City of Casey

CLIMATE RESILIENT CASEY
2024-2030

Creating a safe, connected, and resilient Casey, where Council and the community are climate ready and better prepared together.



Acknowledgement of Country

The City of Casey proudly acknowledges the Traditional Owners, Casey's Aboriginal communities and their rich culture and pays respect to their Elders past, present and future. We acknowledge Aboriginal people as Australia's first peoples and as the traditional owners and custodians of the land on which we work and live.

Our Statement of Acknowledgement recognises that we value the unique status of Aboriginal peoples as the original owners and custodians of this land and waters. It is one step on the path to reconciliation.

Diversity Statement

The City of Casey is home to a remarkable diversity of cultures, languages, faiths, identities, landscapes, and stories. From our first Australians to our most recent arrivals and every wave between, the City of Casey welcomes and represents all community members and their respective ambitions to live healthy, rewarding, and happy lives. These intersecting and overlapping community stories form Casey's collective identity and contribute to its evolving, rich history. We recognise this diversity as our strength and we aim to share, nurture, and celebrate it.

Interpreter

TIS: 131450 (Translating and Interpreting Service)

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EXECUTIVE SUMMARY

Climate Resilient Casey 2024-2030 aims to provide a roadmap for a safer, connected, and more resilient Casey, where Council and the community are climate ready and better prepared together.

Climate change is here, and it is going to get worse before it gets better. The world is experiencing rising temperatures, shifting weather patterns, and an increase in extreme weather events.

All levels of government, businesses, and communities are coming together to take action that will limit global warming, while we prepare for and adapt to the ongoing impacts of climate change. This plan is guided by a range of Australian Federal Government and Victorian State Government policies, strategies, and legislation, including the National Climate Resilience and Adaptation Strategy, the Victorian Climate Change Act 2017, and the Local Government Act 2020. All of which guide local government decisions and action in responding to climate change.

The City of Casey is committed to supporting a climate-ready city through climate change mitigation and adaptation. Acting on climate change is fundamental to achieving the Casey's Community Vision to become a more connected, bold, and resilient community.

Casey is already facing climate-related impacts, such as heatwaves, storms, bushfires, and flooding. These shocks are exacerbated by underlying chronic stressors like housing affordability and rising social inequity. Understanding the intersection of acute shocks and chronic stresses is critical to developing effective resilience strategies. Climate resilience is our capacity to adapt, survive and thrive in the face of climate hazards.

Building our resilience to climate change impacts offers multiple benefits. It enhances our ability to **adapt**, **survive, and thrive** despite the **chronic stresses** and **acute shocks** we face.

Awareness of these challenges allows for better preparation and response. Actions that boost climate resilience also improve liveability in our neighbourhoods and homes and overall quality of life. Resilience is about finding win-win solutions.



The plan is structured around four interconnected strategic objectives:

Nature and Biodiversity:
Ensuring thriving natural ecosystems alongside urban growth and climate change.

Council Infrastructure, Assets, and Services:
Adapting and maintaining infrastructure and services to meet the needs of a growing population in a changing climate.

Community Wellbeing and Resilience:
Enhancing the resilience and well-being of Casey's diverse communities.

Planning for a Safe Future:
Shaping neighbourhoods and the built environment to be safe and liveable in a changing climate.

Many of the actions in the plan apply across all four objectives and have been developed to help Council and the community adapt, survive, thrive in the changing climate, while embedding climate resilience into planning, design, and service delivery.

Some of the key actions outlined for the next three years include:

- Investing in greening to increase local biodiversity, cool the urban environment, and enhance carbon sequestration.
- Updating Council policies to prioritise climate-resilient infrastructure and indigenous planting.
- Enhancing stormwater management and promoting water reuse.
- Expanding community programs like Gardens for Wildlife and Heat Safe Casey.
- Investigating off-grid solar and battery systems in key Council facilities to ensure operational continuity during power blackouts.
- Advocating for improved planning and building standards to account for future climate risks.

Climate Resilient Casey 2024-2030 aims to build the adaptive capacity of Council and the broader community by articulating and integrating environmental, infrastructure, and community considerations. It emphasises the importance of collective action and continuous adaptation to safeguard the future of the Casey community against climate impacts.



OUR CLIMATE IS CHANGING

Climate change is already here. The world is experiencing rising temperatures, shifts in the seasons, an increasing frequency of extreme weather events, and slow onset events like sea level rise, desertification, ocean acidification and salinisation. We need to drastically reduce our greenhouse gas emissions that are causing climate change – globally, nationally, and locally – while we adapt, and build our resilience to the change we are already facing. The faster the climate changes and the longer adaptation efforts are put off, the more difficult and expensive responding to climate change will be.

How hot is too hot?

The Paris Agreement is a **legally binding international climate change treaty** adopted by 196 Parties, including Australia, at the UN Climate Change Conference (COP21) in Paris, France, in 2015. Its overarching goal is to hold *"the increase in the global average temperature to well below 2°C above pre-industrial levels" and pursue efforts "to limit the temperature increase to 1.5°C above pre-industrial levels."*

We are not on track.

The Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) in 1988 to prepare comprehensive assessment reports on climate change, its causes, impacts and response options.

The latest IPCC Synthesis Report (AR6 released in 2023) highlights:

- Human activities, mainly greenhouse gas emissions, have caused global warming, with average temperatures rising by 1.1°C from 1850-1900 to 2011-2020.
- Greenhouse gas emissions continue to increase due to unsustainable energy use, land use changes, and consumption patterns.
- Climate change has led to rapid alterations in the atmosphere, oceans, cryosphere, and biosphere, causing adverse impacts on weather, climate extremes, nature, and people.
- Vulnerable communities, who have contributed the least to climate change, are the most affected.
- Ongoing emissions will likely lead to a 1.5°C temperature rise, worsening multiple hazards.
- Significant reductions in emissions could slow global warming within two decades and improve atmospheric conditions in a few years.
- Currently effective adaptation measures will become less viable as global warming increases, leading to more significant losses and reaching adaptation limits.
- Climate change threatens human well-being and planetary health, with a shrinking window to secure a sustainable future.



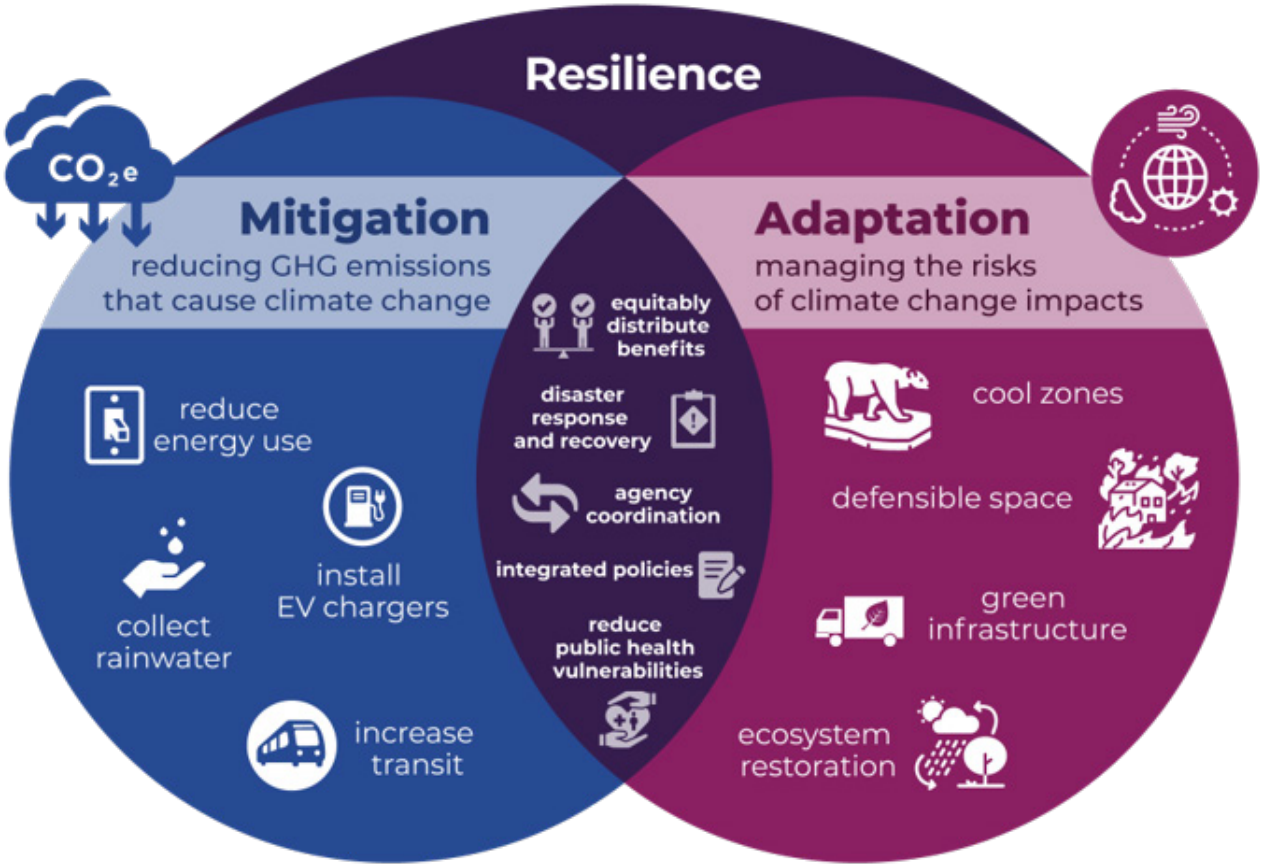


Figure 1: The relationship between climate resilience, mitigation and adaptation (Image source: San Diego Association of Governments).

Climate mitigation is the action we take to limit changes in global temperature increases caused by human activities. Commonly also referred to as emissions reduction activities.

Climate adaptation is the process of adjusting to the actual or expected changes in climate to reduce or avoid climate impacts.

Climate resilience is our capacity to adapt, survive and thrive in the face of climate hazards.

Resilience is about being prepared for the unexpected and having robust, flexible systems with spare capacity for disruption. It's also about the social capital and community networks that support our communities in time of need. Adaptation is about reducing our exposure to future shocks and stresses – doing things differently.

Building our resilience to climate change impacts offers multiple benefits. It enhances our ability to **adapt**, **survive, and thrive** despite the **chronic stresses** and **acute shocks** we face.

Awareness of these challenges allows for better preparation and response. Actions that boost climate resilience also improve liveability in our neighbourhoods and homes and overall quality of life. Resilience is about finding win-win solutions.



CHRONIC STRESSES



ACUTE SHOCKS

Climate change impacts are often experienced as **acute shocks**; those sudden disruptive events that take us by surprise like heatwaves, storms, floods, and bushfires.

Other impacts of climate change are slow-burning **chronic stresses** like sea level rise and drought and though not as dramatic as shocks, they weaken the fabric of our society on a day-to-day basis.

Chronic stresses also refer to underlying social issues that hinder our ability to prepare for, respond to and recover from acute shocks – things like rising social inequity, housing unaffordability, family violence and inadequate public transport. Our changing climate exacerbates existing vulnerabilities and creates new threats to our natural systems, communities, economy, and built environment.

Understanding the interconnection between acute shocks and chronic stresses can help us design solutions that build resilience for everyone.



LEGISLATIVE DRIVERS FOR CLIMATE RESILIENT CASEY

Local governments in Victoria are guided by a suite of federal and state legislation, policies and frameworks for climate mitigation, adaptation, and resilience.

Australian Government

In Australia, the Federal Government has the greatest opportunity, and legislative powers, to tackle climate change on a systemic level and build a climate-proof future for all Australians.

The National Climate Resilience and Adaptation Strategy (due to be renewed in 2025) provides a framework for national action on climate adaptation, emphasising the role of all levels of government, businesses, and communities in building resilience to climate impacts. It highlights five areas of focus, all of which rely on support from local government to deliver:

1) Understanding and Communicating Climate Risks
2) Building Resilient Systems
3) Supporting Resilient Communities
4) Economic Resilience
5) Governance and Partnerships

The National Health and Climate Strategy was launched at COP28 and aims to protect and promote population health in the face of increasing climate challenges. It focuses on enhancing the health system's resilience to climate-related stresses, promoting public health through climate adaptation, and reducing the health sector's greenhouse gas emissions. Key actions include supporting climate risk assessments, improving healthcare infrastructure, and integrating climate considerations into health policies.

The Australian Government has also launched the Nature Positive Plan, with a goal of zero new extinctions and a commitment to protect 30% of Australia's land and seas by 2030. The Plan also calls for the creation of a nature repair market to leverage private investment to help regenerate our natural systems.

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is the central piece of environmental legislation in Australia. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities, and heritage places — defined in the Act as matters of national environmental significance. This includes considerations of climate change impacts on protected species and ecosystems.

The National Disaster Risk Reduction Framework and associated funding programs support local governments in preparing for and mitigating natural disasters, which are increasingly influenced by climate change.



VICTORIAN GOVERNMENT

A series of state-level legislation, policy, and frameworks guide local government in exercising their functions to manage foreseeable risks. While this has long been implied through the Planning and Environment Act 1987 (Vic), establishing the Victorian Climate Change Act 2017 strengthened and formalised local government responsibilities around climate change mitigation and adaptation. The Local Government Act 2020 takes this further again, directing local Councils to address climate change through strategic planning, governance, and community engagement.

The Victorian Public Health and Wellbeing Plan 2023–2027 identifies tackling climate change and its impacts on health as a top 10 priority, and sets out strategies to respond. It supports the directive for Council's to integrate climate adaptation considerations into their Municipal Public Health and Wellbeing Plans and other local policies.

The intersection between climate change, public health, and emergency management has been recognised at the State level. Emergency Management Victoria's vision and impact statement identifies that climate change is a primary factor that is changing Victoria's risk profile. The Strategic Roadmap for Emergency Management in Victoria 2022–28 sets out a pathway to strengthen emergency management responses, alongside climate change adaptation efforts, and investment in reducing the risk exposure of state-wide infrastructure and systems.

These legislative drivers provide a comprehensive framework that empowers local governments in Victoria and across Australia to take proactive and coordinated actions to adapt to the impacts of climate change.



Image: Blind Bight Foreshore Reserve, Anchorage Drive, Blind Bight.

CLIMATE CHANGE IN CASEY

Council and our community are already experiencing the impacts of climate change and it's going to get worse before it gets better. Globally, we have passed the tipping point where we can solve or prevent any climate change. Our task now is to protect our places and communities from the impacts of climate change, and to continue reducing emissions as quickly as possible to limit any further warming.

If you find climate change overwhelming, you're not alone. It feels big because it is. The best antidote to these feelings is to do meaningful work together and take action to adapt to and build resilience to future challenges.

Climate change poses a risk to all communities within the City of Casey. Casey is already experiencing **acute shocks** in the form of heatwaves, storms, bushfires, and major flooding made more intense and frequent by climate change.

The entire community are experiencing escalating impacts related to increasing temperatures and heatwaves. Some geographic communities in Casey face greater exposure to climate-related risks due to their proximity to hazard-prone areas, such as bushfire-prone zones, floodplains, and the coast.

Climate-induced **chronic stresses** for the City of Casey include sea level rise, rising temperatures, and possible future drought. Compounding the impact of acute shocks for Casey communities are societal chronic stresses like housing affordability, increasing cost of living, family violence, mental health issues, and psychological distress.



THE PAST FIVE YEARS IN CASEY – EXTREME WEATHER EVENTS

The City of Casey has experienced a number of extreme weather events over the past five years.
These events have included heatwaves, flooding, storm damage, and bushfire.

Table 1: Extreme weather events in the City of Casey 2019 – 2023.

Year	Category	Description
2023	**Heatwave**	Six days over 35°C and 17 February was 41.4°C
2022	**Flooding**	October – November: Flooding across Victoria, with parts of Hallam, South Gippsland Highway, and Tooradin cut off. The single access road in and out of the Casey Greens Estate was at risk of being cut off. Hallam train station was also impacted.
	Storm/flood	January: Storm resulting in flash flooding across Casey. Several residential properties were damaged, with 60 State Emergency Service (SES) requests made.
2021	**Storm**	October: High winds resulting in building damage, fallen trees, traffic hazards, and trapped community members. 240 SES assistance requests were made on the day, with 400 requests made across a three-day period.
	Storm	June: Storm causing fallen trees, traffic hazards, and building damage, with 200 requests made to SES over the two-day period. Several suburbs were impacted across the City of Casey. Council lodged 32 storm claims associated with this event, reporting damage and destruction to property.
2020	**Storm**	February: Storm event and flooding damaged several residential properties. 80 SES requests were made.
	Heatwave	Six days over 35°C and 31 January was 43.7°C
2019	**Storm**	January: Storm event across the City of Casey resulting in building damage, fallen trees, and traffic hazards. 150 SES assistance requests were made.
	Heatwave	15 days over 35°C, seven days over 40°C and 4 of January 43.8°C
	Bushfire	'Black Summer' bushfires caused extensive damage across south-eastern Australia. Casey's relief centre staff and Environmental Health Officers were deployed as assistance.

UNDERSTANDING OUR CLIMATE HAZARDS AND RISKS

The City of Casey recognises climate change as a serious and unavoidable challenge. To address this challenge, the Council has committed to supporting a climate-ready city through climate change mitigation and adaptation under the Council Plan 2021 – 2025.

Undertaking a comprehensive assessment of climate change impacts and risks is a crucial step to understand the level of impact, prioritise effective climate action, and ensure stakeholder buy-in and support. Assessing Casey's climate risks is also essential for meeting the City of Casey's legislative obligations under the Local Government Act 2020.

In 2023, the City of Casey undertook an independent Climate Change Risk Assessment to better understand:

- How the climate is expected to change between now and 2090 in the City of Casey;
- How projected changes in the climate may affect the City of Casey services, infrastructure, natural environment, and community into the future; and
- Identify priority risks associated with the changing climate for the City of Casey.

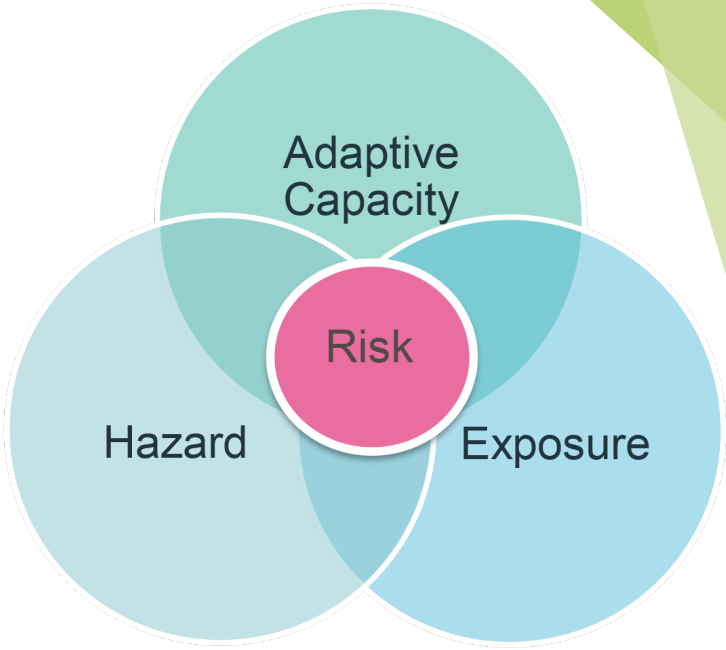
The independent Risk Assessment adhered to the Australian Standard (AS) 5334-2013 climate change adaptation for settlements and infrastructure – a risk-based approach, and the findings are based on a comprehensive approach that included desktop research, spatial analysis of existing hazards and Council asset datasets, plus stakeholder consultation with key Council staff.

The Climate Change Risk Assessment provides a strong evidence-based approach for the Climate Resilient Casey Plan.

Identifying climate hazards impacting the City of Casey, then determining the most likely risks and consequences of those risks, informs the adaptive capacity required to build resilience.

Adaptive capacity is the ability of a system, region, or community to adapt to the impacts of climate change.

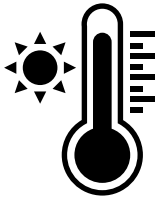
It is important to remember that risk is a function of hazard and exposure. Risk can be minimised by building adaptive capacity. The actions identified within Climate Resilient Casey Plan, aim to do just this.



CLIMATE HAZARDS FOR THE CITY OF CASEY

The Climate Change Risk Assessment used the IPCC high emissions scenario 'RCP 8.5' (representative concentration pathway 8.5) which is the most likely scenario given current global emissions trajectories. RCP 8.5 assumes global emissions will continue to track as per present day conditions. It found that the City of Casey is projected to see the following changes to its local climate over the coming decades up to 2100.

It is more likely that these hazards will not be isolated, and will occur at the same time, which compounds the risks and likely impacts.



Heat

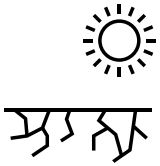
Average annual surface temperature to increase by +4.0°C by the end of the century.

Average number of hot days per annum (over 35°C) to increase from 7.2 (historic baseline) to +20 days by 2050- and 37-days a year by 2090.



Flooding

The number of wet days (>10mm) is projected to increase by +11 days by 2090 from a baseline of 19 days a year.



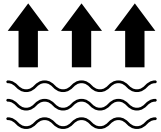
Drought

Duration of time in extreme drought for the region could increase significantly to 69 months by 2090.



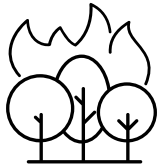
Storm

The changing variables associated with storm weather indicate an increase in the number of severe thunderstorm days.



Sea Level Rise

Sea level rise in the upper of 0.81m by the end of the century.



Bushfire

A 100% increase in the number of severe fire danger days by 2090.

Each of these hazards pose risks to infrastructure and services, nature and natural systems, and the livelihood and wellbeing of the Casey community. These risks are outlined in the table below.

Table 2: Identified climate hazards and risks for the City of Casey

Climate Hazard	Climate Hazard description	Climate risk	Climate Risk Description
EXTREME HEAT 	*The number of days over 35°C is projected to increase by 37 days by 2090 (from 7 days as per baseline period). Frost days are projected to decrease by 4 days by 2050 and further by 1 day by 2090 from an average of 8 days per year.*	*Infrastructure and services*	One of the most immediate effects of extreme heat, is the stress it places on infrastructure, such as roads and bridges, accelerating wear and tear. Prolonged exposure to extreme heat can cause road surfaces to degrade faster, resulting in costly repairs and maintenance. Additionally, high temperatures can place additional strain essential utilities like water supply systems and power grids, leading to potential service disruptions and increased demand for cooling systems.
		Community	Extreme heat can lead to increased hospitalisations and death. These impacts aren't felt evenly – there are more heat-related deaths among older people (65+), people experiencing homelessness, those experiencing financial distress, and those with complex health conditions. Extreme heat also makes it harder for us to carry out our day-to-day activities. Working outdoors, playing sport, even being inside without air conditioning can be a struggle on very hot days.
		Nature and natural systems	Extreme heat also has significant impact on our flora and fauna - for example impacting breeding seasons for some species, a loss of canopy cover and difficulty bringing new trees to maturity due to extreme heat and associated water shortages.
BUSHFIRES AND AIR QUALITY 	*The number of severe fire danger days are expected to increase by 100% by 2090.*	*Infrastructure*	Bushfires present a significant threat to Council assets by damaging the public infrastructure, including roads, bridges and buildings, and posing immediate safety concerns for residents and emergency responders. The financial burden of post-fire recovery efforts can be substantial. Furthermore, the City of Casey owns several parcels of bushland within these areas of bushfire risk.
		Community	The danger resulting from bushfire can be extreme and the impact of not evacuating early can result in death. The smoke and ash generated by bushfires affects air quality, leading to health risks for our community – from respiratory issues to death. The Casey communities identified in the Municipal Emergency Management Plan as being at high risk of bushfire include parts of Cranbourne, Cranbourne South, Pearcedale, Warneet, Blind Bight, Cannons Creek, Tooradin, Botanic Ridge, Harkaway, Lysterfield South, and Junction Village. In addition, the loss of property can be deeply traumatic, disruptive, and it can take a long time for a community to recover from the impact, particularly if homes are underinsured or not insured.
		Nature and natural systems	The loss of vegetation due to bushfires can result in increased risk of soil erosion and landslides, potentially damaging critical infrastructure like water supply systems and roads.

Climate Hazard	Climate Hazard description	Climate risk	Climate Risk Description
STORM WEATHER 	*Severe thunderstorm days are likely to increase by 22% for Victoria by 2100. Storms are also predicted to increase.*	*Infrastructure and services*	Severe storms, accompanied by hail and lightning, can have a profound impact on Council assets. High winds during storms can lead to widespread damage to public infrastructure, including buildings, roads, and utility lines, often resulting in extensive repair costs.
		Community	Damage to homes (and risks associated with increased insurance costs or uninsurability), inability to access essential services or commute to places of employment during extreme storm weather.
		Nature and natural systems	Severe storms have serious environmental impacts to waterways, native vegetation and habitat for animals from more intense storm events.
RAINFALL AND FLOODING 	*Extreme rainfall events are expected to increase to 2090. The number of wet days (>10mm) is projected to increase by 13 days by 2050 and 11 days by 2090 from a baseline of 19 days. Sea level rise is also expected to increase flooding*	*Infrastructure and services*	Extreme rainfall and flooding pose a significant and multifaceted threat to Council assets. When heavy rainfall surges lead to flooding, critical infrastructure such as roads, bridges, and drainage systems can suffer extensive damage, disrupting transportation networks and impeding emergency response efforts. Floodwaters can infiltrate public buildings, electrical and utility facilities, causing electrical failures, structural damage, and contamination. Waterlogged sewer systems can lead to sanitation issues and public and environmental health concerns. Recurring floods strain Council budgets as they require substantial investment in recovery and mitigation efforts
		Community	The community will also experience property loss and damage, impact on the capacity to travel, disruption of supply chains leading to reduced access to fresh and healthy food as well as negative health impacts associated with reduced water quality and increase of insect, water, and food borne pathogens.
		Nature and natural systems	The erosion of riverbanks and watercourses during flooding can threaten the stability of nearby infrastructure.
COASTAL HAZARDS 	*Coastal hazard exposure is projected to increase for the City of Casey Council region, with changes in wave action, storm activity and sea level rise associated with climate change.*	*Infrastructure and services*	The Casey Coastal Framework identifies risks to transport infrastructure, buildings, utilities such as electricity networks, drainage, sewage as well as service disruption due to increased risk of inundation and coastal erosion.
		Community	Casey communities on the coast face risk of storm tide inundation, long-term erosion, or permanent inundation due to sea-level rise. Over four thousand people reside in Casey's coastal areas (and likely to experience the greatest impacts).
		Nature and natural systems	Conservation areas, protected landscapes, and environmental values (including, saltmarsh, mangrove, and coastal bird habitats) are primarily at risk of erosion and inundation, with risks increasing between present day and 2100.

Refer to Appendix 1 for specific climate risks to Casey rated as High to Very High by year 2090.

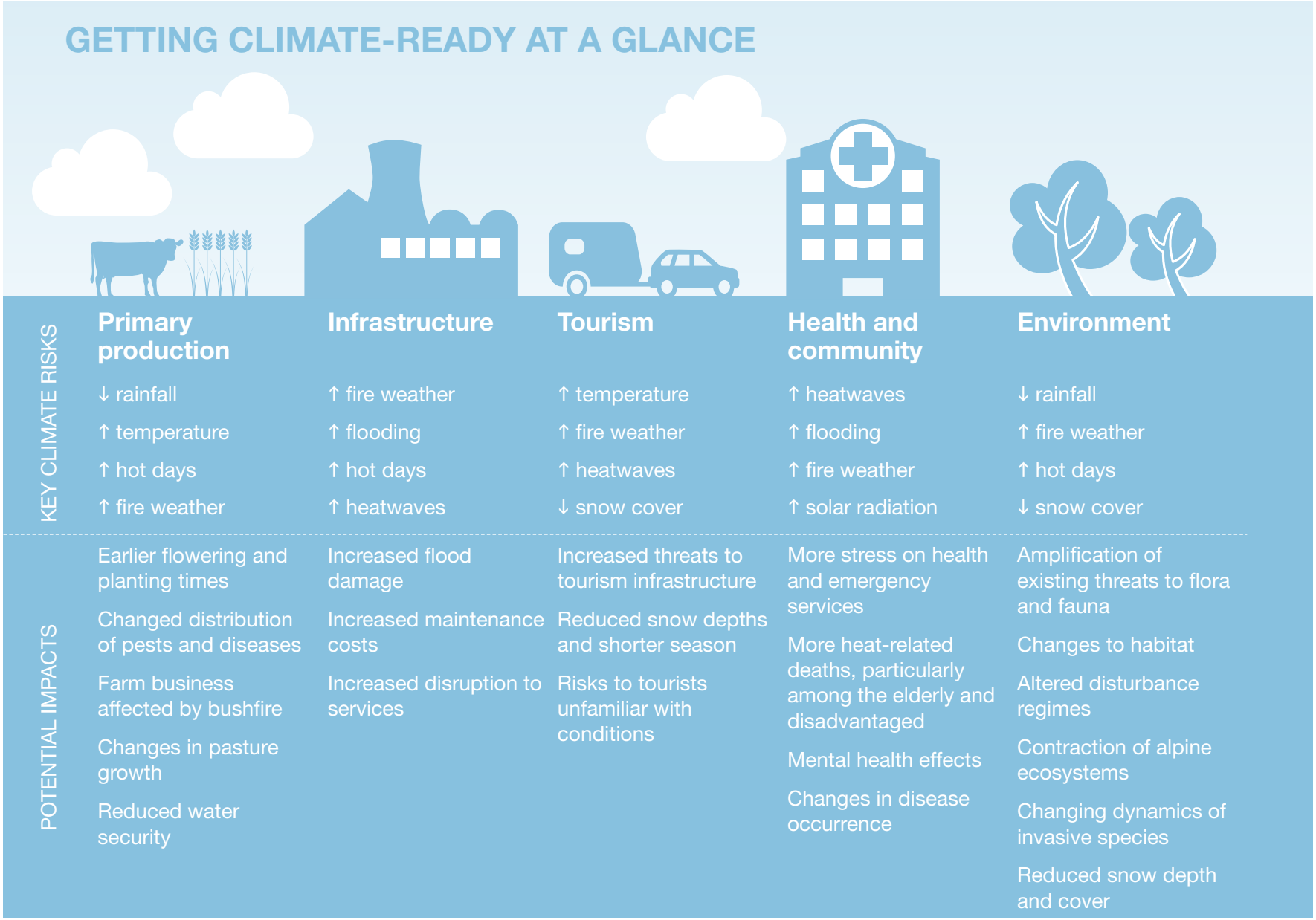


Figure 2: The Victorian Government's Climate Ready Victoria fact sheet highlights the key risks and hazards of climate change describes the impacts on sectors of our economy and community.

CLIMATE RESILIENCE FOR US ALL

The climate risks faced by homes, businesses, infrastructure, natural places, and communities are due to the extent of exposure to climate hazards and adaptive capacity. Stronger adaptive capacity increases our ability to mitigate or cope with climate risks.

While climate change impacts all communities, it is unevenly distributed, disproportionately affecting communities who are already at-risk. Existing chronic stresses exacerbate the impacts of acute shocks, eroding adaptive capacity. Disadvantaged or marginalised communities are most at risk due to fewer resources to cope, adapt, and recover. Building climate resilience for everyone requires understanding local strengths and stresses.

Research tells us that the following demographic variables are likely to heighten climate-related risk:[i]

- **Age:** children, young people, and older people
- **Gender:** women are more likely at risk
- **Socioeconomic status:** the financially disadvantaged, experiencing or at risk of homelessness.
- **People living with a disability.**
- **Ethnicity or linguistic backgrounds:** individuals from culturally and linguistically diverse backgrounds
- **Indigenous populations:** some indigenous communities
- **Substance abuse:** people with alcohol and drug addictions
- **Family violence:** particularly for women and children
- **Health conditions:** people with chronic health problems or high-care needs

The City of Casey faces unique challenges in building climate resilience, with significant parts of the community experiencing heightened climate-related risk:

- The City of Casey has a large and rapidly growing population. The population is projected to reach 574,124 residents by 2046.
- Casey has a diverse community with over 42% of Casey's population born overseas, well above the 35.7% average for Greater Melbourne.
- The City of Casey experiences a higher-than-average level of socioeconomic disadvantage compared to the Victorian average, ranking 36th most disadvantaged relative to Victoria's 80 LGAs on the Socio-Economic Indexes for Areas (SEIFA, Index of Relative Socioeconomic Disadvantage).
- By 2041, Casey's population of those aged 55 years or over will increase by almost 60% – which will account for 22% of Casey's total population.[ii]
- Unfortunately, Casey ranked highest for family violence incidents in Victoria in the year ending March 2023, with a total of 5417 reported cases.[iii]
- In 2021, 5.2% of the Casey population reported needing support in their daily lives due to living with a disability.
- 16% of the population experience mortgage stress, and 28% experience rental stress (2021).[iv]

Climate change also pushes otherwise stable people into vulnerability by devaluing their assets, causing job losses, exacerbating underlying health conditions, and increasing their responsibilities.

Climate change doesn't just impact the already disadvantaged and marginalised, it actively increases their number.



CLIMATE ACTION IN CASEY



340kW rooftop solar system on Casey ARC, Narre Warren.

The City of Casey has been implementing actions to protect the natural environment and mitigate against climate change for many years through the Environment Strategy and the Climate Action Plan. The Climate Action Plan 2022-2030 and maps Council's strategic direction towards achieving our net zero emissions targets.

Between 2015 and 2022, Council reduced greenhouse gas emissions from its own operations by 59%, primarily through upgrading streetlighting to LEDs and switching streetlighting to renewable energy through a Power Purchase Agreement (PPA).[v] From 1 July 2025, the City of Casey will be joining 51 other Councils as part of the Victorian Energy Collaboration (VECO). VECO is the largest emissions reduction project ever undertaken by the local government sector in Australia and will provide cost-effective renewable energy generated by Victorian wind farms for the remaining electricity supply for Council's operations through a renewable energy PPA. Electricity usage makes up approximately 73% (around 11,000 tonnes of CO2) of Council's greenhouse gas emissions profile.

Through delivery of the Climate Action Plan Council aims to achieve net zero emissions by in its own operations by 2030 (and 2040 for the Casey community). These ambitions align with the South East Councils Climate Change Alliance (SECCCA) targets and Greater South East Melbourne (GSEM) Zero Emissions Roadmap.

Some of the ways Council is addressing climate changes include:

- Replacing approximately 8,152 mercury vapour decorative streetlights in parks, open spaces, and reserves with LEDs.
- The installation of solar PV and battery storage systems on Council buildings.
- Adding fully electric vehicles to our fleet.
- Improving the energy and water efficiency of our buildings and infrastructure.
- Transitioning gas-consuming buildings to all electric.
- Ensuring that all new and fully refurbished Council buildings have environmentally sustainable design (ESD) features to minimise energy and water consumption and costs.

Council is also supporting and empowering the Casey community to reach net zero emissions by 2040 through a number of initiatives, including:

- Access to Solar Savers, a local government initiative helping residents and business owners in Casey cut their power bills and their carbon footprint by installing solar.
- Access to energy and water efficiency home audit kits and induction cooktops, which can be borrowed for free from Connected Libraries.
- Access to a $200 household energy efficiency rebate to reduce energy costs and improve thermal comfort.
- Access to Business Energy Savers, a program assisting Casey businesses to upgrade inefficient appliances and lighting through the Victorian Energy Upgrades (VEU) subsidy program.



Fully electric Council fleet vehicle.

BUILDING CASEY'S CLIMATE RESILIENCE

The aim of resilience-building is to create places that are socially equitable, inclusive, and cohesive, with affordable, energy-efficient housing, diverse economic activity, and safe, walkable neighbourhoods where people can access open space, public transport, employment, education, and services. Resilience-building should also ensure that infrastructure meets basic needs, ecosystems are functioning, natural resources are used sustainably, land use policy is coherent and future-focused, government leadership and management is transparent and strategic, and innovation is encouraged.

A resilient city is prepared for and prevents expected and unexpected shocks and stresses.

The Climate Resilient Casey Plan has been informed by the likely climate hazards and priority risks identified by an independent Climate Change Risk Assessment. The priority risks provide the greatest opportunities for Casey to create local climate resilience and be better prepared for the local changing climate.

Four strategic objectives will govern the approach for the City of Casey to take action to adapt, survive, and thrive in the face of its climate challenges. The strategic objectives are not mutually exclusive – they are interconnected.

Climate Resilient Casey's Strategic Objectives

Nature and Biodiversity

Enable a thriving natural environment and biodiversity alongside a rapidly growing population and changing climate.

Council Infrastructure, Assets and Services

Deliver, maintain, and adapt Council's infrastructure, assets, and services to meet the needs of a growing population in a changing climate.

Community Wellbeing and Resilience

Strengthen the well-being and resilience of our diverse communities so that we are better prepared together for the challenges of a changing climate.

Planning for a safe future

Shape and adapt our neighbourhoods and built environment to enable safer and more liveable communities in a changing climate.



Nature and Biodiversity – ***Enable a thriving natural environment and biodiversity alongside a rapidly growing population and changing climate.***

An overview the natural environment in Casey

Casey is home to a diverse landscape of forested, wetland, and coastal environments from the foothills of the Dandenong Ranges to mangroves and saltmarsh of Westernport Bay. Casey has a fragmented landscape due to past land use practices such as agriculture which has impact biodiversity through habitat loss and fragmentation. Casey hosts a diverse range of native vegetation types including Lowland Forest, Riparian Forest, Heathy Woodland, Swamp Scrub, Plains Grassy Wetland, Coastal Saltmarsh and Mangrove Shrubland.

Casey has 33 actively managed bushland reserves covering 174 hectares, with each reserve playing a critical role in conserving native vegetation and providing habitat for animals. These bushland reserves are home to a range of threatened species including the Southern Brown Bandicoot and Growling Grass Frog. Bushland reserves contribute to the rural feel of Casey and play an important role in community health and wellbeing.

In addition, Casey is home to watercourses and wetlands that provide important aquatic habitats for a range of species, including those listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) such as the Dwarf Galaxias and Australian Grayling. Water management is a core priority for Casey, and these aquatic habitats play an important role in ecosystem function, water treatment and stream health.

Less than 7% native vegetation cover remains in Casey. Biodiversity hotspots in Casey include Cranbourne South, Harkaway, and Warneet.

Why is this objective important?

The natural environment is an important ally in building climate resilience, and biodiversity is vital. It ensures the integrity of our ecosystems and helps us adapt – buffering us from climate extremes, protecting our soils, regulating temperatures and our hydrological cycles, and reducing food insecurity. Biodiverse places provide a wide range of ecosystem services, which are the direct and indirect contributions to human wellbeing by the natural environment, having an impact on our survival and quality of life.[vi]

Terrestrial and aquatic ecosystems play an important role in regulating climate. They currently absorb roughly half of our carbon emissions. Working with the natural environment, rather than against it, brings multiple benefits for preserving our climate. At the same time, climate change affects ecosystem functioning. The continuing loss of biodiversity and degradation of ecosystems weakens their ability to provide essential services to the extent that we risk reaching irreversible 'tipping points'.

By conserving and restoring ecosystems, we reduce vulnerability and increase resilience. The natural environment is considered by many to have intrinsic value – that is, each species has a value and a right to exist, whether or not it is known to have value to humans.

At a local scale, the natural environment provides the following ecosystem services that support our climate resilience and adaptability, both now and into the future (Figure 3).

Climate Resilient Casey Plan actions speak to the many opportunities to protect, restore, connect with, and celebrate natural environments within Casey.

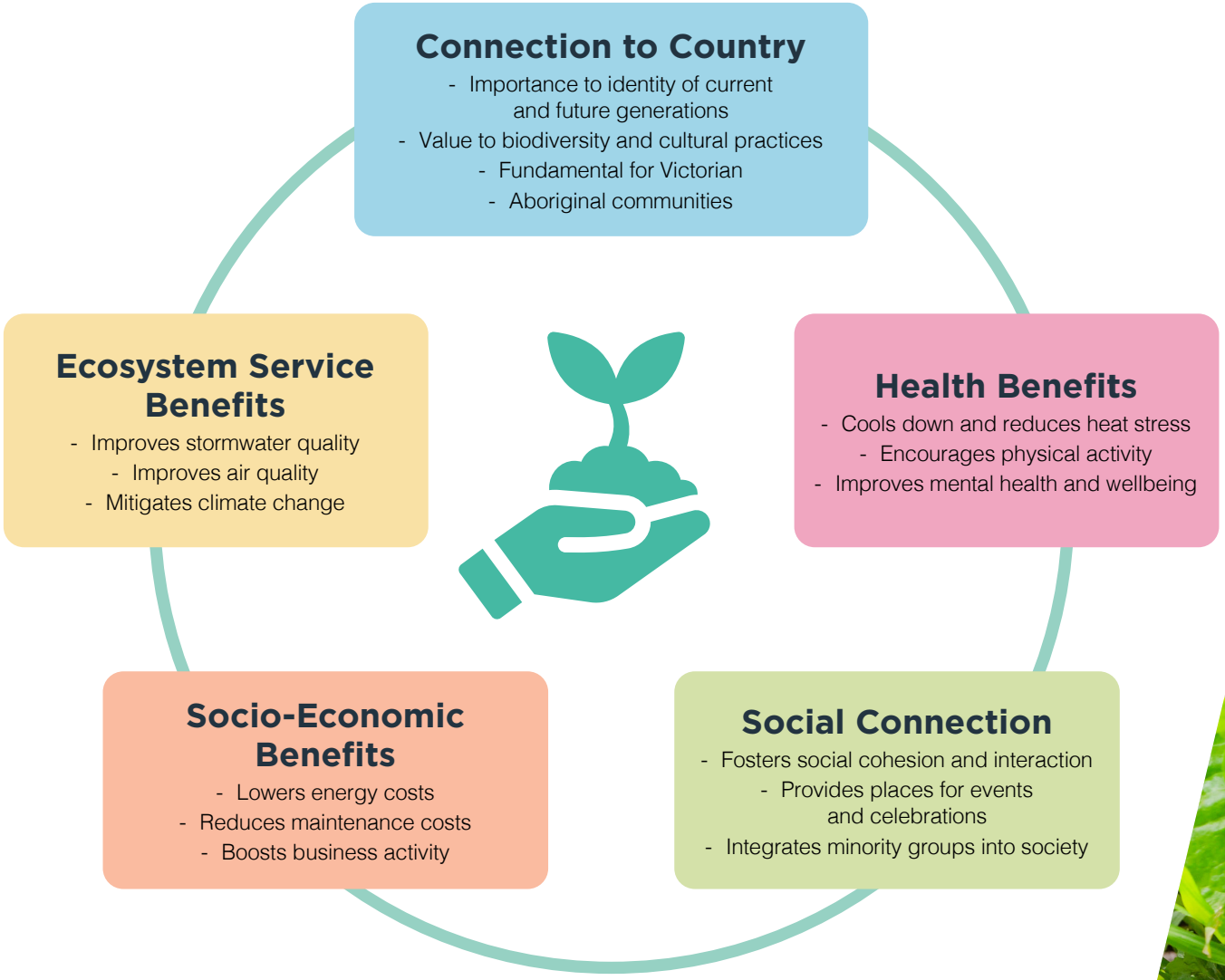


Figure 3: The benefits of nature



Council Infrastructure, Assets and Services – *Deliver, maintain, and adapt Council's infrastructure, assets and services to meet the needs of a growing population in a changing climate.*

An overview of Infrastructure, Assets, and Services at the City of Casey

Given its expansive size, Casey has a significant and varied public and private infrastructure portfolio. Casey City Council owns over $3.2 billion worth of physical infrastructure which is increasing by approximately 5% per year. Given the rate of growth within the City of Casey (forecast to grow to approximately 550,000 residents by 2041), growth areas will continue to need new infrastructure and established area's existing infrastructure will need to adapt to changing needs.[vii]

Council plays a key role in delivering, funding, facilitating, servicing, and advocating for infrastructure, all of which play an essential role in delivering services to the local community. The following diagram illustrates the diverse infrastructure that fulfils this function.



Community facilities:

libraries, community centres, early years facilities (including kindergartens), senior citizen facilities, youth facilities, arts facilities, neighbourhood houses, mens sheds and community halls



Sport and recreation facilities:

aquatic facilities, indoor recreation centres, pavilions, and active recreation reserves including AFL, cricket, soccer, rugby, hockey, baseball, softball, tennis, basketball and netball



Parks:

passive open space (local, district, regional and state level) that include playgrounds, dog parks, botanic gardens, bushland reserves, skate, bmx, fitness equipment, seating and picnic facilities.



Green and blue urban infrastructure:

trees, landscaping, nature strips, and water bodies within the urban realm (for outside of the urban realm refer to the Environment Strategy)



Transport:

local and arterial road networks, and public transport (bus, train, trackless tram)



Drainage:

local drainage (less than 60ha) network (including Water Sensitive Urban Design), and regional drainage and waterways



Paths and trails:

footpaths, bike paths, shared user paths, equestrian trails and trails



Digital:

Wi-Fi, CCTV, smart sensors and telecommunications



Education:

primary school, high school, TAFE and University



Health:

hospitals, community health centres and Ambulance Stations



Justice:

Police stations and courts



Other:

cemeteries and Emergency Management (SES)

Figure 4: City of Casey Infrastructure – Source: City of Casey Infrastructure Strategy 2021-25.

Casey's 2023 independent Climate Change Risk Assessment assessed the number of assets owned by the City of Casey within existing hazard overlays (including the Bushfire Management Overlay, Bushfire Prone Land Overlay, Land Subject to Inundation Overlay and Special Building Overlay). The existing overlays do not include projected climate hazard extents. This analysis found that 475 or 31% of Council assets are currently in areas with a hazard overlay, and when applying a 200-metre buffer to allow for climate change, this number increased to 1024 or 68% of Council owned assets.[viii]

This highlights the importance of climate adaptation and resilience measures to reduce the risk of these assets being impacted by climate hazards into the future.

Why is this objective important?

The purpose of infrastructure is to enable social, economic, and environmental outcomes for current and future populations. To do this effectively, infrastructure needs to be accessible for all, be reflective of the community and their needs, be developed in collaboration with the community, and consider future challenges and opportunities.

Climate change is impacting our infrastructure, assets, and the services we deliver. Whether it be weather events such as droughts drying wetlands and creeks, storms and floods, extended fire seasons, poor air quality, extreme temperatures, or rising sea levels impacting low-lying and coastal properties. The ability to maintain a level of service to the community even in the face of climatic disruption will depend on the capacity of the City of Casey and other levels of government, to plan and design for a changing climate, with the needs of the community front of mind.

Infrastructure does not just refer to the "bricks and mortar" or the materials that it is comprised of. It also refers to social infrastructure, the spaces and places that help build and maintain social ties and trust, allowing societies to coordinate. Social infrastructure plays an important role in our communities, especially in mitigating and recovering from shocks, such as extreme weather events.[ix] In a changing climate the following characteristics of resilience can be applied to assets, infrastructure, and services to support their design, operation, and maintenance: Reflective, Robust, Spare Capacity, Flexible, Inclusive, Integrated, Prepared, Innovative, Diverse, Future Focussed.[x]

The City of Casey acknowledges the importance of infrastructure, assets, and services within the City of Casey to meet the needs of its diverse resident population in a changing climate through its Infrastructure Strategy 2021-25. The Infrastructure Strategy speaks to being future focused and delivering sustainable infrastructure. This includes trialling alternative materials and products, using interim and modular facilities, and co-locating with or using others' facilities. By doing so Council has the potential to decrease construction costs through using recycled materials, local suppliers, and local contractors. Operational costs will also reduce through smart design, reusing energy and installing solar panels. There will also be a lower risk of service disruption and property damage through protecting properties from flooding.

The Climate Resilient Casey Plan actions corresponding to this strategic objective, include opportunities to improve the resilience of Council facilities to have spare capacity to meet basic needs of the communities in times of disruption or emergency. This includes places of refuge from the heat as well as bolstering the resilience and social inclusion of emergency relief centres for extreme weather events.



Image: Selandra Rise, Clyde North.

Community Wellbeing and Resilience – *Strengthen the wellbeing and resilience of our diverse communities so that we are better prepared together for the challenges of a changing climate.*

Overview of community wellbeing and resilience in Casey

The long-term Community Vision 2031 for the City of Casey is to become a more connected, bold and resilient community.

The City of Casey is home to many diverse communities. The most recent population estimate for Aboriginal and Torres Strait Islander peoples within Casey is 2,845.[xi] Over 42% of Casey's population were born overseas and, within this group, one in six arrived in Australia in the last five years. Another 42% speak a language other than English at home and, within this group, one in seven have little to no English skills.[xii] Casey has over 100 faith groups represented.[xiii] Casey is also home to 9% of Victoria's asylum seeker population.

An estimated 5.6% of Casey's adult population identify as part of LGBTIQIA+ communities, representing around 17,000 adult residents.

An estimated one in seven Casey residents live with some form of mild to severe disability. One in twenty live with a profound or severe disability where assistance with everyday tasks is required.

Casey has a higher-than-average level of socioeconomic disadvantage compared to the Victorian average and 16% of the population experience mortgage stress and 28% experience rental stress.[xiv] This is felt across Casey but there are particularly high concentrations of disadvantage in Doveton, Hampton Park, Hallam, and Cranbourne.

In 2017, the Victorian Public Health Survey reported that under half (44%) of Casey adults are 'definitely' tolerant of diversity, compared to the Victorian average (53%).[xv]

There are significant health and wellbeing challenges that disproportionately impact some segments of community and in accordance with Casey's commitment to health equity, there are priority populations that require specific, and at times additional, support.

Almost a fifth of adults report high levels of psychological distress which intensified during COVID lockdowns. Unfortunately, Casey has the highest number of family violence incidents across Victoria with almost 15 callouts per day.[xvi]

Factors such as socio-economic position, early life, social exclusion, employment and work, housing and homelessness and the built and natural environments can strengthen or undermine the health, wellbeing and resilience of individuals and communities.

Casey's Health and Wellbeing Strategy 2021-25 acknowledges that an important way to maximise opportunities for a healthy and happy population is by addressing the social determinants of health in which people grow, live, work, and age. Council plays a key role in influencing the broader determinants of health through activities such as service design and delivery, social cohesion initiatives, enabling social connection, public health education, and advocacy.

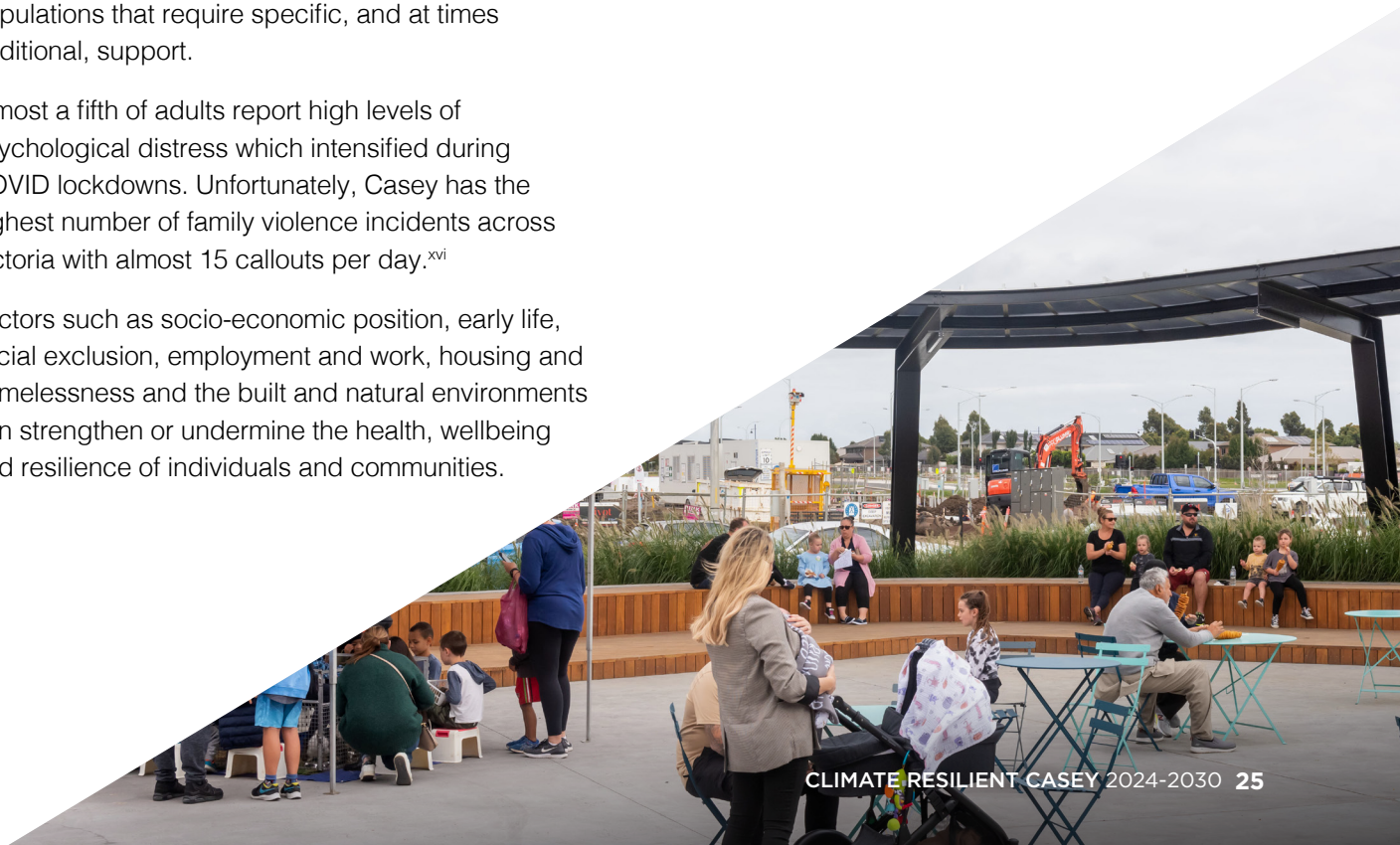


Image: Community members enjoying the Casey Food and Wine Festival.

WHY THIS IS OBJECTIVE IMPORTANT?

The current and future compounding disruptions and challenges that our communities face through a changing climate, require stronger community resilience to combat the impacts of increasingly frequent emergencies as well as steady environmental and societal change.[xvii] Our ability to pull together and support each other can make the difference between surviving or thriving.

Casey's Municipal Emergency Management Plan 2023 points to the importance of community resilience during times of emergency and that resilience can be enhanced by building the capacity and readiness for an emergency through education and engagement. Involving individuals, households, and local businesses in capacity building activities that build awareness of climate risks while seeking community input on ways they prepare for emergencies, is a proven way of fostering agency and self-determination on issues that may impact livelihoods.

Casey communities are diverse in their social demographics, providing an opportunity for the City of Casey to build community resilience programs that are inclusive, safe, and welcoming. In creating space for the community to come together to discuss the changing climate in Casey, Council can build trust and foster community connection, helping the community to extend their social networks.

> "Living in more cohesive and connected communities can save lives."
>
> Professor Daniel Aldrich

Community connection can help build social capital, which is a key determinant of resilience and wellbeing, helping to improve the quality of life when times are good, and having supportive networks when times are tough.

In researching communities who have experienced disasters, Professor Daniel Aldrich found that individuals were more likely to survive if they lived in low-crime, highly connected, communities where the social norms of caring and support were prevalent. In the longer term, such communities were more likely to recover faster, as well as rebuilding mental health and reduced levels of anxiety.[xviii] Community resilience in this sense, helps complement existing emergency management arrangements where self-organising capacity of the community is maximalised, particularly when we know emergency management responses may be stretched.

Many of the Climate Resilient Casey Plan actions that correspond to this strategic objective, focus on community awareness and preparedness given the local changing climate, with a focus on social justice. Making sure programs are inclusive and don't marginalise or exclude community members already experiencing disadvantage, can build a more connected and resilient community who can pull together when the going gets tough.



Planning for a safe future – *Shape and adapt our neighbourhoods and built forms to enable safer and more liveable communities in a changing climate.*

Overview of planning in Casey

As a legislative requirement, each Council in Victoria has a planning scheme that provides a strategic framework for future land use and development. Planning schemes apply to all private and most public land in Victoria and include strategies, policies, zones, and overlays as well as particular provisions that influence how people can use and develop land.

The Casey Planning Scheme recognises the diversity of communities within local areas and the specific issues for each local area or region. A large portion of Casey is included in the State Government's South-Eastern Growth Corridor Plan and within the Urban Growth Boundary. Much of the land within the urban growth area has or is currently being developed for urban development. Land use and development within the urban growth area is generally guided by a Precinct Structure Plan and the planning controls that apply to the land.

Land outside of the urban growth boundary is within the Casey Foothills to the north, Casey Farm, and Casey Coast regions to the south.

The Casey Planning Scheme acknowledges the unintended impacts of population growth on the environment and the risks of climate change to Casey's vulnerable communities along Casey's coastline, farming communities, and eco-systems.

Climate change hazards and a growing population are two challenges that can be strategically planned for in terms of where new development can be most safely situated.

There are several planning controls that seek to assist in responding to climate change and associated risks to human health, life, and property.

In the Casey Planning Scheme, there is the Urban Floodway Zone, the Bushfire Management Overlay, Land Subject to Inundation Overlay and Special Building Overlay. These overlays are designed to assess and regulate proposed buildings and works in designated bushfire areas and land at risk of riverine and overland flooding. The purpose of the zone and overlays is outlined in the table below.



Table 3: Zones and overlays in the Casey Planning Scheme

Urban Floodway Zone	Bushfire Management Overlay	Land Subject to Inundation Overlay	Special Building Overlay
This zone is applied to land to identify waterways, major flood paths, drainage depressions and high hazard areas within urban areas which have the greatest risk and frequency of being affected by flooding. The Floodplain Manager (Melbourne Water) is a referral authority under this overlay. The Floodplain Manager (Melbourne Water) is a referral authority under this overlay.	This overlay applies to land where the bushfire hazard warrants bushfire protection measure to be implemented and where development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level. Under the Building Permit process considering the best available information about bushfire hazard including the map of designated bushfire prone areas prepared under the Building Act 1933 or regulations made under that Act.	This overlay is applied to land identified as flood prone land in a riverine or coastal area affected by 1 in 100-year flood event. The Floodplain Manager (Melbourne Water) is a referral authority under this overlay.	This overlay is applied to land identified in urban areas liable to inundation by overland flows from the urban drainage systems.

State Government policy requires Councils to plan for sea level rise of not less than 0.8 metres by 2100 and allow for the combined effects of tides, storm surges, coastal processes and local conditions when assessing the risks and coastal impacts associated with climate change.

According to the independent Climate Change Risk Assessment conducted for the City of Casey, these overlays will need to be reviewed to include up to date future climate change projections.[xix] It is anticipated that climate hazards will intensify over time meaning that areas impacted are likely to extend. Further strategic planning work may be required for the coastal townships at risk of sea level rise including temporary inundation to plan for and address the longer-term impacts of climate change.

The City of Casey has prepared a Coastal Framework to assess future impacts of climate change and guide decision making to protect Casey's coastline and coastal communities. The Framework will help guide how Casey manages and adapts to coastal hazards such as coastal erosion, temporary inundation, and sea-level rise while maintaining and balancing social, cultural, environmental, and economic values. See Figures 6 and 7 in Appendix 2 for maps illustrating the extent of coastal hazards in Casey. The maps show that over 4,000 people who reside in Casey's coastal areas and are likely to experience significant impacts from inundation hazards.[xx]

Within the City of Casey there are currently 2,365 properties with a Bushfire Management Overlay. The Casey communities identified in the Municipal Emergency Management Plan as being at high risk of bushfire include Warneet, Blind Bight, Cannons Creek, Botanic Ridge, Harkaway, Lysterfield South and Junction Village.[xxi] The spatial distribution of Bushfire Prone areas is provided in Figure 9 in Appendix 2.

According to the SES Casey Local Flood Guide (2020) approximately 14% of the City of Casey is at risk of flooding the majority of the municipality is also at risk of flash flooding.[xxii] See Figure 8 in Appendix 2 for a map illustrating areas of the City of Casey at risk of flooding in a 1% AEP flood. A 1% AEP flood means there is a 1% Annual Exceedance Probability, or a 1% chance of a flood of this size or larger occurring in any given year.

The City of Casey ranked second highest for the urban heat island effect out of 27 local government areas in Melbourne, according to Victorian Council of Social Services (VCOSS) research in February 2024. The urban heat island effect increases the average temperature in three local government areas in Greater Melbourne by over 10 degrees: Brimbank, Melton and Casey.[xxiii] The local government areas with the highest heat vulnerability in Greater Melbourne are Melton, Brimbank, Darebin, Casey, and Wyndham, due to socioeconomic disadvantage and a high proportion of older people, young children, and people requiring care.

The 'top 5' hottest and most disadvantaged LGAs

Area	Urban heat	Low Income
Brimbank	10.75	29.00%
Melton	10.7	20.90%
Casey	10.7	20.80%
Moonee Valley	9.63	20.20%
Whittlesea	9.4	23.10%
Maribyrnong	9.35	20.40%
Greater Dandenong	9.26	30.80%
Hume	9.23	28.50%
Merri-bek (Moreland)	9.2	19.60%
Wyndham	9.18	20.30%
Kingston	9.05	16.30%
Glen Eira	8.63	14.30%
Darebin	8.53	21.00%
Monash	8.43	16.60%
Yarra	8.27	14.90%
Banyule	8.25	15.20%
Frankston	8.23	19.80%
Manningham	7.95	17.40%
Hobsons Bay	7.94	18.90%
Melbourne	7.94	17.60%
Whitehorse	7.93	17.60%
Stonnington	7.56	10.90%
Knox	7.52	16.80%
Boroondara	7.5	11.20%
Port Phillip	7.4	11.80%
Bayside	7.36	10.10%
Maroondah	7.03	16.40%

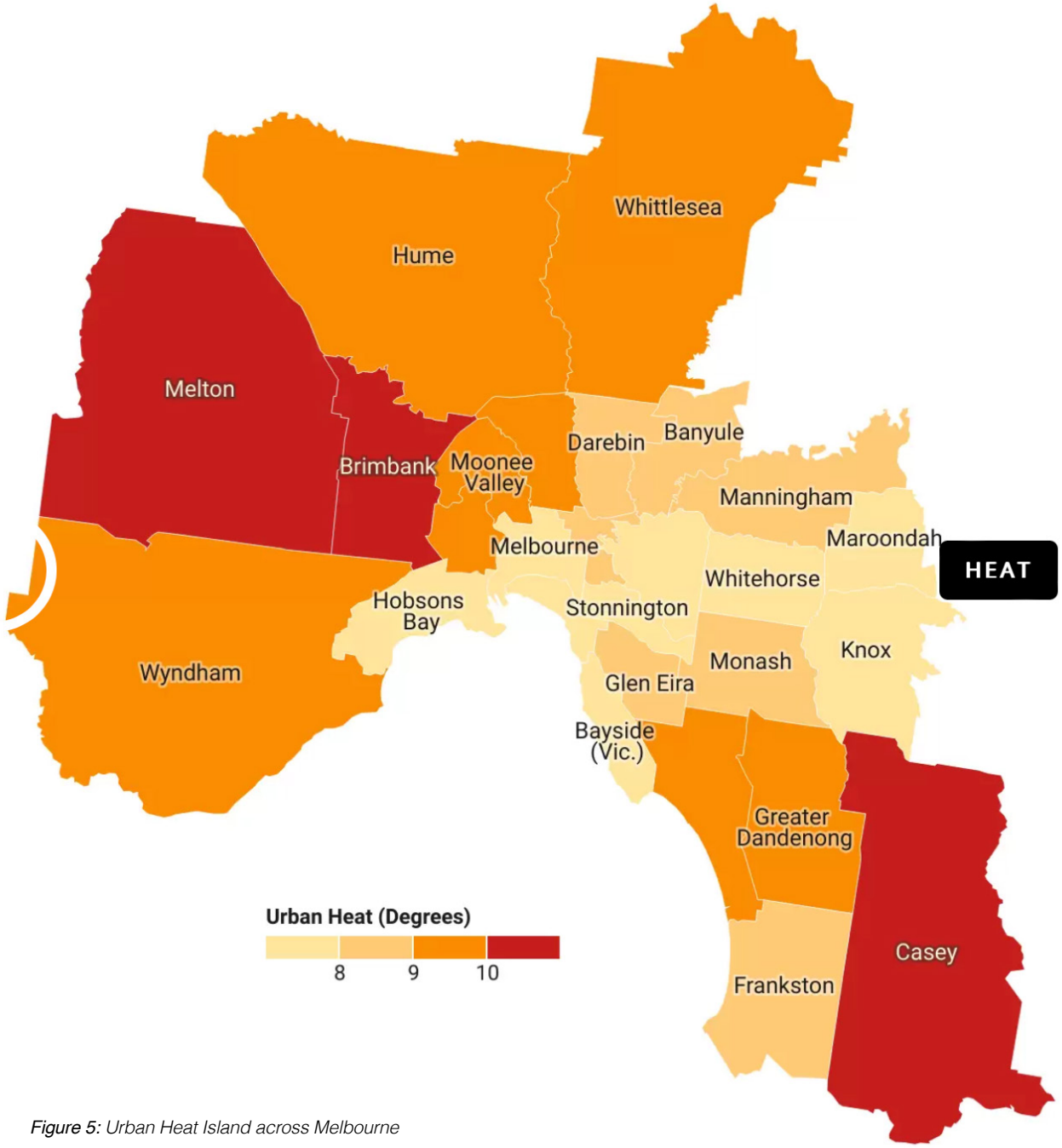


Figure 5: Urban Heat Island across Melbourne

WHY IS THIS OBJECTIVE IMPORTANT?

Minimising new development risk exposure highlights the increasing importance of redirecting urban growth away from high-risk areas.[xxiv] The Royal Commission into National Natural Disaster Arrangements noted that "development in high-risk areas should be avoided unless risk can be clearly communicated and cost effectively managed".[xxv]

> "We need to rethink how natural hazards and climate risk are addressed in land use planning decisions. Our planning system needs reform, to protect communities in the future and keep insurance affordable."
>
> MARK LEPLASTRIER – IAG Executive Manager Natural Perils

Since 2019, 80% of Australians have reported experiencing an extreme weather event at least once, highlighting the inextricable link between land-use planning decisions and exposure to risk.[xxvi]

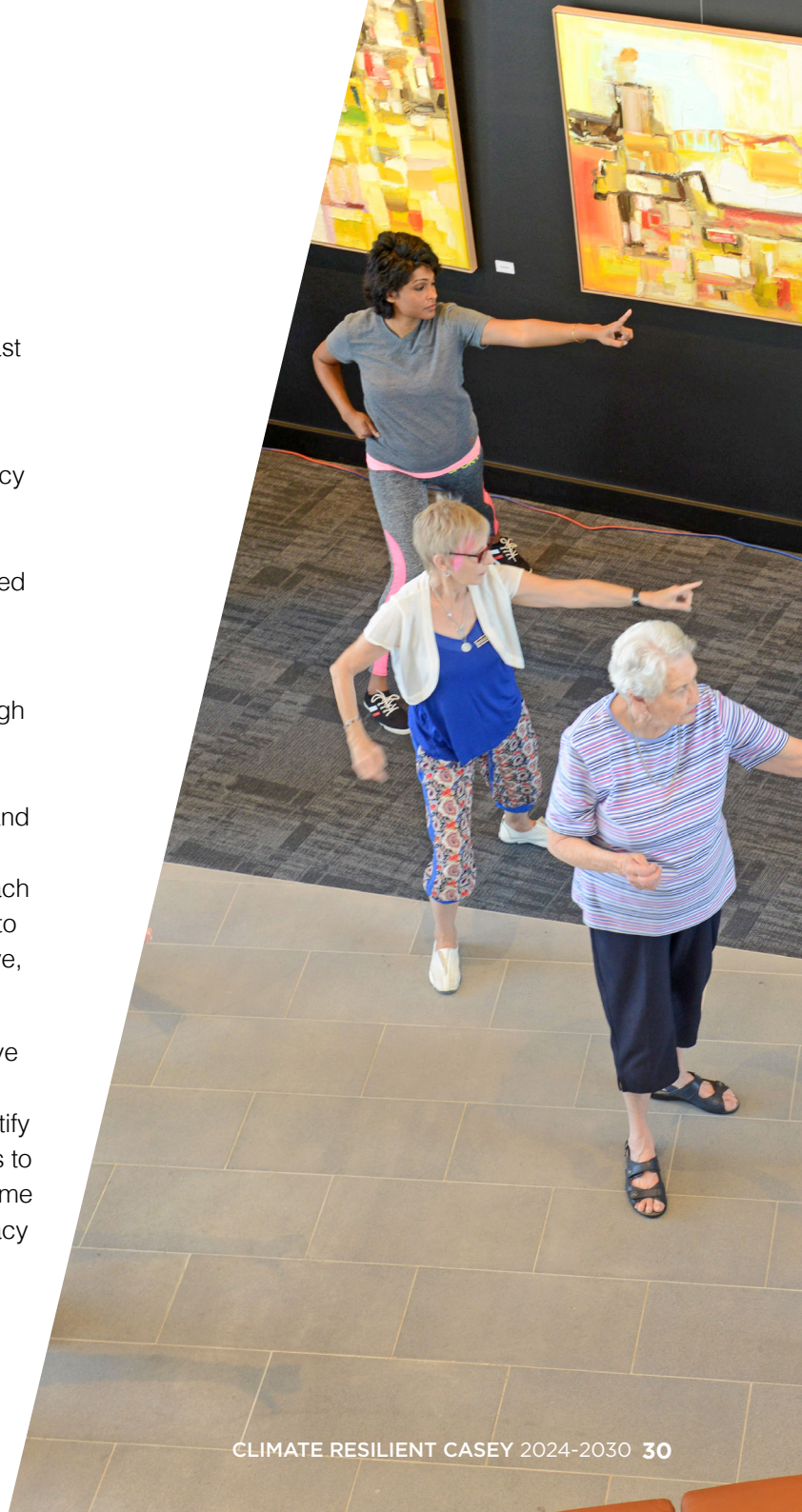
The Climate Council estimates that by 2030, approximately 520,940 properties, or one in every 25 across Australia, will be 'high risk', having annual damage costs from extreme weather and climate change that make them effectively uninsurable.[xxvii]

Between 2005-2022, the Australian Government spent $23.99 billion on disaster recovery and relief through funding mechanisms including the Disaster Recovery Funding Arrangements (DRFA). Comparatively, $510 million was spent on prevention and mitigation.[xxviii] Since January 2020, the insurance bill for storms and floods alone have exceeded $12.3 billion, notwithstanding the uncounted and ongoing social costs as people recover and repair their lives.[xxix] Disasters currently cost the Australian economy on average of $38 billion per year and will rise to at least $73 billion annually by 2060 under a low emissions scenario (which is unlikely and conservative).[xxx]

Australia's National Emergency Management Agency (NEMA), provides a compelling business case for disaster risk reduction quoting that for every dollar spent on disaster risk reduction, there is an estimated $9.60 return on investment.

Given these statistics, it makes sense to prioritise actions to reduce climate risk to communities through planning reform however local government cannot do this alone. Funding to local Councils is largely based on a shared funding arrangement by State and Federal Government and often funding incentivises local governments to adopt a more reactive approach to disaster risk management, responding primarily to immediate crises rather than implementing proactive, long-term strategies.

The actions corresponding to the Strategic Objective of 'Planning for a safe future', include capacity building for Council staff, updated mapping to identify future climate hazard areas within Casey, programs to support local businesses and communities to become better prepared for a changing climate and advocacy to the Victorian government for planning reform for climate resilience measures.



CLIMATE RESILIENT CASEY ACTION AREAS

The Climate Resilient Casey Plan includes four Action Areas. These Action Areas keep community and the natural environment at the heart of this work, describing the different ways the Strategic Objectives will be achieved. The Action Areas break away from the traditional social, economic, environmental, and cultural approach seen in many climate change strategies and encourage collaboration across Casey's work areas for deeper and longer lasting outcomes.

The Action Areas correspond to the definition of resilience – our capacity to Adapt, Survive and Thrive in the face of climatic acute shocks and chronic stresses. Embed has been included as an Action Area given the importance of embedding new ways of thinking and working into Council processes and policy.



THE ACTION PLAN 2024-2027

Nature and Biodiversity

Enable a thriving natural environment and biodiversity alongside a rapidly growing population and changing climate.

Council Infrastructure, Assets and Services

Deliver, maintain, and adapt Council's infrastructure, assets, and services to meet the needs of a growing population in a changing climate.

Community Wellbeing and Resilience

Strengthen the well-being and resilience of our diverse communities so that we are better prepared together for the challenges of a changing climate.

Planning for a Safe Future

Shape and adapt our neighbourhoods and built environment to enable safer and more liveable communities in a changing climate.



Adapt					
No.	**Description**	**Climate Hazards**	**Strategic Objectives**	**Budget**	**Timeframe**
1	Develop and deliver Greening Casey Plan to maximise greening on public land, to help cool the City, increase biodiversity, enhance carbon drawdown potential, and ensure locals reap the health and wellbeing benefits of nature.	All Hazards		$$	Year 1 - 3
2	Develop a resource providing a list of climate resilient plant species suitable for future greening efforts and develop internal guidance / strategic decision-making tool to assist determination of what to plant, where, and passive irrigation requirements.	All Hazards		$	Year 1
3	Update Council's policies, as they come up for renewal, to increase the inclusion of climate resilient indigenous planting and reflect nature as an essential part all designs.	Rainfall and Flooding		$	Ongoing
4	Prepare a Stormwater Management Guidelines to provide guidance on stormwater treatment to deliver a climate resilient City.	Rainfall and Flooding		$	Year 1
5	Continue to deliver and expand the Gardens for Wildlife program, including a focus on providing shelter and water for native wildlife.	Temperature		$$	Ongoing
6	Update the Open Space Strategy to embed Climate resilience and adaptation considerations.	All Hazards		$	Year 1 - 3
7	Develop and implement the Biolink Plan to identify priority habitat corridors for restoration, conservation, and enhancement.	All Hazards		$$$	Year 1 - 3
8	Develop a baseline and then work in partnership with stakeholders to implement a wetland monitoring and management program to improve vegetation and oxygen levels in the wetlands across the City of Casey (including wetlands outside of Council's existing tenure).	All Hazards		$$	Year 2
9	Continue to ensure that Council undertakes replacement planting for trees removed due to extreme weather events such as storm and bushfire with species appropriate for the local area.	All Hazards		$	Ongoing
10	Undertake baseline mapping of the extent and condition of mangrove, saltmarsh, and other coastal Ecological Vegetation Types in Western Port Bay in collaboration with the Western Port Biosphere Reserve foundation.	All Hazards		$$	Year 2
11	Continue cultural and ecological burning program in partnership with Bunurong Land Council Aboriginal Corporation in bushland reserves to reduce fuel loads and provide strategic fire breaks.	Bushfire and Air Quality		$$	Year 1 - 3

Adapt					
No.	**Description**	**Climate Hazards**	**Strategic Objectives**	**Budget**	**Timeframe**
12	Update Council's Environmentally Sustainable Design Policy for Council assets to ensure climate impacts are addressed during the concept phase of new builds to avoid common issues regarding design, orientation and location of the building, renewable energy generation and storage, and planting.	All Hazards		$	Year 1
13	Advocate to the Victorian Planning Authority for improvements in Precinct Structure Planning to ensure appropriate development in areas at greater risk of climate hazards and improved Environmentally Sustainable Design considerations including building design and higher canopy cover targets.	All Hazards		$	Year 1
14	Review the extent to which climate hazard considerations are integrated into Council's OH&S Policy and Procedures.	All Hazard		$	Year 1
15	Update Council's Events Policy to include extreme weather planning and consideration of climate hazards.	All Hazards		$	Year 1
16	Undertake strategic planning to prioritise delivery and upgrade of Council drainage infrastructure to mitigate flooding in Casey.	Rainfall and Flooding		$	Ongoing
17	Develop resources and processes for Council's planning staff to guide effective decision making in relation to climate adaptation and resilience.	All Hazards		$	Year 1 - 3
18	Undertake flood mapping and initiate the planning scheme amendment process to update the Planning Overlays to influence future land developments with adequate controls.	Rainfall and Flooding		$$$	Year 1 - 3
19	Prepare a planning scheme amendment to implement a local coastal hazard assessment for Casey's coastal area.	Rainfall and Flooding		$$$	Year 3
20	Undertake an assessment of key Council facilities to determine priority locations for off grid solar, battery and generator systems to support operations in the event of power blackouts, prioritising Council facilities used as Emergency Relief Centres.	All Hazards		$	Year 1
21	Provide off grid solar, battery and generator systems for key council facilities, prioritising those used as Emergency Relief Centre locations, to support operations during blackouts (to be included in Business Continuity Plans).	All Hazards		$$$	Year 2 and 3
22	Continue to roll out real time water monitoring across Council facilities to monitor water usage to ensure that water leaks are identified and rectified.	Rainfall and Flooding		$	Year1

Adapt					
No.	**Description**	**Climate Hazards**	**Strategic Objectives**	**Budget**	**Timeframe**
23	Continue to plan and deliver alternative water projects for futureproofing Casey's active open spaces and reduce reliance on potable water for irrigation.	Temperature		$$$	Year 1 - 5
24	Advocate to the Victorian Government to finalise and implement the Victorian Government's Environmentally Sustainable Design Roadmap which proposes to implement changes to Victorian planning schemes to include greater consideration of climate change adaptation and mitigation in planning decisions.	All Hazards		$	Year 2 and 3
25	Deliver the Solar Savers Heat Resilience Subsidy for Casey's most at-risk community members.	Temperature		$$	Year 1
26	Support Foreshore Committees of Management to prepare and/or review Coastal and Marine Management Plans.	All Hazards		$$	Year 3 +
27	Map Cool and Connected Routes to inform the community of the coolest routes for active and public transport, as well as highlighting urban heat islands in routes for addressing via advocacy and investment.	Temperature		$$$	Year 1 - 3+
28	Develop bushfire management plans for Casey's bushland reserves.	Bushfire and Air Quality		$$	Year 1
29	Consider findings of the South East Councils Climate Change Alliance (SECCCA) Asset Vulnerability Assessment project to inform climate adaptation considerations for Council's current and future assets.	All Hazards		$	Year 1
30	Extend "Stay Safe in the Heat" by developing Heat Safe Casey: A public information campaign and heat safe kits for residents.	Temperature		$$	Year 2

Survive					
No.	**Description**	**Climate Hazards**	**Strategic Objectives**	**Budget**	**Timeframe**
31	Work with the Municipal Association of Victoria to advocate for increased investment in the Municipal Emergency Resourcing Program funding and to streamline process for claiming under the Disaster Recovery Funding Arrangements.	All Hazards		$	Ongoing
32	Review Council-run Emergency Relief Centres to ensure they are planned to incorporate the access and inclusion needs of most at risk community members.	All Hazards		$	Year 2 - 4
33	Advocate to the Victorian Government, electricity providers, and telecommunication operators to invest in robust communication technology to assist people within the City of Casey to communicate in the event of power blackouts and extreme weather.	All Hazards		$	Year 1 - 3
34	Partner with Distributed Network Service Providers to improve resilience in the local energy network during extreme weather events. This includes leveraging energy storage (such as community batteries) to provide additional capacity, local microgrids, and exploring emerging technologies and models such as using personal electric vehicles to power homes and businesses.	Storms, Wind and Hail		$	Year 3
35	In line with the Community Service Organisation Growth and Attraction Framework, resource and support Community Service Organisations to help them respond to additional demand for services during emergencies and extreme weather and to increase sector collaboration and resource-sharing.	All Hazards		$$	Year 1 - 3
36	Advocate for increased resourcing for Community Service Organisations to meet demand for crisis housing/ financial support needs in community post emergency.	All Hazards		$	Year 1 - 3
37	Advocate for additional resources to address the complex challenges of increased incidence of family violence during emergencies and periods of extreme weather.	All Hazards		$	Year 1 - 3
38	Design and deliver a Climate Resilient Casey communications campaign targeting those identified as most at risk to climate hazards.	All Hazards		$$	Ongoing - launch in Year 1
39	Provide the community with access to hazard mapping across the City of Casey so they are more informed about risks that may impact them and be better prepared in advance.	All Hazards		$	Year 3
40	Investigate best practice approaches to facilitating cool spaces during heatwaves and determine the feasibility of applying these approaches in the local Casey context.	Temperature		$-$$	Year 1 - 3

Thrive					
No.	**Description**	**Climate Hazards**	**Strategic Objectives**	**Budget**	**Timeframe**
41	Work with the Casey Youth Climate Action Committee to design and deliver a program to address the mental health impacts of climate change, grief and anxiety.	All Hazards		$	Year 2 and 3
42	Develop and deliver a Climate Ready Business Program that educates and supports businesses on local climate impacts and actions they can take.	All Hazards		$$	Year 2 and 3
43	Continue to advocate for the provision of green spaces (local parks, local sports reserves, waterway and drainage reserves) of scale and the protection of riparian corridors in new precinct structure plans prepared by the Victorian Planning Authority.	All Hazards		$	Ongoing
44	Advocate for a requirement for all new subdivisions to provide a minimum 30% potential canopy tree coverage within the public realm and open space in new precinct structure plans prepared by the Victorian Planning Authority, consistent with the Precinct Structure Planning Guidelines: New Communities in Victoria; October 2021.	All Hazards		$	Ongoing
45	Undertake a Casey-wide biodiversity assessment to identify sites of biological significance to inform all future planning scheme amendments as well as operational and strategic planning.	All Hazards		$$$	Year 1 - 3
46	Increase community awareness and appreciation for the value of wetland ecosystems and threatened species through biodiversity education programs and sessions.	All Hazards		$$	Ongoing
47	Advocate for the natural environment to be valued for its intrinsic nature and role in maintaining all forms of life by, creating a City of Casey Rights of Nature Principle.	All Hazards		$	Ongoing
48	Work with the community to pilot a climate-focused citizen science program to capture data and stories of risk, mitigation, resilience, and adaptation.	All Hazards		$$	Years 3+
49	In line with the Reconciliation Action Plan Deliverable 34, identify and create a process for ongoing engagement opportunities with Aboriginal and Torres Strait Islander stakeholders to incorporate Traditional Owner land management practices in climate resilience initiatives.	All Hazards		$$	Ongoing
50	Explore the development of partnerships to offer support services within the Library Service for at risk residents.	All Hazards		$	Year 3+
51	Work with Community Service Organisations to identify opportunities to link community members with each other, in particular those at greater risk from climate impacts, and volunteers who can support them in their homes or at local facilities.	All Hazards		$	Year 3+

Thrive					
No.	**Description**	**Climate Hazards**	**Strategic Objectives**	**Budget**	**Timeframe**
52	Develop a place-based community resilience initiative to engage community in identifying local challenges and co-designing solutions.	All Hazards		$$	Year 1 - 3
53	Promote Council grants and external funding opportunities, and track outcomes of Council-funded projects to enhance climate resilience in the Casey community.	All Hazards		$	Ongoing
54	Embed projected climate change impacts into Casey's current and future Municipal Public Health and Wellbeing Plans to support local resilience and wellbeing.	All Hazards		$	Year 1 - 3



Embed					
No.	**Description**	**Climate Hazards**	**Strategic Objectives**	**Budget**	**Timeframe**
55	Review Business Continuity Plans to ensure climate change and related disruptions are adequately planned for.	All Hazards		$$	Year 1
56	Continue to build capacity and capability of the organisation to ensure Council is ready for municipal emergency response and an activation is less disruptive on business as usual service delivery (as much as possible).	All Hazards		$	Ongoing
57	Joint Crisis Management planning and preparation between Emergency Management and Business Continuity for large events that affect both community and Council service delivery.	All Hazards		$	Year 2
58	Develop and implement staff education program on climate change and climate resilience.	All Hazards		$	Ongoing
59	Embed the consideration of climate risks into Council contracts.	All Hazards		$	Ongoing
60	Develop a guidance document to integrate climate resilience into Council's Asset Management Policy and Capital Works Program.	All Hazards		$	Year 3
61	Develop and implement a program to enhance the knowledge and capacity of local community leaders in climate adaptation and resilience, enabling them to better support their communities	All Hazards		$	Year 2 - 4
62	Provide annual updates on climate mitigation and adaptation to Executive Leadership Team and Council.	All Hazards		$	Ongoing
63	Undertake an audit of the local content of the Casey Planning Scheme to ensure it supports the use of best available climate change data and adaptative planning principles, for consideration to feed into the regular Planning Scheme Review cycle.	All Hazards		$	Year 3
64	Develop new, strengthen and maintain existing partnerships with key external organisations that can support advocacy, research and delivery.	All Hazards		$	Ongoing

CLIMATE RESILIENT CASEY PLAN GOVERNANCE, MONITORING AND EVALUATION

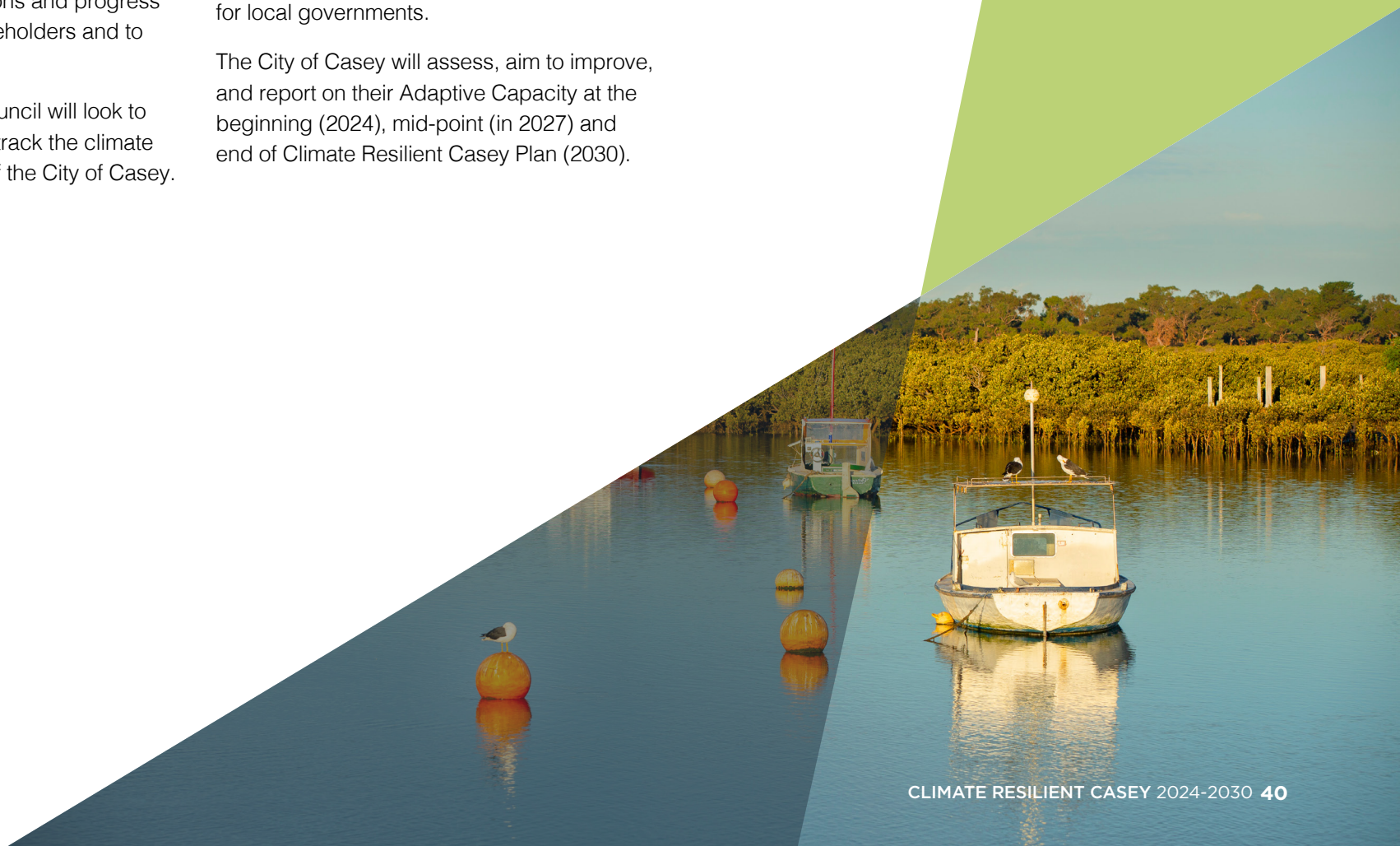
Climate Resilient Casey 2024-2030 requires collaboration between the different service areas of Council and the community to be successfully delivered.

Monitoring, evaluating, and reporting against the implementation of this plan is critical to track and share achievements, key lessons and progress with the community and other stakeholders and to support ongoing decision-making.

As implementation progresses, Council will look to draw on available data sources to track the climate resilience and adaptive capacity of the City of Casey.

To track overall improvements in the adaptive capacity of the City of Casey, Council will administer the Adaptive Capacity Checklist from How Well Are We Adapting, a web-based climate change adaptation monitoring, evaluation and reporting tool for Victorian local governments. The tool provides an organisational scan of adaptation 'readiness' for local governments.

The City of Casey will assess, aim to improve, and report on their Adaptive Capacity at the beginning (2024), mid-point (in 2027) and end of Climate Resilient Casey Plan (2030).



APPENDICES



APPENDIX 1: HIGH AND VERY HIGH CLIMATE RISKS

The City of Casey Independent Risk Assessment identified the following risks as High to Very High by 2090:

Council infrastructure, assets, and services	Community wellbeing and livelihood	Nature and natural systems
Council contractors may not have the capacity to handle the volume of cleanup work required to ensure the safety of the environment and city infrastructure. Council-owned buildings and structures are at risk of structural damage due to thermal expansion and contraction caused by rapid temperature fluctuations. This can compromise the safety and integrity of these assets. Failure of Council budgeting and financial plans due to cumulative economic impact of bushfire, resulting in adverse impacts on service delivery. Higher demand on Council air-conditioned and shaded facilities resulting in increased costs for cooling, maintenance, and staffing. Increase in the financial assistance required to adequately respond to, and recover from, bushfire/ grass fire events where insurance cover or funding from other levels of government is limited. Increased capital costs associated with the need to invest in additional water capture and reuse infrastructure. Increased demand on Council emergency response function results in delays to usual service delivery and health impacts to vulnerable community members. Increased demand on Council recovery and support services, resulting in reduced capacity to undertake preventative and proactive service delivery that reduces underlying community vulnerability.	An interruption in power supply can lead to an increased risk of meal disposal due to food safety concerns and disrupt meal delivery services to customers. Blackout/brownouts during heatwaves results in adverse health consequences for vulnerable residents (e.g. older residents, children, those with chronic health conditions, disability or reliance on electricity for medical devices). Bushfire resulting in extended closure of critical road(s), leading to reduced productivity and impacts on local economy. Closure of Council-owned facilities due to heatwave impacting HVAC building systems, and adversely affecting people who depend on facilities to stay cool during an extreme heat event. Heatwave conditions results in major damage to crops, affecting livelihoods of primary producers in the region. Increase in bushfire-related air pollution and dust contaminating Council's owned buildings ventilation and HVAC systems resulting in poor indoor air quality, affecting residents/users' health & disrupting building operations e.g. respiratory injury/illness to residents from smoke inhalation.	Bushfire access and defence strategies often include large-scale removal of native vegetation. Fire breaks and access tracks fragment native vegetation and increase the likelihood of weed invasion. Coastal inundation could result in the movement of mangroves and/or saltmarsh, inland, reducing the extent of these ecological communities because barriers (roads, levees etc.) and private land will limit inland migration. Extreme heatwaves and reduced rainfall can result in mass dieback of native vegetation. This can affect just the trees or all the native vegetation in the area. This also has an adverse effect on fauna which rely on this vegetation. Flood water transporting pollutants and invasive species between waterbodies and waterways, impacting catchment and ecosystem health, including water quality. This could cause displacement, increase in invasive species proliferation, and mortality. Increased carbon dioxide concentrations changes foliage's nutritional value, impacting species such as koalas. Reduced forage quality as a result of water stress is also likely. Increased cost and effort to protect remaining intact native vegetation, including planting of species that have disappeared or are new species that are adapted to the new conditions. Increased ocean warming and acidification, impacting hard-shelled aquatic life (e.g., oysters) and create uninhabitable conditions, increasing species loss. Increased temperature and decreased rainfall can impact on threatened species and their habitat which can result in a decrease in species abundance or distribution and may lead to extinctions.

Council infrastructure, assets, and services	Community wellbeing and livelihood	Nature and natural systems
Increased demand on Council response and recovery services results in delays to capital works and/ or maintenance Increased frequency of blackout/brownouts in the power network, resulting in loss of business continuity, revenue, and reduced service delivery. Increased incidence of 'stop work' conditions bushfire smoke and associated air quality impacts, resulting in delays and additional costs for Council construction and maintenance projects. Increased incidence of extreme events results in significant increases in insurance premiums, affecting viability of some Council facilities. Increased proactive funding required to improve resilience of built assets to bushfire events (capital expenditure for new builds or retrofitting of existing assets). Increased risk due to the potential financial and resource impacts of public liability events. Increased risk of homes becoming uninsurable potentially resulting in increased demand on Council for support, community services, and exacerbating the existing housing crisis. Power supply disruption due to severe events can lead to an increased risk of meal disposal and disrupt meal delivery services to customers. Residents and/or volunteers are unable to go outdoors and attend events leading to event cancellation and cost associated. Risk of damage or complete destruction to Council-owned infrastructure, including buildings, and utilities, leading to substantial repair and replacement costs.	Increased incidence of family violence due to trauma and pressures from extreme events. Increased risk of homes becoming uninsurable potentially resulting in increased demand on Council for support, community services, and exacerbating the existing housing crisis. Increasing cost of water leading to economic impacts on water-reliant businesses that cannot access bulk or recycled schemes. Prolonged periods of high temperatures can stress water supply systems, potentially leading to reduced water availability for irrigation of parks and recreational facilities, impacting green spaces and community use. Reduce the quality and amenity value of Council-managed green spaces, resulting in a reduction of open/recreation space utilisation and negative impacts on liveability. Reduced community access to venues and public places resulting in decreased opportunities for engagement, recreation, and social interaction. Reduced desirability of outdoor shopping facilities (e.g. strip shopping; markets) in warmer months, requiring businesses to adapt to changing market conditions, and potentially resulting in economic losses.	Injury and mortality of wildlife due to extreme cold, large hailstorms or winds. Long or extreme drought could result in a reduction or loss of ephemeral wetlands. This vegetation is already typically under-surveyed and is already under extreme pressure from land clearing and development. Threatened species such as Growing Grass Frog rely on these wetlands. Native species pushed beyond their existing bioclimatic envelopes. Several species will need to migrate to cooler, moister environments (uphill and/or southwards). Widespread species loss may occur for less mobile and adaptable species, or those faced with competition or environmental, human, or geographical barriers. Native vegetation sitting adjacent to mangroves and/or saltmarsh may be lost due to mangrove/saltmarsh encroachment and barriers (roads, levees etc.) limiting inland migration. Post-fire management often includes the removal of dangerous trees impacted by fire. This removal results in a further loss of native vegetation and can have many indirect impacts. This includes impacts to native vegetation which typically requires dense canopy cover (e.g., Wet or Damp Forests). Repeated or extreme bushfires can result in species extinctions (particularly threatened species with restricted distributions) and a reduction in the distribution of fire sensitive ecological communities. Smaller birds at increased risk from higher summer temperature extremes, resulting in less reproductive success. The timing of pollination changes, such that pollination timing of two or more species now overlaps, resulting in potential hybridization and loss of two genetically distinct species occurs. Wetlands and waterways becoming hotter can results in reducing dissolved oxygen levels, making these environments difficult for aquatic species to live in. Widespread dieback and mortality of trees in Council areas resulting in higher fuel loads, reduced resources for wildlife, safety risk for people and reduced amenity values.

APPENDIX 2: CLIMATE HAZARD MAPS

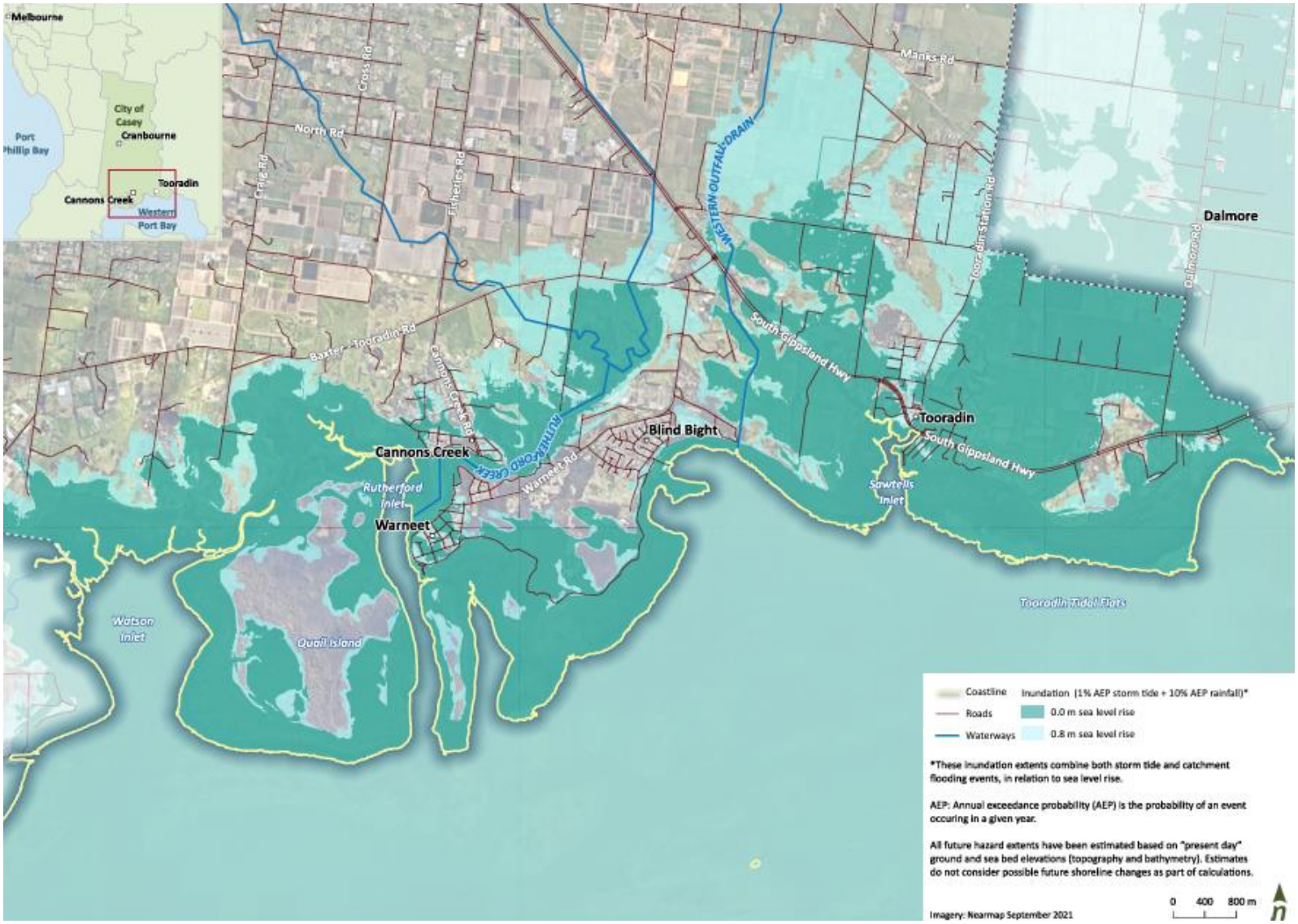


Figure 6: City of Casey Coastal Hazard Map of Regional Storm Tide Inundation Extents

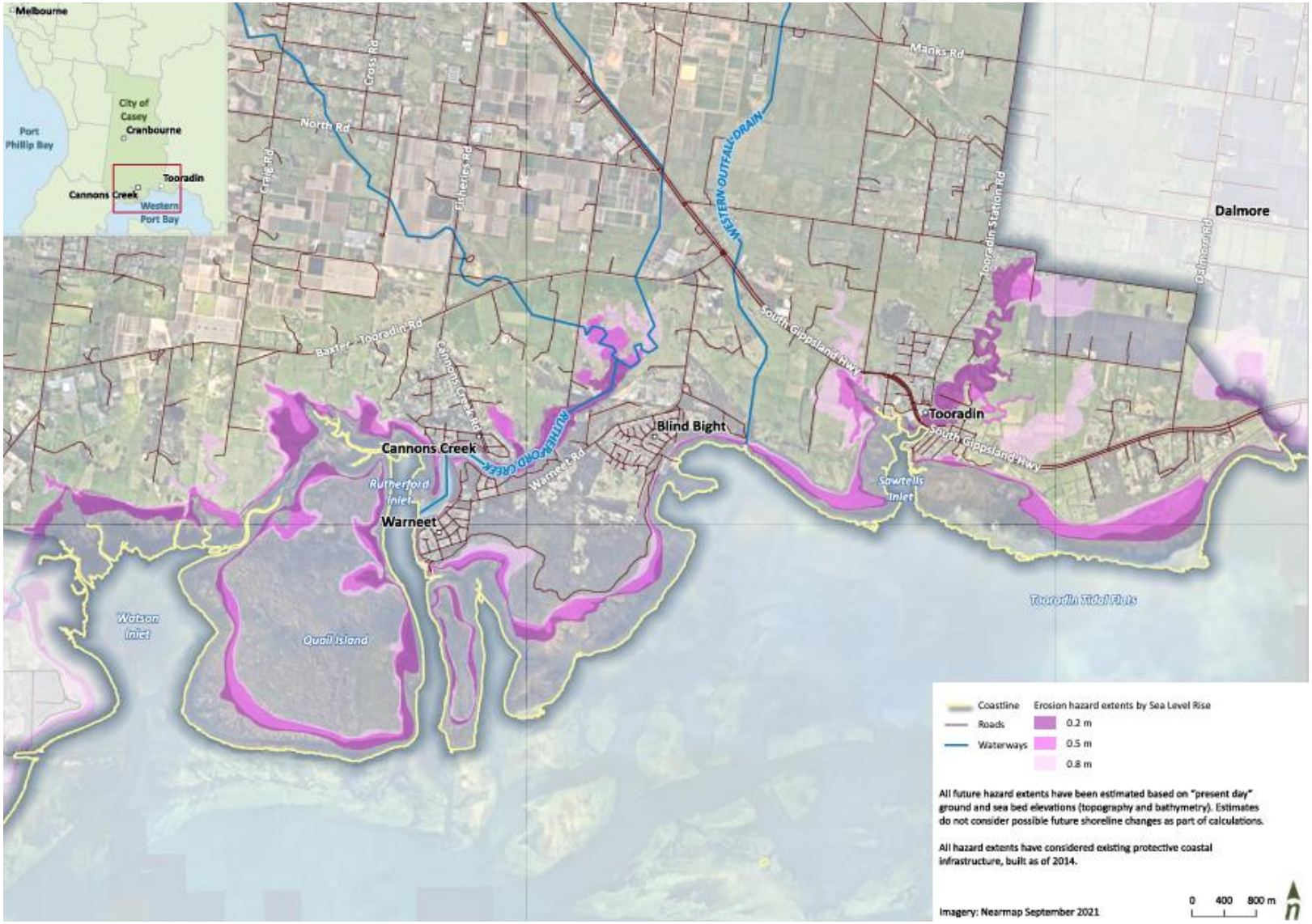


Figure 7: City of Casey Coastal Hazard Map of Regional Coastal Erosion Extents[xxxii]

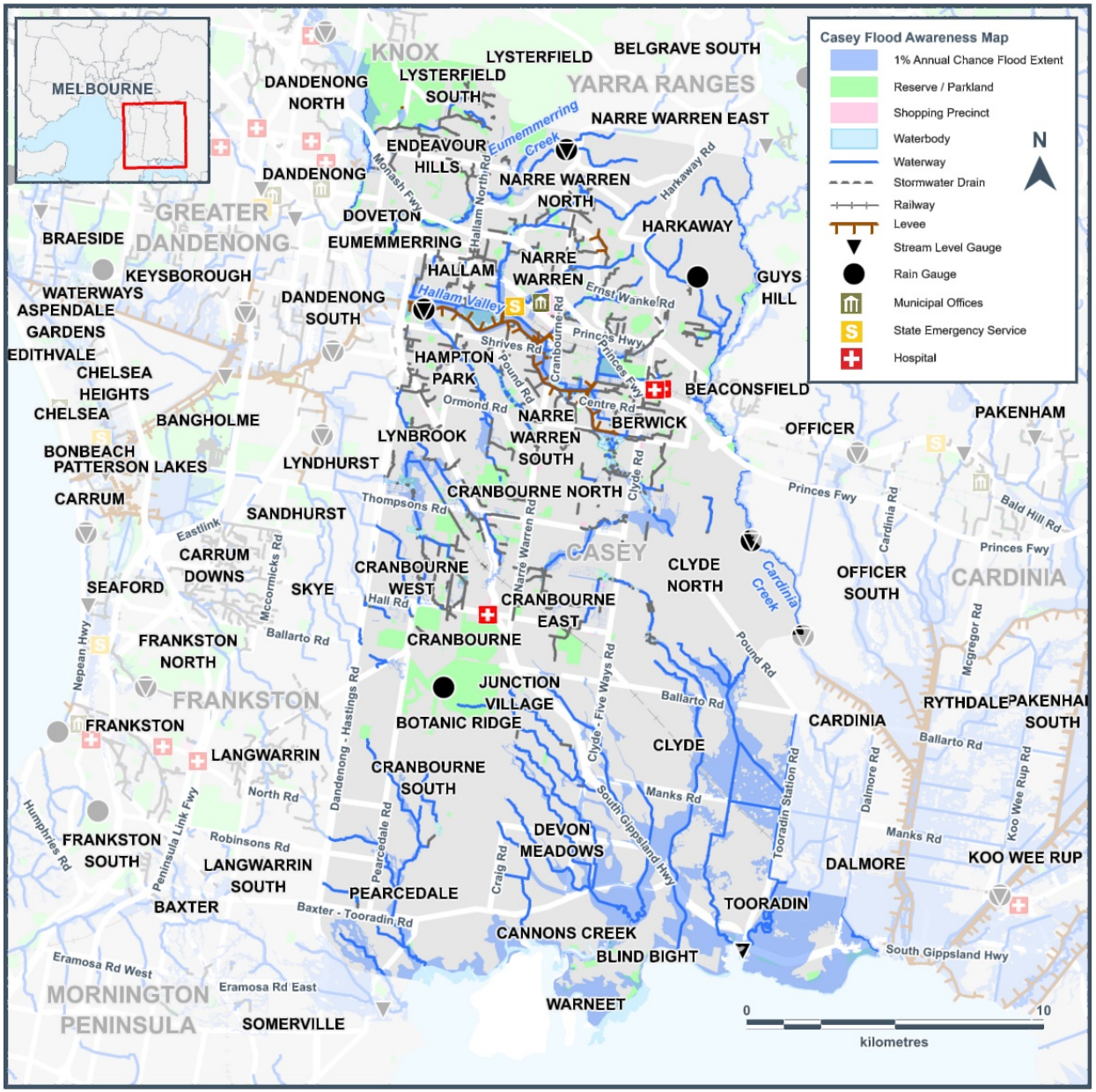
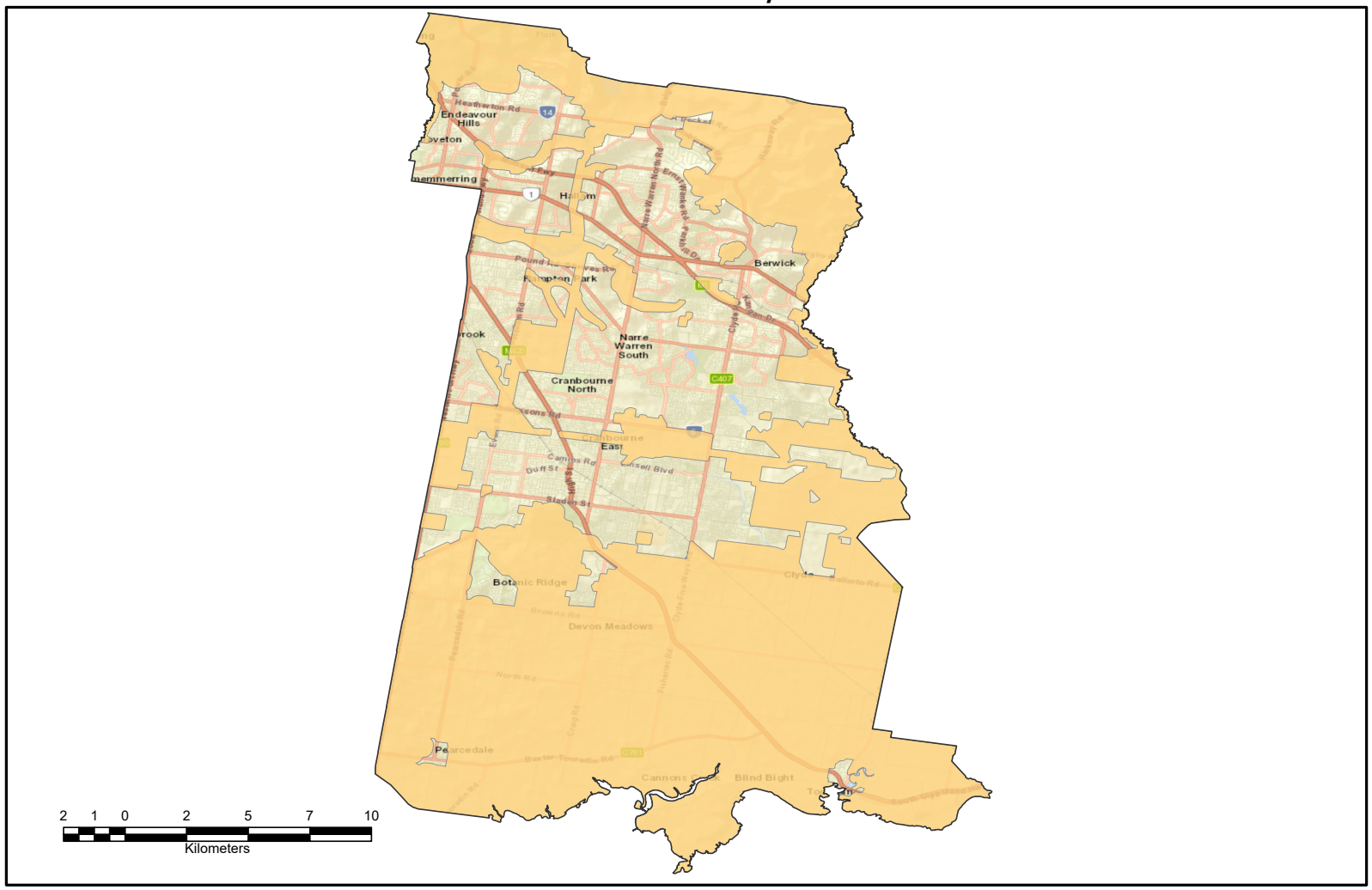


Figure 8: *City of Casey at risk of flooding in a 1% AEP[xxiii]. Annual Exceedance Probability (AEP) is the percentage chance of a flood of that magnitude or greater occurring in any given year.*

DESIGNATED BUSHFIRE PRONE AREAS - CASEY CITY - LEGL./22-173



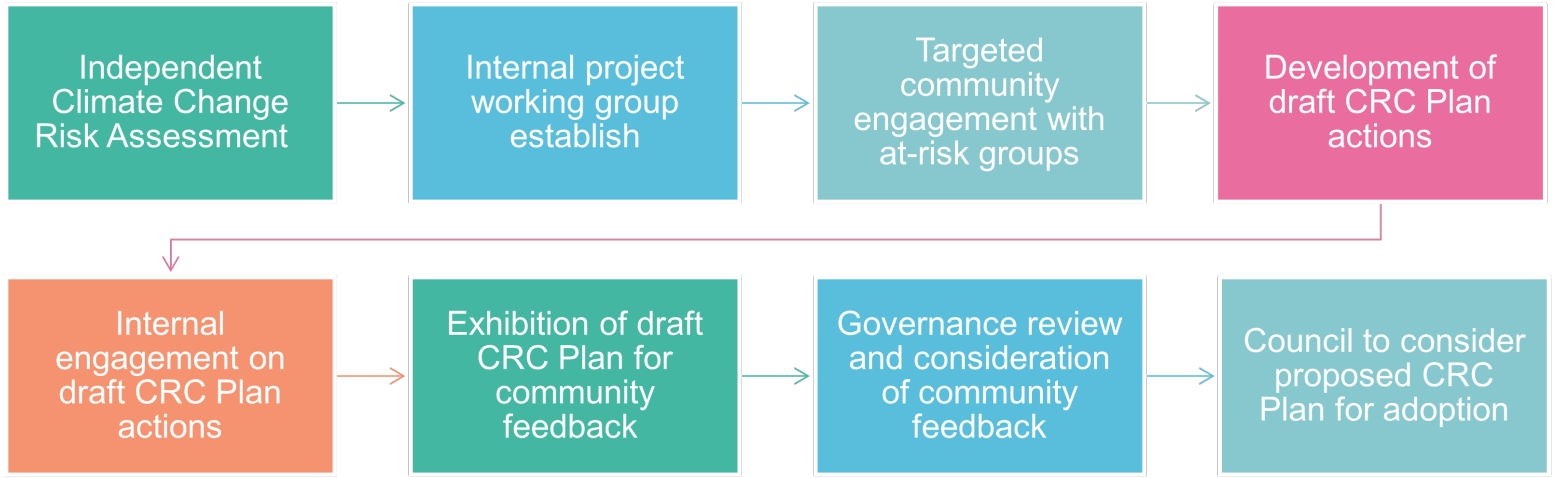
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DESIGNATED BUSHFIRE PRONE AREAS
CASEY CITY
LEGL./22-173

PREPARED BY PLANNING
DEPARTMENT OF ENVIRONMENT, LAND, WATER AND PLANNING
AUGUST 2022

Figure 9: *Areas in the City of Casey covered by a Bushfire overlay*

APPENDIX 3: HOW THE CLIMATE RESILIENT CASEY (CRC) PLAN WAS DEVELOPED





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xxxii. City of Casey Casey Coastal Framework

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