

- Capital City Strategic Plan 2019–29
- Hobart: A community vision for our island capital (2018)
- Energy and Greenhouse Action Plan 2018–20
- Hobart Corporate Climate Adaptation Plan 2013–16
- Waste Management Strategy 2030
- Biodiversity Action Plan 2019
- Strategic Fire Management Plan (draft)
- Municipal Emergency Management Plan
- Stormwater Strategy 2020–25 (draft)
- Social Inclusion Strategy 2014–19
- Transport Strategy (draft) 2019–30
- Connected Hobart (2019)

WELCOME TO SUSTAINABLE HOBART

WHAT IS SUSTAINABILITY?

We define sustainability as the quality of progressing in a way that minimises or removes the requirement for the consistent increased application of new resources. A sustainable Hobart is a city that can produce a portion of its own power, manage its waste without creating landfill, power its own vehicles and light its streets without wasting energy lighting the sky. Sustainable economies are those that spend resources wisely, achieving multiple outcomes with each investment and investing in things that earn dividends rather than accumulate future debts.

This plan takes steps towards making Hobart more environmentally, socially and economically sustainable. Fossil fuel transport, powered by imported fuels, can be replaced with locally-sourced energy. Costly lighting of the night sky is planned to be curtailed, saving money, helping biodiversity, increasing safety and bringing back our view of the stars. Sustainable Hobart supports local business over those that fly products in on demand and provides residents with regulatory planning guidance, knowledge and support networks, advice about how best save money and energy heating homes of various types and pathways to become involved in creating a world-leading sustainable city.

KEY SUPPORTING DOCUMENTS

This *Sustainable Hobart Action Plan* is preceded by two major bodies of work, which inform the science and data behind the program.

- The City's Greenhouse Gas Emissions and Energy Use Annual Report
- City of Hobart Responding to Climate Change Background Paper

The latest version of both of these documents is available on the City's website at cityofhobart.com.au

Several high-level and strategic projects with important links to climate change have also been conducted while this Action Plan was being developed. They include:

- Hobart: A community vision for our island capital
- Capital City Strategic Plan 2019–29
- Connected Hobart Framework and Action Plan

STRATEGIC GOALS

The actions in this plan are designed to move the City towards meeting the strategic goals of the Sustainable Hobart Program:

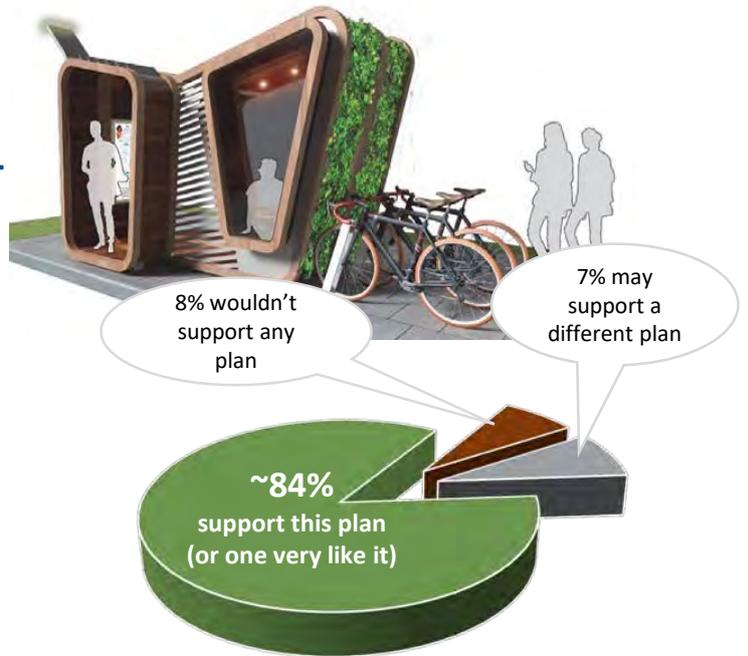
1. To sustainably meet the rapid changes in Hobart's demographics and population
2. To create a path to a zero-emissions future for the City and community
3. To deliver on the community's vision for Hobart, described in the document *Hobart: A community vision for our island capital* (2018)
4. To prepare our city to withstand storm, sea level rise, flood, bushfire and other natural hazards
5. To challenge the people of Hobart with exciting, smart, innovative and affordable solutions to energy management, transport and other areas
6. To collaborate with all areas of the City and external stakeholders to drive efficiency in our processes, development and actions
7. To provide leadership and collaboration at local, regional, national and international levels
8. To deliver better and more efficient services and programs for the people of Hobart

COMMUNITY ENGAGEMENT

Over 2000 people visited the City's YourSay page during our community engagement process:

- 820 people downloaded the Action Plan.
- 227 people downloaded the fact sheets.
- 126 people filled in the survey.
- 7 organisations responded with written submissions.

We also received significant media coverage, engaged the public through Facebook, published videos online and in the Hobart Council Centre, held public forums, hosted a webinar and invited the business community to discuss how we could help them to make their businesses more sustainable.



BUSINESS ENGAGEMENT

Hobart's business community was invited to an engagement session to discuss the Action Plan and how the City could help local businesses achieve sustainability goals. This valuable discussion with a broad range of highly engaged business owners covered economic and environmental sustainability, Council regulations, local procurement and manufacturing, and the value of a Sustainable Hobart brand.

The City presented the Action Plan and discussed various grant schemes available, as well as the potential to report against globally recognised sustainability programs such as the United Nations Sustainable Development Goals (UNSDG).

The idea was raised of bringing night-time retail lighting into the City's dark skies initiatives while being careful to watch the effects of spectrum changes in night lighting on both animal migration and human psychology. UTAS spoke of its 10-year sustainability plan—which focuses on both the financial and human side of sustainability—and the parallels between the City's plans and the University's.

Some businesses explained that environmental sustainability was not a major concern a decade ago, but has become central to businesses and their customers. Retailer experience shows customers are willing to pay a little more for products that have demonstrable sustainability credentials.

A local business that bulk-buys second-hand electric cars was heartened by the City's installation of EV fast-charging technology (which is both economically and environmentally sustainable for the City). Others raised the City's potential role in influencing the re-use of building materials and old buildings. Carbon Neutral Adelaide presented on their business/council partnerships, which provided an interesting potential model for Hobart's transition to a zero-carbon city. And finally, FabCity, a worldwide program supporting local manufacturing, was suggested as a low-carbon option for Hobart's future.

YOUR INPUT

In response to survey results, business community engagement and submissions, we have amended some parts of the Action Plan.

The draft plan had no corporate or community greenhouse gas/renewable energy targets. These have been added, and some of the actions have been amended to respond to suggestions and better suit achieving our targets. More emphasis has been given to engagement with state government agencies and stakeholders, and targets have been aligned with the new Tasmanian Government target of a 200% renewable Tasmania by 2040. 'Energy' actions still focus on reduced dependence on fossil fuels but now align more clearly with industry and university partners.

Sustainable Hobart has included three rounds of community and stakeholder engagement involving a range of activities, including:

- written public submissions sought on two background papers: 'Responding to Climate Change' and 'Managing Greenhouse Gas Emissions'
- direct input through surveys and workshops
- engagement with local schools
- discussions and workshops with City of Hobart elected members and employees
- final public consultation.

Throughout our engagement process we received feedback that the City of Hobart has excelled in:

- climate governance and planning
- waste management
- energy management.

FLOOD AND FIRE

Many of the actions in this plan are connected with two of the greatest threats to Hobart: bushfire and flood. The 2020 bushfire season in mainland Australia has alerted most Australians and many around the world to the drastic consequences of global climate change. In 2018 Hobart also experienced major flooding from a significant rainfall event, and mainland Australia faced disastrous flooding immediately after the fires, due to a rainfall event with vastly depleted vegetation cover.

Hobart is a bushland city at the base of kunanyi/Mt Wellington. Depending on how we act, the mountain can be a moderator or a significant multiplier of both fire and flood risks to the city.

Our regional microclimate is strongly influenced by the mountain, which collects higher rainfall than the city itself. **Fire and flood risks are moderated if this moisture stays on the mountain.**

- Absorption of rainfall is aided by mountain geology (porosity) and vegetation cover.
- The vegetation of the mountain also helps condense atmospheric moisture, thereby increasing effective precipitation in times of low actual rainfall.

Water stored in vegetation and soil on the mountain moderates the local microclimate, cools surface temperatures through shading, acts to halt and store runoff, and maintains small water cycles which, in turn, promote more rainfall.

Extreme rainfall events together with higher winds and warmer temperatures will dry out this landscape system, leading to even warmer weather, vegetation changes and lower absorptive capacity of the mountain.

Acting together these will create a vicious cycle of further drying, warming and bushfire risk. If bushfire removes vegetation from the mountain, rainfall absorption drops, flooding is exacerbated and local temperatures can increase in subsequent years.

We are far from powerless against the massive forces of flood and fire.

The Sustainable Hobart team works with others in Council, like the City's Bushland team, which focuses on the safety, accessibility, biodiversity and protection of our bushland assets.

Education and information are crucial actions:

- Prioritising the efforts of volunteers and groups
- Changing public perceptions, for instance of the need to 'tidy up' for aesthetics and amenity, which can lead to unnecessary slashing, removing habitat, plant cover and shading, and exposing the ground layer to drying and heating.

As we maintain and build trails in bushland, we can increase the capture of runoff from kunanyi/Mt Wellington and its absorption back into the soil though appropriate structures in built assets such as retention ponds, leaky weirs, absorption swales and ponds on fire trails and roads.

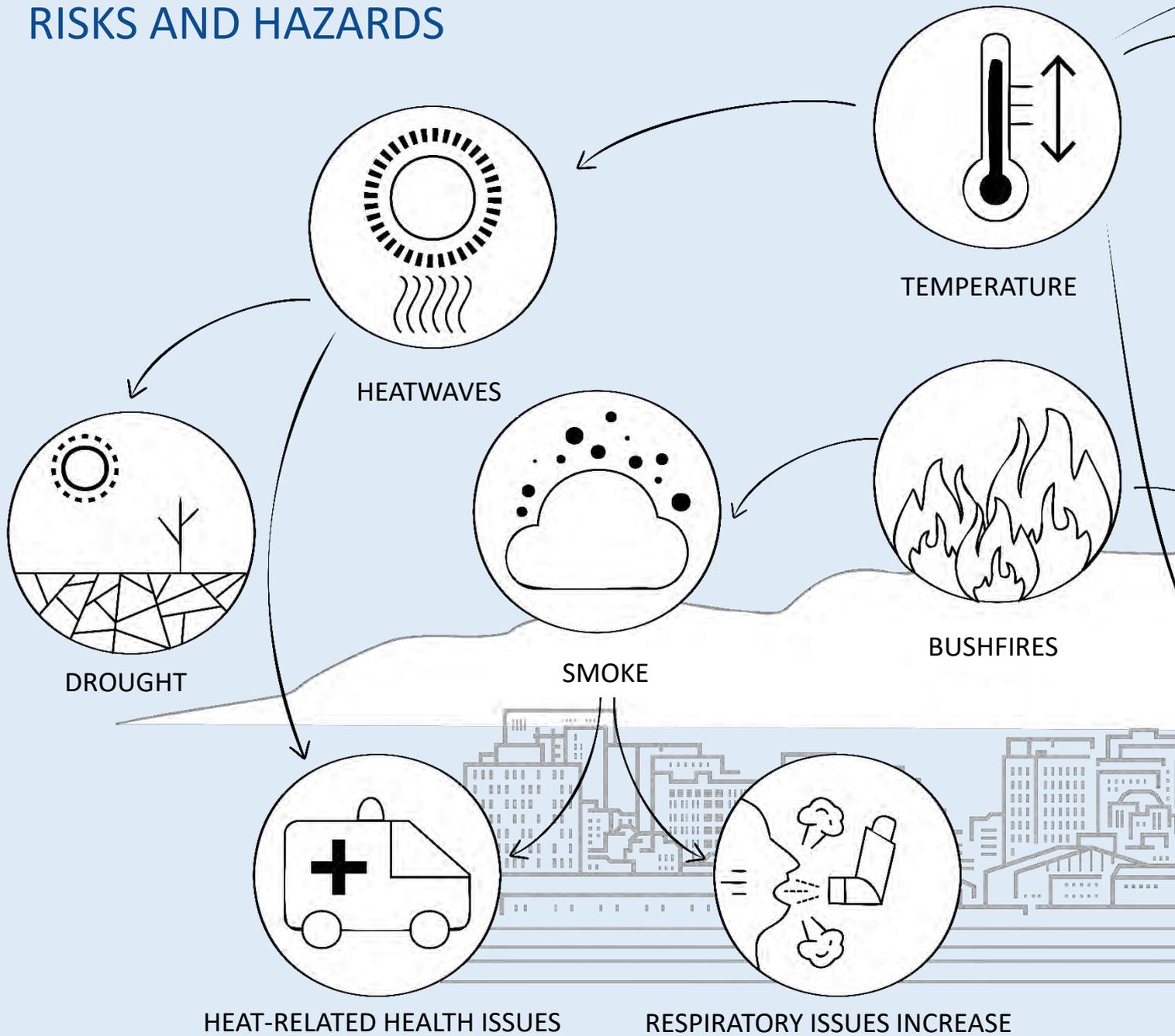
Urban parks, green spaces and private gardens all play a role, through simple measures like shading, providing paths for floodwater, and incorporating humus from green waste. Appropriate vegetation anywhere in the city not only moderates fire and flood risk but can create islands of habitat to encourage native birds and wildlife to jump between existing habitat islands and repopulate areas or increase species diversity.

We reduce runoff with appropriate vegetation cover, which also reduces the heat island effect of Hobart City and suburbs. 'Green firebreaks' can reduce evaporation, runoff and erosion along firebreaks.

We can encourage the capture of water from rainfall in built storage structures (tanks, ponds etc.) and its incorporation back into local soils or use for fighting bushfires. Capture and storage for local and private use during bushfires will also reduce pressure on public supplies at critical times.

We continually increase our levels of cooperation with surrounding councils and other groups to promote regional solutions to protect local biodiversity and moderate the fire and flood threat we all face.

A CYCLE OF INCREASING RISKS AND HAZARDS



SUMMER 2013

SUMMER 2015-16

JUNE 2016

SUMMER 2016

Dunalley Fires:
93 buildings and
homes lost

**\$69 M
COST TO
TASMANIA**

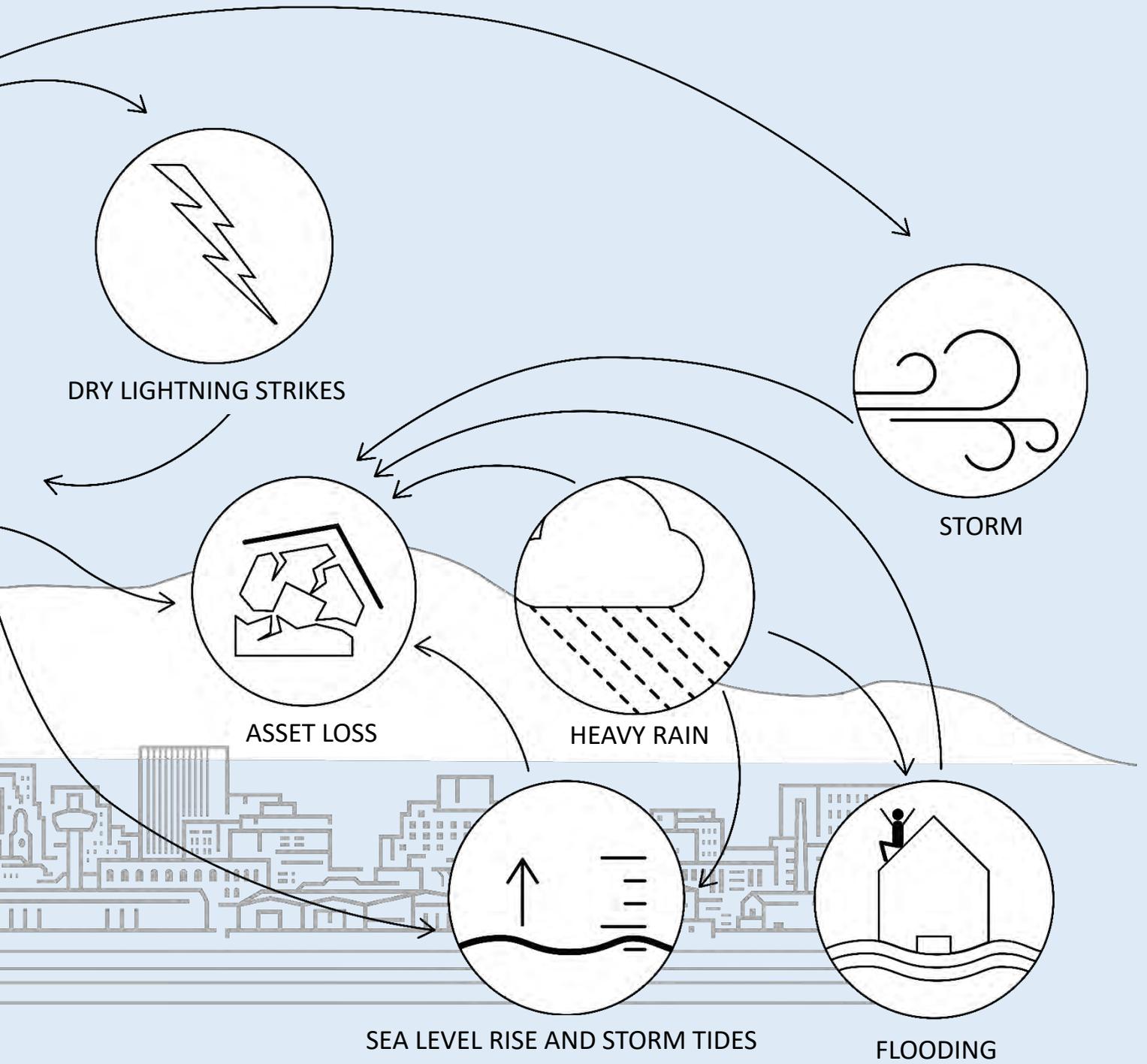
Marine Heatwave:
Blacklip abalone
mortality and arrival
of warm
water fish species

Floods in Northern
Tasmania

**3 LIVES LOST
COST \$180 M**

World Heritage
Area Fires

**LOSS OF 1500-
YEAR-OLD
PENCIL PINES**



**SUMMER
2017-18**

Marine Heatwave:
hottest on record
Increase in long-spined
sea urchin and loss of
giant kelp forests

MAY 2018

Hobart Flood
**\$100 M+
COST TO
TASMANIA**

**SUMMER
2018-19**

Hottest summer
on record

SUMMER 2019

Fires:
2500 dry lightning
strikes caused over
70 fires burning across
187 000 hectares

ACTION PLAN OVERVIEW

LEADERSHIP

LEAD-01
**SUSTAINABLE HOBART
WEB PORTAL**

LEAD-02
**COMMUNITY
EMISSIONS PROFILE**

LEAD-03
**HELPING COMMUNITIES
HEAL**

LEAD-04
**CLIMATE YOUTH
PROGRAMS**

LEAD-05
**URBAN SUSTAINABILITY
DISPLAYS**

LEAD-06
**SUSTAINABLE HOBART
COMMUNITY FORUM**

LEAD-07
**TOURS OF HOBART'S
ENERGY SYSTEMS**

LEAD-08
OTHER CITY PROJECTS

MOBILITY

MOBI-01
**DIVERSIFYING AND
ELECTRIFYING THE CITY'S FLEET**

MOBI-02
ELECTRIC VEHICLE CHARGERS

MOBI-03
ENCOURAGING SHARED TRIPS

MOBI-04
**PLANNING FOR AUTONOMOUS
VEHICLES**

MOBI-05
HELPING HOBART'S RETAILERS

MOBI-06
**LEARNING TO CROSS THE ROAD
AGAIN**

MOBI-07
CHARGE YOUR E-BIKE

MOBI-08
NEW MICROMOBILITY OPTIONS

MOBI-09
OTHER CITY PROJECTS

ENERGY

ENER-01
REIMAGINING ENERGY

ENER-02
CITY-SCALE ENERGY STORAGE

ENER-03
REAL-TIME DATA

ENER-04
EVALUATING REAL RETURNS

ENER-05
OTHER CITY PROJECTS

RESILIENCE

- RESI-01
HABITAT EXTENSION AND RESTORATION
- RESI-02
RECOGNISING AND MONITORING 'EDGE' HABITATS
- RESI-03
VERTICAL GARDENS
- RESI-04
RECLAIMING LOST SPACES
- RESI-05
EDIBLE PLAYGROUNDS
- RESI-06
CLIMATE-READY HOMES
- RESI-07
URBAN COOLING VEGETATION PROGRAM
- RESI-08
A SAFE AND RESILIENT CITY
- RESI-09
MEASURE YOUR HOME'S PERFORMANCE
- RESI-10
OTHER CITY PROJECTS

WASTE

- WAST-01
RECLAIMING DARK SKIES
- WAST-02
TRASH TALKING
- WAST-03
SMOKE SIGNALS
- WAST-04
OTHER CITY PROJECTS

GOVERNANCE

- GOV-01
CLIMATE PARTNERSHIPS
- GOV-02
CLIMATE AND SUSTAINABILITY WORKING GROUP
- GOV-03
URBAN SUSTAINABILITY GRANTS SUPPORTING COMMUNITY INITIATIVES
- GOV-04
DISASTER SCENARIO PLANNING
- GOV-05
ENERGY ACTION PLAN AND GREENHOUSE GAS ANNUAL REPORTING
- GOV-06
PUBLIC REALM DESIGN GUIDELINES
- GOV-07
SUSTAINABLE PROCUREMENT
- GOV-08
CITY EMPLOYEE CLIMATE INDUCTION
- GOV-09
GUIDELINES FOR LOW-CARBON CONSTRUCTION AND MANUFACTURE
- GOV-10
LOCAL GOVERNMENT COLLABORATIONS
- GOV-11
INFILL DEVELOPMENT
- GOV-12
OTHER CITY PROJECTS

LEADERSHIP

Initiatives that involve the City influencing, educating or collaborating with other governments and stakeholders.

As a capital city, Hobart can lead conversations and embark on ambitious projects not available to smaller municipalities. The City's role can also be to bring those municipalities along – sharing what worked, advising on what didn't and having broader stakeholders benefit from Hobart's experience.



LEADERSHIP

In Hobart: A community vision for our island capital, the community told us their vision:

- Our leadership is willing to take risks and is open to new ideas. Our people are creative, inventive, honest and resilient, and our government and community decision-makers are too. We recognise these qualities are a means to an end: it is up to us to decide what we are trying to achieve.
- We deliver on the intent of our vision, identity statements and pillars.

In the Capital City Strategic Plan, in response to the vision, the City committed to:

- ensure City leadership aligns with Council values
- support initiatives for residents and visitors to build their connection to nature
- demonstrate how projects, policies and other City initiatives have responded to community feedback and input
- lead the development and implementation of a regional response to the global climate and biodiversity emergency.

In this Action Plan we respond to the community's vision in the following ways:

Hobart is a leading environmental city. The Council has responded proactively to climate change for over two decades and in 2019 declared a Global Climate and Biodiversity Emergency. The City continues to show leadership in responding to climate change. Furthermore, we embrace the new partnerships being formed under the Hobart City Deal and Greater Hobart Act, which are new federal, state and local government instruments designed to encourage and create avenues for regional solutions and planning.

We will continue our citizen-scientist programs where families and schools can monitor the environmental performance of their buildings, and enhance these programs with smart technologies that can monitor over days and weeks.

We will showcase what we have achieved and give others the opportunity to tour our facilities and learn from the successes and failures encountered in our programs.

We will use our platforms and community connections to publish and promote sustainable solutions.

We will work constructively with our neighbouring councils to develop whole-of-region solutions.

LEADERSHIP

LEAD-01 SUSTAINABLE HOBART WEB PORTAL

Making a wealth of climate, sustainability, energy and mobility knowledge available in video, text and database formats in one location on the City's webpage.

The Sustainable Hobart webpage will provide resources, links and information to encourage sustainable and carbon-neutral building construction, design and development. It will be the information hub to bring together the resources within this plan and report on the progress of this list of actions.

TIMEFRAME: Short–Medium
ACTIVITY TYPE: Engagement, Research, Publication

LEAD-02 COMMUNITY EMISSIONS PROFILE

Determining the source of community GHG emissions.

The City has developed a methodology for determining local community emissions. To ensure its accuracy, the methodology was peer reviewed and will continue with international certification.

The City will lobby the Tasmanian Government to adopt this methodology and provide annual municipal emission summaries for Tasmanian councils to enable the development of evidence-based programs to reduce energy use and emissions and contribute to state, national and international targets to limit warming to less than 2°C.

Within the Targets section of this plan, we have committed to work with the community to develop a community emissions reduction target by the end of 2022.

TIMEFRAME: Short
ACTIVITY TYPE: Engagement, Research, Lobbying

LEAD-03 HELPING COMMUNITIES HEAL

Bringing practical knowledge to help communities build back with resilience following major environmental events.

Major environmental events take a toll on communities and can have terrible psychological effects, particularly on the most vulnerable.

However, they can also bring communities together. For instance, after the floods of May 2018, the communities living around the Hobart Rivulet saw major destruction of property and disruption to their lives. As well as rebuilding infrastructure and public artworks, the City of Hobart worked creatively with other agencies including the Tasmanian and Australian governments, artists and other groups to harness the goodwill of united communities and create small artworks, stories, community events and publications commemorating resilience.

TIMEFRAME: Ongoing
ACTIVITY TYPE: Publications, Engagement

LEAD-04 CLIMATE YOUTH PROGRAMS

Partnerships with schools and universities to bring youth voices to the City’s sustainability programs.

Hobart’s youth are critical and active players in climate action.

The City will partner with University of Tasmania and school students to pilot a climate mentorship program, provide an opportunity for students to engage with elected representatives and share the youth voice on issues with direct impacts on their future.

Other programs for young people involve teaching schools and youth organisations to become active users of the internet of things (IoT) using the City’s LoRa network, for instance, to monitor environmental indicators.

TIMEFRAME: Short–Medium

ACTIVITY TYPE: Engagement, Education, IoT

LEAD-05 URBAN SUSTAINABILITY DISPLAYS

Public displays and videos to explain the work the City does in sustainability, energy management, climate change and greenhouse gas reduction.

The City has been taking action on climate change since 1999 and sustainably delivering its services even longer. There are many visible signs of action, such as the installation of over 1400 solar panels on the Doone Kennedy Hobart Aquatic Centre.

However, much of what we do has simply become business as usual for the community and the City of Hobart, spread across all our operations.

Sharing the City’s sustainability story will help build awareness and constructive community engagement about past, current and future sustainability action, showing the difference that can be made over time.

TIMEFRAME: Short–Medium

ACTIVITY TYPE: Engagement, Research, Publication

LEAD-06 SUSTAINABLE HOBART COMMUNITY FORUM

Establishing a Sustainable Hobart Community Forum to share knowledge between the community and the City.

Engaging with communities is key to increasing community climate resilience and deepening climate action. To enable local responses requires individuals to understand how impacts affect them and from this find solutions. It also requires them to understand the efforts of the City.

By establishing a Sustainable Hobart Community Forum, the City will have a platform to continually explore local climate and sustainability issues, sharing knowledge and insights both inwards (by bringing the community voice and perspectives to the City’s programs and services and governance structures) and externally (through community networks building awareness and understanding of the City’s Sustainable Hobart programs).

TIMEFRAME: Short

ACTIVITY TYPE: Engagement

LEADERSHIP

LEAD-07 TOURS OF HOBART'S ENERGY SYSTEMS

Creating opportunities for the public and other organisations to learn from the City's implementations of sustainable, energy-saving infrastructure.

The City has a strong and successful program of reducing energy use and greenhouse gas emissions across its assets: buildings, depots, community halls, car parks, vehicles and plant fleet, street lighting, recreational facilities and services.

Sharing lessons and efforts through the delivery of peer-to-peer energy tours with other councils, interested groups and individuals will extend the reach of the program to the community and other key stakeholders.

TIMEFRAME: Short–Medium
ACTIVITY TYPE: Engagement,
Tours

LEAD-08 OTHER CITY PROJECTS

Programs and actions developed under the *Capital City Strategic Plan* and various other divisional strategies.



PREPARE
NOW
FOR
DISASTER

HONORABLE SOCIETY
OF
MUSICIANS

MOBILITY

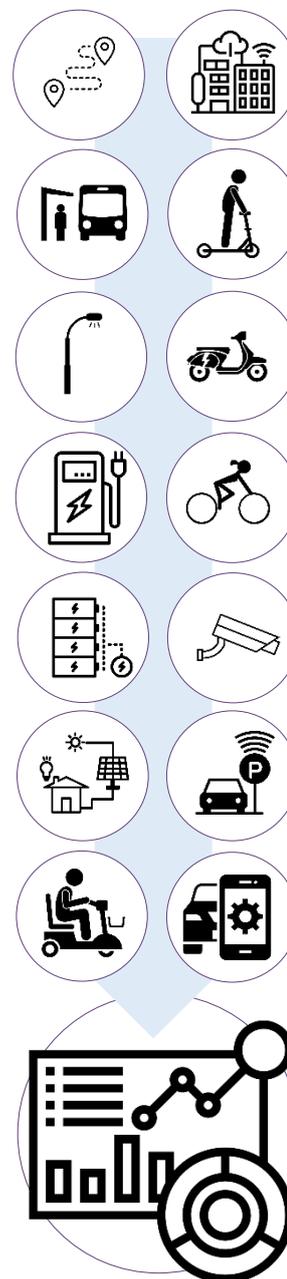
Initiatives to move people and goods around the city in more sustainable ways.

Hobart’s electricity is largely sourced from hydro, and increasingly we rely on PV and wind sources too. Only about 10% of our electrical energy comes from fossil fuel sources.

However, almost 100% of our transport comes from fossil fuels.

By shifting to alternative fuel sources, like electric cars or hydrogen-powered trucks and buses, we can start to bring down our vehicle emissions.

If you fill your car using hydroelectricity sourced in one of Tassie’s dams, you’re saving the environment and potentially buying a job for a fellow Tasmanian.



MOBILITY

In Hobart: A community vision for our island capital, the community told us their vision:

- We are bold: we investigate, trial and implement energy-efficient transport and technology alternatives for the community. We are a city where everyone has effective, safe, healthy and environmentally friendly ways to move and connect, with people, information and goods, and to and through spaces and the natural environment.
- We seek out and respond to transport and technological opportunities that reduce emissions. We are open to investigating, trialling and/or implementing new or reinvigorated transport modes.
- Our cityscape is easy to access and move through, encouraging the movement of people ahead of cars. People of all abilities have access to effective and efficient transport options.
- Technology and information systems support and enhance transportation options, increasing ease of use, efficiency, sustainability and uptake.
- We build smart and creative transport and connectivity solutions through collaborations with all levels of government, education, private industry, and wider communities.
- We make active and public transport easy, planning and building the infrastructure needed to make these modes convenient and effective. We respond to new opportunities for energy-efficient transport and design.

In the Capital City Strategic Plan, in response to the vision, the City committed to:

- improve connectivity throughout Hobart's inner city and suburbs
- consider social, environmental and economic elements in transport and technology decision-making. Investigate transport and technology possibilities that reinforce values of efficiency, sustainability, connection and helping people to meet the needs of daily life
- ensure equal access is factored into transport and technology decision-making. Increase the climate resilience of transport and connectivity networks
- work with stakeholders to prioritise low-emission, energy-efficient, renewable transport and technology initiatives, including trialling emerging solutions; and work on the efficient, sustainable and innovative movement of people, information and goods.

In this Action Plan we respond to the community's vision in the following ways:

Hobart's greenhouse gas emissions are largely a result of petrol-powered cars. Meanwhile, the elderly, people with disabilities, people living away from major public transport routes and community members without access to a car or a licence gain the least benefit from the City's road and parking systems, one of its most expensive assets.

We will develop the first fast-charging station in central Hobart, and create charge points for electric bikes and scooters. We will trial innovative forms of transport, like driverless buses and delivery vehicles. We will lobby for changes to pedestrian access to road crossings. We will use apps and other technologies to help encourage shared trips and bicycle use, so that changing pedestrian access doesn't increase congestion.

MOBILITY

MOBI-01 DIVERSIFYING AND ELECTRIFYING THE CITY'S FLEET

Creating opportunities for the City to bring electric vehicles and other mobility types into service to augment or replace petrol vehicles over time.

The City has a large fleet of vehicles, mainly petrol and diesel. But as other options become available, our fleet may rapidly change in nature. Whether that means more walking, more EVs, scooters and bikes, or hydrogen fuel cell vehicles, the City will develop its maintenance, refuelling and vehicle-pooling schemes to upskill our staff and make our systems smarter to work with new vehicle types and their refuelling regimes. The City making such a change will also create opportunities to work with Metro and other operators to share ideas and resources, improve knowledge of public transport options and reduce emissions across the region.

TIMEFRAME: Medium-Long
ACTIVITY TYPE: Infrastructure, IoT, Data

MOBI-02 ELECTRIC VEHICLE CHARGERS

Installing the infrastructure to fast-charge electric vehicles in Hobart.

The City installed Hobart's first fast charger in Dunn Place car park in 2020 to help create the conditions for the faster uptake of electric vehicles.

Renewable and energy storage options may allow the City to develop fast-charger points without expensive grid infrastructure upgrades.

With over 80% of Hobart's electricity coming from hydro and wind sources, vehicles make up a larger proportion of our fossil fuel use and CO2 emissions than they do in other parts of Australia.

TIMEFRAME: Short
ACTIVITY TYPE: Infrastructure

MOBI-03 ENCOURAGING SHARED TRIPS

Developing the data and links to allow more successful ride sharing.

As our systems get smarter and more connected, we are working with commercial vendors, councils and other government agencies (which are also custodians of data sets) to better use our data.

This will help turn the City of Hobart's parking data, security camera footage, pedestrian counts, capital works programs, roadworks information and other mobility data into usable app-based systems to help manage congestion, find rideshare opportunities, drive straight to where the parking is available and discover other options that don't involve an extra car in the city.

Better cooperation and intelligent data management can mean fewer cars, lower emissions, reduced roadkill and less stress on our roads and drivers.

TIMEFRAME: Short-Medium
ACTIVITY TYPE: App, IoT

MOBI-04 PLANNING FOR AUTONOMOUS VEHICLES

Trialling autonomous vehicles in the City.

In the City's December 2019 demonstration, it was clear that many embraced autonomous vehicle technology, and saw the significant benefits it offers to less mobile groups and those without easy access to existing public transport routes.

Elderly people and less-able residents were excited by the possibility of home-to-hub routes that could take people the first mile of their journey at very low cost and drop them at major bus interchanges to go on to the city or elsewhere.

By testing and overcoming the legal, risk and community barriers to autonomous vehicles, we are creating the conditions for low-cost, driverless, electric transport as a future solution, particularly for groups who are currently isolated or worried about having to leave their lifetime home because of mobility issues.

TIMEFRAME: Short

ACTIVITY TYPE: Legal, Planning, Trial

MOBI-05 HELPING HOBART'S RETAILERS

Online shopping from local retailers.

Online shopping is convenient, but it increases the carbon cost of purchases flown in for quick delivery and it tends to direct spending away from local retailers – our major job creators. Most online shopping deliveries to Tassie come by air for next-day delivery by courier, which is a poor environmental outcome.

Imagine if online shopping could be through local retailers, with same-day deliveries by micro-mobility vehicles, electric vehicles or autonomous vehicles. That's delivery in a few hours, buying locally online and not using your car.

We will work with innovators, retailers, entrepreneurs and autonomous vehicle experts to support a model that brings access to local online shopping and delivery to Hobart's citizens and retailers. We will also work with the state government to examine how to best achieve delivery on our roads, quickly, safely and legally.

TIMEFRAME: Medium-Long

ACTIVITY TYPE: Partnerships, IoT, Lobbying

MOBI-06 LEARNING TO CROSS THE ROAD AGAIN

Making walking easier, quicker and more pleasant.

Walking is by far the most ecologically friendly way to get around. But it doesn't feel friendly when you just miss the 5 second green-man window to cross the road... in winter... in the rain. Then, if you're crossing diagonally, you wait for two more light-cycles to reach the corner you want.

The Council doesn't control the traffic lights, but we do gather automated data and significant public feedback, which can help determine what people desire in their city with regard to pedestrian waiting times, walking accessibility, footpath use and condition, and other factors.

The Council controls footpaths, parking, pedestrian bridges and bike lanes, and can provide information to other stakeholders when data or feedback suggests that changes to pedestrian wait times, diagonal crossings or other innovative road-sharing options would benefit the largest number of people.

TIMEFRAME: Short-Medium

ACTIVITY TYPE: Infrastructure, IoT, Lobbying

MOBILITY

MOBI-07 CHARGE YOUR E-BIKE

Developing the charging infrastructure for electric micromobility vehicles.

E-scooters and e-bikes need charge points just like electric cars, but their power needs, energy requirements and connection infrastructure costs are far lower.

The City will assist in the development of publicly and privately owned charging points, to create more opportunities for commuters and shoppers to e-bike, knowing they'll get back up the hill with their shopping.

TIMEFRAME: Medium

ACTIVITY TYPE: Infrastructure, IoT, Data

MOBI-08 NEW MICROMOBILITY OPTIONS

Trialling micromobility options in Hobart.

Getting new mobility options onto our roads is fraught, but fortune favours the bold (just ask Uber). E-scooters, e-skateboards and e-bikes are becoming more and more common as commuting options, although they are not all legal on Tasmanian roads and footpaths. Electric tuk-tuks are another innovation replacing the noisy and polluting versions that have plied the streets of India and Asia for decades. These vehicles are efficient, quiet, non-polluting, quick, low cost and a fun way to move individuals and small groups of people around the city.

The City will continue to work with the state government, commercial operators and other stakeholders to trial (and help make legal!) new micromobility transport types, particularly to suit the short trips likely to be more common as the University of Tasmania moves its base from Sandy Bay to the city centre, bringing over 10,000 new young people into the CBD every day.

TIMEFRAME: Long

ACTIVITY TYPE: Infrastructure, IoT, Lobbying

MOBI-09 OTHER CITY PROJECTS

Programs and actions developed by other units of the City, including under the *Transport Strategy (draft) 2019–30*, the *Capital City Strategic Plan* and various other divisional strategies.



University of Tasmania
Hobart
PACI
Tasmanian Government

MANUAL DRIVING

ST Engineering

www.ydrive.me

yDrive

AUTONOMOUS SOLUTIONS

navya

ENERGY

Initiatives to reduce greenhouse gas emissions and use renewables more effectively and at lower cost.

We live in a state with abundant renewable hydro energy. As wind farms are installed and PV panels multiply, our electricity is getting greener by the day. But tomorrow we may need double the energy to power the state's electric cars, or produce huge surges of power to lower emissions from ships in port using a renewable grid connection instead of the ship's own engines.

The City is today a customer of traditional retailers and providers of energy in Tasmania, but there are examples from around the world where changing the relationships between energy retailers and customers and developing new ways of procuring energy and services have brought sustainable and economic benefits to local people and regions.

The next generation of energy procurement is going to be about renewables, bulk storage, cost reductions, peer-to-peer power networks, understanding predictability, microgrids, smart networks and other innovations.



ENERGY

In Hobart: A community vision for our island capital, the community told us their vision:

- We make the ecologically sustainable and energy-efficient thing the easy thing.
- We are bold: we investigate, trial and implement energy-efficient transport and technology alternatives for the community.
- We develop appropriate long-term and sustainable solutions by investing in skills, systems and processes in conjunction with the community and a variety of partners.
- We challenge ourselves to invent. We are driven by creative thinking. We inspire and are inspired by our city, its people, built environment and ecology.
- We use closed loop energy and waste systems. We respect our access to water, food and energy as critical to life.
- Renewable energy systems power our city.
- Best practice in energy efficiency is our standard.

In the Capital City Strategic Plan, in response to the vision, the City committed to:

- work with stakeholders to prioritise low-emission, energy-efficient, renewable transport and technology initiatives, including trialling emerging solutions
- extend the City's sustainability leadership in energy and closed loop resource systems.

In this Action Plan we respond to the community's vision in the following ways:

Using renewable energy is not just good for the environment. It is rapidly becoming the lowest-cost and most resilient form of energy, not subject to oil shocks, stranded-asset risks or global supply.

We will bring the energy-producing rooftops of Hobart into the City's energy plan, buying and storing energy from our residents, giving the City a source of lower-cost energy, while still offering residents a higher price for their solar power than they can get from feed-in tariffs.

We recognise that energy storage is the missing link in the renewable energy revolution and we will trial innovative storage solutions, from batteries to pumped hydro.

We will use our data to allow interested residents to watch and analyse power flows in real time and, most importantly, to perform economic analysis of the renewable investments we have made, to determine which are the most bankable for future programs.

ENERGY

ENER-01 REIMAGINING ENERGY

Encouraging new ways of selling, storing and purchasing energy through the grid.

We are investigating new ways of generating and sharing energy, in technology parks, microgrids and apartments, as well as working with UTAS researchers and TasNetworks to investigate the possibility of peer-to-peer energy sharing and virtual power networks.

As electric vehicle numbers increase, we will increase the number of chargers in our car parks and on our footpaths, and explore new ways to bring energy to those chargers, or use them in an aggregated way as grid-stabilising batteries.

As our own electricity usage will likely increase as we electrify our vehicle fleet, we are keen to establish economical self-generation through our existing PV assets, and to potentially purchase energy from residents with solar panels, where developing peer-to-peer technologies make this possible.

TIMEFRAME: Medium–Long
ACTIVITY TYPE: Infrastructure, App, IoT

ENER-02 CITY-SCALE ENERGY STORAGE

Storing energy in the most environmentally friendly ways.

There are many methods to store energy – in batteries, flywheels, gravity trains and more.

Hobart is a city of small to medium water sources sitting at various altitudes, many already interconnected by pipes. This also provides the perfect opportunity to explore pumped hydro, the world’s most successful and environmentally friendly bulk energy-storage method.

We will engage with stakeholders and industry to investigate the most cost-effective storage methods to better manage high-demand loads and to get the best value from City-owned generation sources.

TIMEFRAME: Medium–Long
ACTIVITY TYPE: Infrastructure, IoT

ENER-03 REAL-TIME DATA

Aggregating and publishing the City’s energy, emissions and climate data.

Data nerds love to engage with the figures. As our metering and networks become smarter, the City will make the live data available on various platforms to allow tech-savvy residents to identify trends and help show where the City is succeeding or falling short of its commitments to energy efficiency, emissions reduction and cost savings.

In 2020 we aggregated our PV asset data into a single system for the first time, and will publish this data in a publicly available portal to give the City and other stakeholders high-quality information about real PV performance across 16 Hobart sites.

TIMEFRAME: Medium–Long
ACTIVITY TYPE: Infrastructure, IoT

ENER-04 EVALUATING REAL RETURNS

Determining the real return of the City's past investments in efficiency and energy technologies.

Investments in renewables and storage have long-term returns, but they also have real financial and ecological costs, such as finance, disposal, depreciation, life performance, recyclability etc.

As a power generator rather than just a consumer, the City will continuously measure and report on the performance, reliability, ecological footprint and lifetime cost-effectiveness of various energy options, so that we can make (and help others make) the best financial and ecological choice every time we reinvest.

TIMEFRAME: Medium–Long
ACTIVITY TYPE: IoT, Data, Analysis

ENER-05 OTHER CITY PROJECTS

Programs and actions developed under the *Capital City Strategic Plan* and various other divisional strategies.



RESILIENCE

Initiatives that make Hobart better prepared for the changes climate change is bringing.

Some aspects of climate change are already apparent. All over Australia we are seeing earlier starts to the bushfire season and less water available to fight the fires.

Resilience is about toughening our city to withstand shocks and changes. As summers get hotter, we can find lower energy ways to cool our homes. As rainfall patterns change, we may have to store water differently or design our communities to cope with more frequent floods.



RESILIENCE

In Hobart: A community vision for our island capital, the community told us their vision:

- We mitigate climate change and have adaptation strategies in place.
- Our city is a part of nature and nature is a part of our city.
- We are prepared for and resilient to natural disasters.
- We are active and aware in regenerating the ecosystems that have been harmed by human development.
- Hobart's biodiversity is preserved, secure, and flourishing. Protecting and rehabilitating native wildlife, vegetation and other species is central to how we live and work.

In the Capital City Strategic Plan, in response to the vision, the City committed to:

- encourage an ecologically sustainable, resilient, healthy, equitable and economically viable food system
- support and implement initiatives to build resilience to emergencies, with a focus on those most vulnerable
- increase the climate resilience of transport and connectivity networks
- adopt a holistic approach to climate change mitigation and adaptation across all pillars of the strategic plan
- pursue corporate and community environmental sustainability
- create development guidelines that facilitate working with existing building stock, including making upgrades to improve energy efficiency and resilience to climate change.

In this Action Plan we respond to the community's vision in the following ways:

As we experience changing weather and climate events, our communities will need to build resilience and adapt. This plan begins a program of assisting our communities in this process.

We will bring more gardens, green space, birdlife and animal habitat into the city and give communities more ownership over the care of green spaces in playgrounds and community gardens. We will engage the community to work together on building resilience and rebuilding after severe weather events.

We will put the smart monitoring and data systems in place to allow wildlife abundance, indicators around climate and microclimate zones and other environmental factors to be measured and tracked over time. Meanwhile we will increase the tree canopy and replace lost fauna habitats.

We will build awareness of better building and energy-use techniques to respond to climate change.

RESILIENCE

RESI-01 HABITAT EXTENSION AND RESTORATION

Helping our bushland teams develop a more resilient landscape.

As bushfires increase in frequency and urban development continues, the loss of vegetation, hollow logs, dead trees and other crucial habitat is increasingly stressing native animals, insects and birds. The City's Bushland group designs its hazard reduction burns specifically to protect existing habitats, but it is possible to involve all areas of our Council and community to not just preserve what we have, but to create natural habitat in our gardens, parks, reserves and open spaces, while beautifying and protecting our waterways and the riparian corridors around them. Technology can help: we will use drone footage to provide our Bushland teams with map overlays of locations of certain types of trees and vegetation crucial to some of our threatened natural species, and then work with volunteer groups to identify places to plant new ones to encourage wildlife to hop across and spread to new areas.

TIMEFRAME: Medium
ACTIVITY TYPE: IoT, Engagement

RESI-02 RECOGNISING AND MONITORING “EDGE” HABITATS

Increasing awareness of niche habitats on the edges of open spaces, and using technology to map and protect it.

People love open spaces and manicured lawns, but insects and small mammals love fallen timber and hiding places. While both can coexist, people need to become aware that cleared ground is not habitat. Our wildlife requires niche habitats, at least on the edges of our open spaces, such as understory plants, dead timber, long grass and areas that aren't tidied and trimmed.

As we develop new data publishing platforms and monitoring technologies (like our LoRa network) we can monitor habitats for change, soil moisture, light levels, noise and animal activity, and also allow citizen scientists and volunteer groups to locate and map zones the City could allow to develop as habitat. Sponsor volunteer groups will be sought and signage will raise awareness that a messy edge is not poor maintenance, but in fact evidence of careful management.

TIMEFRAME: Short–Medium
ACTIVITY TYPE: App, IoT

RESI-03 VERTICAL GARDENS

Growing green vertical spaces.

Vertical spaces, like walls and fences, are rarely considered as part of the real estate of the city. But they make up a significant percentage of the built environment.

Increased planting on suitable vertical spaces is not only environmentally advantageous (both to microclimates and to birds and insects), it can also be extremely beautiful. The City will work with scientists, horticulturalists and artists to develop beautiful and self-sustaining patches of beautiful, vertical habitat to bring a new dimension to the city's vertical space.

TIMEFRAME: Medium
ACTIVITY TYPE: Engagement, Small Infrastructure

RESI-04 RECLAIMING LOST SPACES

Developing and encouraging low-cost methods to beautify forgotten functional spaces.

The verges of roads like the Brooker Highway, parts of Queens Domain, and degraded creeks and waterways are often seen as a handy dumping ground for fast-food containers. This is not only revolting, it also costs the City money to continuously clean up.

The City will work with various stakeholders, including the fast-food multinationals who have a role to play, to reach a holistic solution. Cameras to catch dumpers, packaging tagged back to the purchaser and heavy penalties are one part of the solution. But another is to change the environment. Research shows that beautiful verges with artworks and suitable planting are at lower risk of litter and dumping, and are better protected by public vigilance.

TIMEFRAME: Medium
ACTIVITY TYPE: Engagement, Small Infrastructure

RESI-05 EDIBLE PLAYGROUND

Incorporating edible plants into our City and play spaces.

Our diets and our children's diets are changing, as marketing messages bombard us, altering our idea of what constitutes healthy eating. The simple message is that unprocessed food is better for us, and better for the environment.

The City will develop a program of integrating edible plants into playgrounds, while encouraging children and parents to tend and water them (as well as eating straight off the plant). Community gardens and similar developments have become a natural part of life in many global cities. To do the same here is child's play.

TIMEFRAME: Medium
ACTIVITY TYPE: Engagement, Small Infrastructure

RESI-06 CLIMATE-READY HOMES

Helping you measure your home's performance.

The City's Climate Safe Homes fact sheets will help the community of Hobart build resilience to future climate hazards. The fact sheets will be available through the Sustainable Hobart Web Portal (which is created by another action in this plan), the Customer Service Centre and through development application processes. The material will help householders increase energy efficiency and encourage sustainable adaptation principles in construction, design and development.

TIMEFRAME: Short–Medium
ACTIVITY TYPE: Engagement, Research, Publication

RESILIENCE

RESI-07 URBAN COOLING VEGETATION PROGRAM

Planting more trees in more streets and in waterway corridors.

Urban heat islands are built areas that are significantly warmer than surrounding areas due to human infrastructure and activities.

Buildings and paved areas store more heat, resulting in heat-stress-related negative health outcomes for residents. These trends are set to intensify with climate change.

Smart data collection will identify heat islands, helping to prioritise areas for street tree planting. This initiative will include evidence-based communications about the benefits of green infrastructure, trees and nature in urban spaces, as well as a review of which species are planted, to ensure they will be tolerant to the future climate. This initiative will support the City's goal of reaching 40% canopy cover by 2046.

TIMEFRAME: Long
ACTIVITY TYPE: Engagement, Research, Publication

RESI-08 A SAFE AND RESILIENT CITY

Scanning, mapping and monitoring environmental threats to the city.

The City is using projections and modelling to understand what a future climate means for Hobart and its assets and services. This understanding will enable the City's programs to provide natural, social and built responses to climate hazards. Working with other areas of the City and surrounding councils, these programs include actions such as: future-proofing stormwater assets and protecting overland flow paths, reducing flooding impacts, managing the threat of fire, strategic land-use planning and minimising coastal hazards.

Outcomes in this area will, for instance, be the use of 3D mapping of the city to assist the City's Bushland teams to identify potential locations for trapping water on our surrounding hills to help moisten, green and fireproof our environment and cool the local microclimate. Also important is increasing the community's awareness of the benefits of integrated water cycle management (e.g. stormwater detention, porous gardens, vegetation cover), preserving open overland flow paths, and improving the community's awareness of flood and fire risk at their own property.

TIMEFRAME: Short–Medium
ACTIVITY TYPE: Climate Considered Management Plans

RESI-09 MEASURE YOUR HOME'S PERFORMANCE

Updating and creating tools to help the Hobart community maximise their energy savings.

The City pioneered the Home Energy Audit Toolkits (HEAT), and Take it Home versions for schools.

These kits can be enhanced to include automated logging devices that connect to the City's LoRa network. This will allow schools, households and businesses to view their building's environmental performance against benchmarks and compare performance during different seasons, different overnight temperatures, and in various weather events and wind directions.

TIMEFRAME: Short–Medium
ACTIVITY TYPE: Kits, IoT, Data

RESI-10 OTHER CITY PROJECTS

Projects and actions developed to assist the Bushland team and other divisional strategies.



WASTE

Initiatives to make better and more efficient use of resources and prevent them becoming pollutants at end of life.

Our City is already a world leader in sustainable waste management, and it is planning to improve this record in ways laid out in the visionary *Waste Management Strategy 2030*.

The waste actions in the Sustainable Hobart Action Plan touche on waste issues that we can address with our existing and growing long-range wide area network (LoRaWAN) technology. We can also take action on waste products not considered by the City's waste management team, such as light pollution.



WASTE

In Hobart: A community vision for our island capital, the community told us their vision:

- We see our city as a system, where built, natural and human environments are part of each other.
- Future generations can see the night sky as we do. We work to improve the health of the air and water.

In the Capital City Strategic Plan, in response to the vision, the City committed to:

- extend the City's sustainability leadership in energy and closed loop resource systems
- support and run initiatives to reduce light pollution and enhance the quality of Hobart's night sky.

In this Action Plan we respond to the community's vision in the following ways:

The City's *Waste Management Strategy 2030* responds to the problems of landfill and other issues in innovative ways, which we do not attempt to replicate in this document. However, there are broader issues around waste that can form part of the response to climate change that are addressed in the Action Plan.

We will change the way lighting is used in the city by beginning a program of appropriate lighting levels and direction. Today, much of our lighting energy is sent into space, not only creating massive and wasteful inefficiency and expense but despoiling our view of the stars.

We will implement smart technologies and environmental sensors to track atmospheric pollutants. Another initiative will be to reduce the frequency of garbage collection, saving money and energy while reducing emissions.

WASTE

WAST-01 RECLAIMING DARK SKIES

Making the stars more visible.

Lighting our city at night is expensive and extremely inefficient, as a large amount of energy is sent directly into the sky. This is wasteful and deprives residents and visitors of a view of the wonders of the southern stars and the auroras that we are lucky enough to experience.

A comprehensive program will incorporate appropriate streetlight design, better-directed street lighting, and education to shop owners about lighting cleverly rather than lighting brightly, recognising that people want their city to feel safe, but cosy like firelight at night (not stark like a tennis stadium). Installing dimmable and sensor-driven lighting will also save the City money, extend asset life and give us better access to our once-visible night sky.

TIMEFRAME: Medium–Long

ACTIVITY TYPE: Infrastructure, IoT, Data

WAST-02 TRASH TALKING

Emptying bins only when they are full.

Smart bins can send back information through the LoRa network about their current capacity and times of frequent use. This helps the City use fewer trips in trucks to empty bins that didn't need emptying, saving money and reducing emissions. (And of course the data can be associated with weather information and odour sensing to make sure bins are emptied even if they are not full if they have become unpleasant to be around.)

The City's investment in LoRa technology brings great outcomes in connectivity, innovation, citizen engagement, data sharing and environmental monitoring.

TIMEFRAME: Short–Medium

ACTIVITY TYPE: Infrastructure, IoT, Data

WAST-03 SMOKE SIGNALS

Sensing particulate emissions for safety, health and climate information.

Telltale atmospheric traces can alert the City and emergency services to fires, illegal burn-offs, pollution leaks and other environmental issues.

The City's LoRa network allows low-cost monitors to be placed in various locations, or for citizen-scientists to install them at home, meaning fewer unknown or unmonitored atmospheric contaminants.

TIMEFRAME: Medium

ACTIVITY TYPE: Infrastructure, IoT, Data

WAST-04 OTHER CITY PROJECTS

Projects and actions developed under the *Waste Management Strategy 2030*, the *Capital City Strategic Plan* and various other divisional strategies.



GOVERNANCE

Initiatives that use the City of Hobart's legislative frameworks to effect change.

The City of Hobart has legal authority over many aspects of our community. The City approves planning applications, raises money from parking, zones areas for development, manages local roads, manages and monitors its energy use, sets limits on allowable waste and takes charge in disaster situations. These instruments of governance can be used to set an agenda to respond appropriately to climate change.



GOVERNANCE

In Hobart: A community vision for our island capital, the community told us their vision:

- We respect natural resources and design for energy efficiency.
- We incentivise ecologically responsible development, including with materials that are responsibly sourced and used.
- We ensure buildings and infrastructure lead to the best possible environmental outcomes.
- We feel and are empowered to make good environmental decisions.
- Ensure that social and economic outcomes, climate change, biodiversity and green infrastructure are factored into city design

In the Capital City Strategic Plan, in response to the vision, the City committed to:

- prepare for the impacts of long-term trends, such as climate change, transport modes, and tourism and housing demand cycles, on the Hobart economy
- ensure that social and economic outcomes, climate change, biodiversity and green infrastructure are factored into city design
- consider social, environmental and economic elements in transport and technology decision-making
- make effective use of research, evaluation and data to inform the City's work and respond to trends and changes
- provide active stewardship of the community vision
- embrace opportunities to incorporate participatory community engagement methods
- maintain a strategic risk framework to identify, manage and mitigate major risks.

In this Action Plan we respond to the community's vision in the following ways:

The governance structures of the Hobart City Council give it the power to effect deep and lasting change. The City is more than an organisation – it is a branch of government. The community of Hobart trusts the City to create and manage rules to bring about the community's vision.

We will be guided by the community in our use of planning regulations, grant funding, City-wide disaster planning, master planning, approaches to procurement and reporting.

We will put working groups in place that can help foster City-wide responses to climate change, that promote efficient use of resources and cooperation between different parts of the City's operational and procedural arms.

We will forge relationships with other councils, government bodies and non-government groups that help us to lead climate discussions and adopt best practice solutions.

GOVERNANCE

GOV-01 CLIMATE PARTNERSHIPS

Building knowledge sharing partnerships with other councils, universities and research bodies.

We will improve how we respond to climate change by increasing collaboration and cooperation with government and other institutions to make the best climate information available to inform decision-making and strategic planning. We want to mine the best information from the University of Tasmania and IMAS, to access the best climate models and research to support mitigation and adaptation efforts in our City.

We will use the opportunities presented by the Hobart City Deal to forge new ways to approach transport, energy use and land-use planning across the Greater Hobart region.

TIMEFRAME: Medium–Long
ACTIVITY TYPE: Engagement, Research, Publication

GOV-02 CLIMATE AND SUSTAINABILITY WORKING GROUP

Making climate change considerations integral to City decision-making.

It is critical that climate change is considered a mainstream issue across the whole of the City's operations, and that it is not isolated to one aspect of its functions.

A Climate and Sustainability Working Group will be established to include employees working in key strategy, policy and operational roles from across the organisation.

The group will lead, coordinate and integrate corporate climate and sustainability actions across energy management, environmental sustainability, community development and resilience and climate change adaptation programs.

TIMEFRAME: Immediate
ACTIVITY TYPE: Engagement, Research, Publication

GOV-03 URBAN SUSTAINABILITY GRANTS SUPPORTING COMMUNITY INITIATIVES

Providing opportunities for the community to develop solutions to climate change and sustainability issues through grants.

Run annually, the program will allocate up to \$55 000 for projects that support waste reduction, energy efficiency, air and water quality, and local food and biodiversity initiatives.

TIMEFRAME: Short
ACTIVITY TYPE: Funding

GOV-04 DISASTER SCENARIO PLANNING

Undertaking disaster scenario planning for predicted changes in weather events.

The City's planning will consider systemic vulnerability and coincident events, integrating the findings into policy, investment and sustainable development across the region.

The May 2018 Southern Tasmanian Extreme Weather Event and the bushfires in the Huon Valley in 2019 and Dunalley in 2013 all demonstrated communities' vulnerability to extreme weather.

TIMEFRAME: Medium
ACTIVITY TYPE: Research, Publication

GOV-05 ENERGY ACTION PLAN AND GREENHOUSE GAS ANNUAL REPORTING

Renewing and continuing the significant renewable and efficiency gains of the City's *Energy Action Plan*.

The City's annual *Energy Action Plan* has set out ways to reduce corporate energy use and greenhouse gas emissions across our assets, and the *Greenhouse Gas Annual Report* provides an annual update on progress.

The *Energy Action Plan* will be reviewed in 2020 in line with the new corporate targets, and annual reports provided after the end of each financial year.

TIMEFRAME: Short
ACTIVITY TYPE: Research, Publication

GOV-06 PUBLIC REALM DESIGN GUIDELINES

Encouraging sustainable solutions in public space design.

As Hobart's population and activity levels grow, we will need to work harder to support more people, day and night.

Streetscape and public space enhancements are needed to provide improved walking and cycling connectivity, improved amenity for a range of users, and better urban resilience (including providing safe pathways for flood waters.)

In recent years, many enhancements have been completed, giving us the chance to learn what has worked well and what could be improved, helping identify the standards for future work.

The City will prepare public realm design guidelines to foster high quality, integrated public spaces, incorporating integrated water management for resilient and sustainable outcomes.

TIMEFRAME: Short
ACTIVITY TYPE: Engagement, Research, Guidelines

GOVERNANCE

GOV-07 SUSTAINABLE PROCUREMENT

Reviewing procurement procedures to encourage options that support sustainable manufacturing and reductions in emissions and energy use.

The City spends approximately \$80 million annually on goods, services and works. Therefore, many opportunities exist to achieve economic, social and environmental benefits through our purchasing practices.

Possible features of this initiative include awareness raising for staff and suppliers and a process for monitoring, reporting and reviewing sustainable procurement performance.

TIMEFRAME: Medium
ACTIVITY TYPE: Research, Guidelines

GOV-08 CITY EMPLOYEE CLIMATE INDUCTION

Cultivating climate awareness in the City's workforce.

A climate-savvy workforce is critical to making climate considerations mainstream across the City's operations and programs.

The City's *Employee Induction Handbook* will be updated to include a 'climate safe and smart' section.

We will make sure our new employees are aware of the City's climate and sustainability priorities, helping them to build climate considerations into their work patterns and roles.

TIMEFRAME: Medium
ACTIVITY TYPE: Research, Guidelines

GOV-09 GUIDELINES FOR LOW- CARBON CONSTRUCTION AND MANUFACTURE

Developing energy and sustainability guidelines for construction and development

The City will examine local, national and international actions and programs for lowering carbon emissions in building, development and manufacture.

Options include: leading by example and reporting on successes in the City's own developments; encouraging and increasing awareness of adaptive-reuse of materials; developing guidelines and recommendations for low-carbon concrete and other materials; developing stronger partnerships with local, national and international groups (such as one of the sustainability ratings groups), or joining the Fab City Global Initiative, which prioritises global connectivity but local design, production and manufacturing.

TIMEFRAME: Medium
ACTIVITY TYPE: Guidelines

GOV-10 LOCAL GOVERNMENT COLLABORATIONS

Building inter-council knowledge and understanding.

In conjunction with the Hobart City Deal working groups, we will build on and improve the capacity for councils to collaborate in regional planning, transport links, data and information sharing, and creating a more sustainable southern Tasmania.

The City will continue to work towards climate safe and smart outcomes across southern Tasmania in the delivery of the work program for the Southern Tasmanian Councils Authority's Regional Climate Change Initiative, by developing a Regional Climate Strategy (mitigation and adaptation), Council Climate Action Plans and a Regional Coastal Hazards Strategy.

TIMEFRAME: Short

ACTIVITY TYPE: Engagement, Research, Publication

GOV-11 INFILL DEVELOPMENT

Encouraging low-impact development to activate spaces.

Building is a major contributor to energy use and greenhouse gas emissions and the City will encourage low-impact development to activate spaces that are poorly utilised.

Many 'infill' spaces are difficult to use for traditional retail activities that are nevertheless perfectly suited to small pop-up developments. Such developments may require rethinking aspects of planning, but there are endless ways to activate them: as fun, quirky, and even temporary venues that may require only a paint-job, minimal lighting, a few tables, a power supply and an eftpos machine; as a venue for a hacker space; as a temporary cinema; as an art gallery; or as a homeless shelter.

TIMEFRAME: Short–Medium

ACTIVITY TYPE: Small Infrastructure, IoT

GOV-12 OTHER CITY PROJECTS

Programs and actions developed under the *Capital City Strategic Plan* and various other divisional strategies.

TIMEFRAME: Short–Medium

ACTIVITY TYPE: Small Infrastructure, IoT

Glossary

Action plan

A detailed plan outlining the specific actions that will be taken to meet a goal or goals.

Adaptation

Ways that we seek to moderate or avoid harm from changes in climate risks and hazards. Adaptation is when we change our behaviour or the way that we live to avoid or accommodate increased natural hazards and risks.

Buffer zone

An area of land designated for environmental protection, usually around development.

Carbon dioxide equivalent (CO₂-e)

An internationally accepted measure that encapsulates all greenhouse gases based on their global warming potential. Different greenhouse gases have different warming potential.

Carbon emissions

The release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time. The term carbon emissions is used interchangeably with the term greenhouse gas emissions.

Climate Models

Models that use quantitative methods to simulate the interactions of the important drivers of the earth's climate systems.

Climate resilience

The capacity to maintain function in the face of external pressures by climate change and the ability to evolve to new situations brought on by climate change.

Community vision

The City's highest-level strategic document, called *Hobart: A community vision for our island capital*. It articulates community values about and aspirations for Hobart now and into the future based on in-depth engagement. The vision is critical for ensuring that the City's work aligns with what is important to Hobart communities.

Framework

A structure and system used to guide planning, decision-making and implementation.

Gigawatt hour (GWh)

A unit of electrical energy equal to one million kilowatt hours, or about the energy output of a large coal-fired power station per hour.

The Global Covenant of Mayors

A global coalition of city leaders addressing climate change by pledging to cut greenhouse gas emissions and prepare for the future impacts of climate change.

Greenhouse gas emissions

The release of greenhouse gases into the atmosphere. A greenhouse gas is an atmospheric gas that absorbs and emits infrared or heat radiation, giving rise to the greenhouse effect. Typical greenhouse gases include carbon dioxide, methane, nitrous oxide and refrigerants. The term carbon emissions is used interchangeably with the term greenhouse gas emissions.

Kilowatt hour (kWh)

The amount of energy used by a one kilowatt appliance (say, an average toaster) in one hour. It costs you about 25 cents to use one kWh.

LoRaWAN (LoRa)

Long Range Wide Area Network. A LoRa network is a low-cost (essentially free) method of transmitting small packets of data across very long distances. It is ideal for environmental sensors and other remote devices that operate on ultra-low power, lasting for many years on a single battery charge. To transmit using the 4G mobile phone network allows higher data transfer rates, but with significantly higher financial costs per device, requiring far more power.

Low carbon economy

An economy based on low carbon power sources that has a minimal output of greenhouse gas emissions.

Megawatt (MW)

A unit of power equal to one million joules per second (about the power output of 10 car engines, or one vintage Spitfire engine).

Mitigation

Climate change mitigation generally involves reductions in greenhouse gas emissions.

Pillars

The major aspects of city life, used in the community vision and the strategic plan.

Precinct

A specified area in a town that is designed or reserved for a common purpose, such as industry or recreation.

Programs

A group of projects or initiatives about the same general topic.

Regional Climate Change Initiative

Provides a source of independent and pragmatic science-based climate change information and advice to Tasmanian local government in the southern region and to encourage collaborative action.

Renewable energy

Energy that comes from resources that are naturally replenished on a human timescale such as sunlight, wind, rain, tides, waves, and geothermal heat.

Southern Tasmanian Councils Authority

A regional organisation of councils established to facilitate cooperative working partnerships and to take joint action to address regional development issues and progress sustainable economic, environmental and social outcomes for southern Tasmania, its local communities and the State.

Strategic drivers

The forces shaping the direction an organisation chooses to take.

Strategic plan

The City of Hobart's primary planning document, outlining the outcomes we aim to achieve over a 10-year period, in response to the community vision. It is required under the *Local Government Act 1993* and must be reviewed every four years.

Sustainable development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Reference documents informing this Action Plan

Council documents

- Hobart Street Tree Strategy 2017
- Stormwater Strategy 2012–17
- Energy and Greenhouse Action Plan 2018–20
- Hobart Corporate Climate Adaptation Plan 2013–16
- Waste Management Strategy 2030
- Biodiversity Strategy 2018
- Bushfire Management Strategy 2014
- Connected Hobart Framework and Action Plan (2019)
- Transport Strategy (draft) 2019
- Social Inclusion Strategy 2014–2019
- Emergency Management Plan
- Investment of Council Funds Policy
- Climate Change Adaptation Policy
- Resilient Hobart program
- Grants and funding program
- Strategic Risk Register
- Asset Management Strategy
- The City's Greenhouse Gas Emissions and Energy Use Annual Report
- City of Hobart Responding to Climate Change

State Government documents

- State Government Climate Change Action Plan 2017–21
- Southern Tasmania Regional Land Use Strategy 2010–35
- Regional Councils Climate Change Adaptation Strategy 2013–20
- The Energy Strategy – Restoring Tasmania's Energy Advantage 2015
- Local Government Act (Content of Plans and Strategies) Order 2014 Section 70F LGA (Tas) S. 8 Asset Management Policy (2) (b) (vii) planning for climate change adaptation and mitigation
- Draft Tasmanian Renewable Energy Action Plan Nov 2019



CITY OF HOBART

Town Hall, 50 Macquarie Street
Hobart Tasmania 7000

T (03) 6238 2711

F (03) 6238 2186

E coh@hobartcity.com.au

W hobartcity.com.au