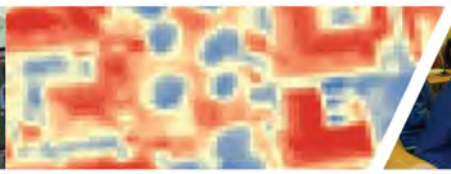

Your Council and Climate Change

UNDERSTANDING THE RISKS AND LEARNING TO ADAPT

Introduction

Training for Victorian councillors, supported by DELWP and developed in partnership with

RMIT UNIVERSITY Centre for Urban Research

naga

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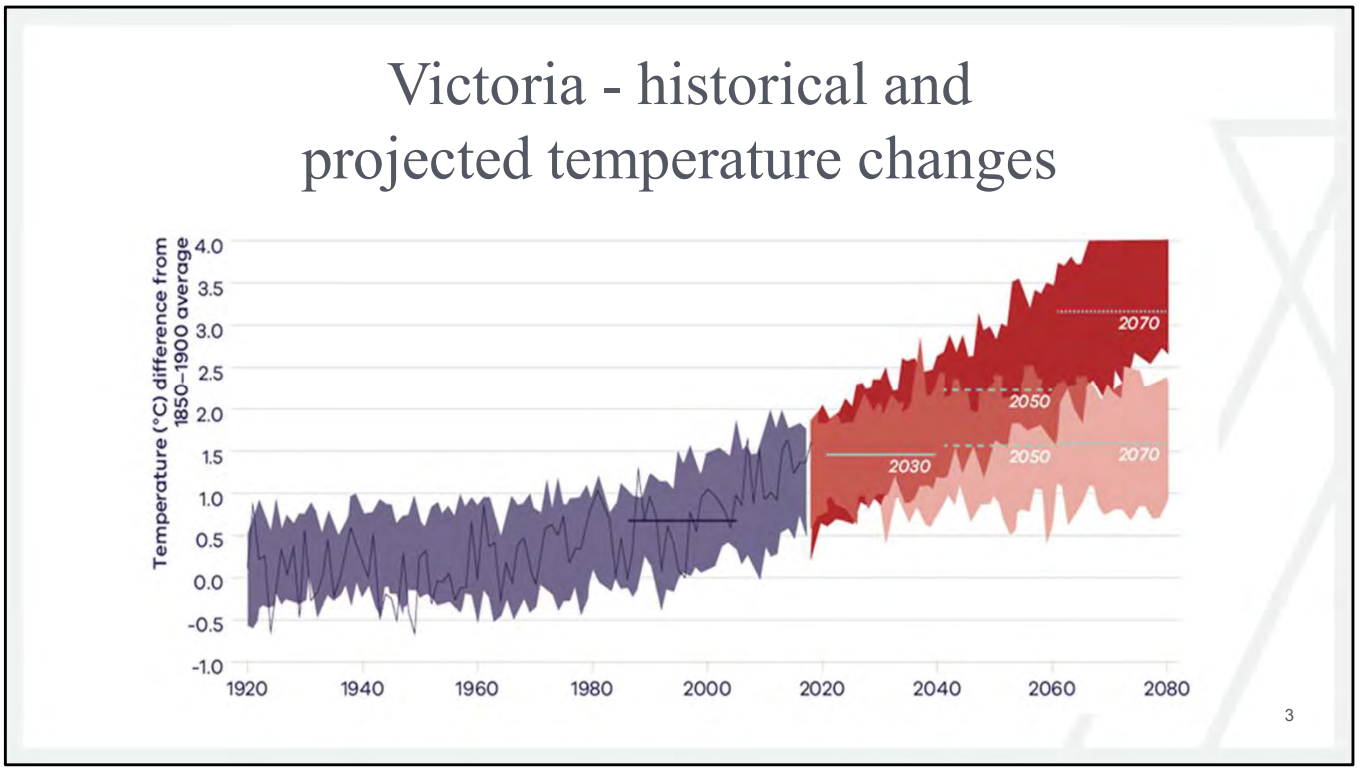
VICTORIA State Government

Climate change: what is it and it's impact?



Using **climate** models, we can project future temperature changes being caused by the enhanced greenhouse effect.

This graph shows – in the purple shaded area – what modelling indicated the global temperature in Victoria to be over the 1920 – 2019 time period. The line through the middle is the actual observed temperature. This shows th**at our modelling is pretty good.**

It also shows different scenarios depending on whether we continue to produce greenhouse gas emissions at a high or low level. The different shades of red represent different possible pathways with temperature ranges linked to those levels of emissions.

The dark red represents what may be the worst-case scenario in Victoria – a high emissions scenario with global temperatures rising by **up to** 2.4 degrees C by 2050 and up to 4 degrees Celsius by 2070.

If we do nothing to reduce emissions, we may follow this pathway.

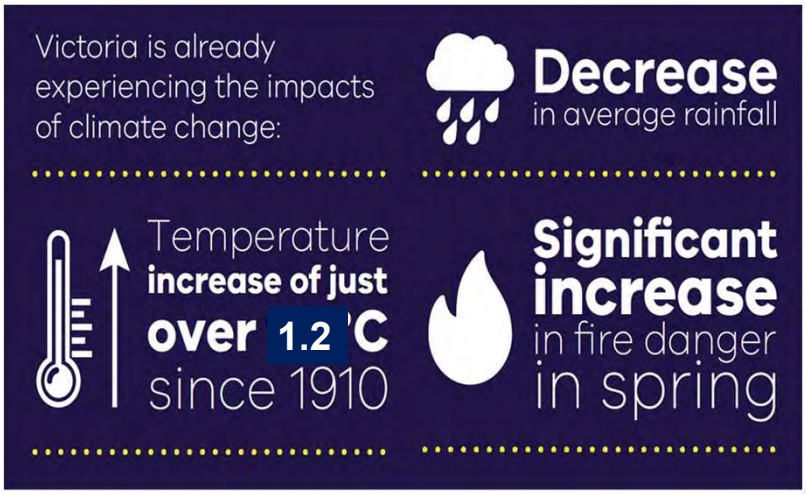
If we reduce our emissions to keep the temperature rise lower – as per the light red area on the graph, we will still see some changes as the emissions we emitted in the past have "locked in" this degree of change. This is because emissions stay in the atmosphere.

Whichever pathway we take, we are tracking towards at least a 1.5 degree C rise by 2030 here in Victoria.

Within each pathway, we need to consider regional contexts and policy impacts, and to plan in a way that considers multiple possible futures.

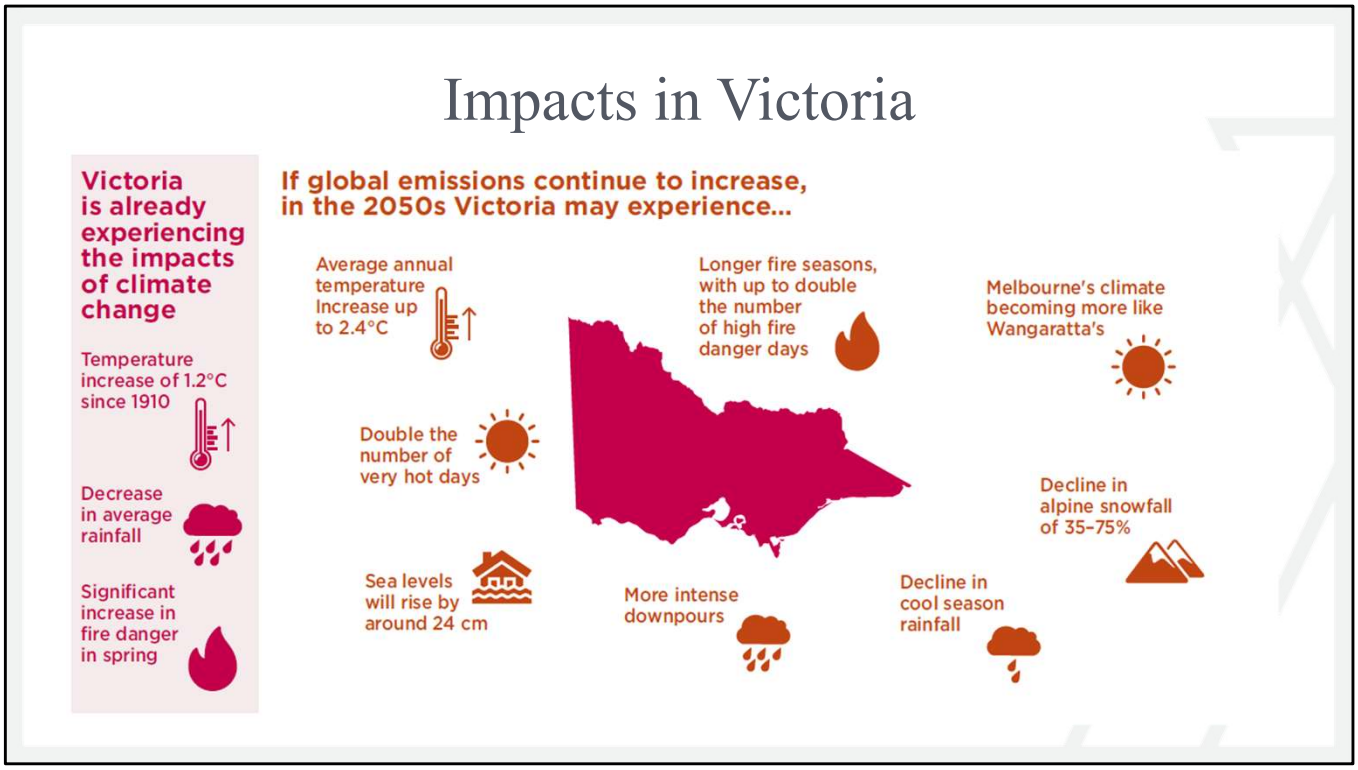
The science is clear, We must also adapt to the changes which have already occurred in order to avoid harm.

The climate is already changing



Here in Victoria, we are already experiencing the impact of **a changing climate.** We have experienced a temperature increase of just over 1.2 degree Celsius since 1910. This is already having impacts

Impacts in Victoria



What does this temperature rise mean for us here in Victoria if we keep on a high emissions trajectory?
By **2050s** – less than 30 years from now - under high emissions (RCP8.5) the number of very hot days (over 35 or 40 degrees) may double. There will be higher temperatures for longer.

There will be a decline in cool season rainfall (April to October).

When it does rain, we will see more intense downpours, increasing the risk of flash flooding.

The fire season will be longer with up to double the current number of high fire danger days.

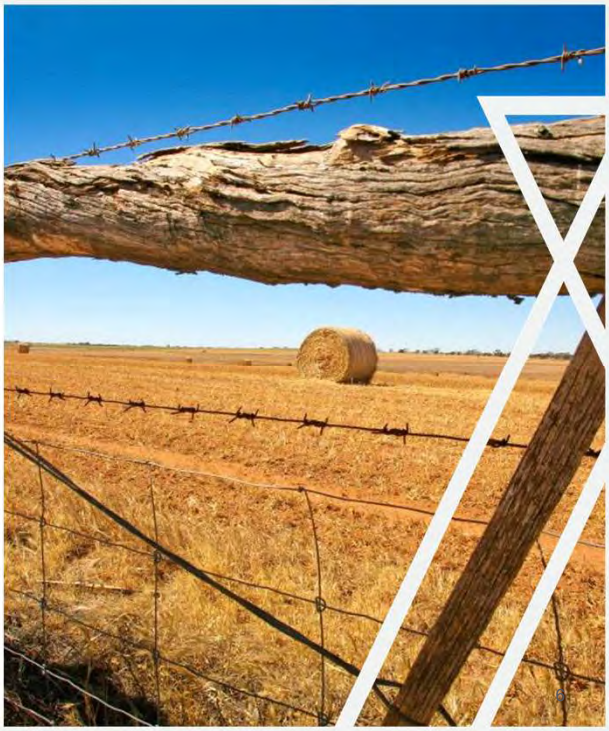
Sea levels will rise by about 24 centimetres, on average.

Alpine snowfall will decline by up to 75 per cent.

Higher temperatures

Under high emissions, Victoria can expect:

- Double very hot days by 2050s, e.g. around 16 days above 35°C in Melbourne and 4 heatwaves per year.



By the 2050s, if the current rate of global warming continues, Victorian towns and cities could experience around double the number of very hot days each year compared to a 1986-2005 average, very hot days being those that have a maximum temperature greater than 35°C, 38°C or 40°C depending on what the average temperatures usually are in your area of Victoria.

By the 2090s, average annual temperatures could be between 2.8 and 4.3 degrees warmer.

We will also see increases in extreme temperatures.

Extreme heat costs the Victorian economy on average $87 million a year (DELWP 2019). It has serious implications for health and wellbeing.

Rural areas are more economically vulnerable to heatwaves, with almost half of total economic impacts incurred by the agriculture sector.
(DELWP (2019), *The economic impact of heatwaves,* Victorian Government.)

In northeastern Victoria, hot days can damage fruit and a lack of cool days at certain times can impact fruit quality and yield. The summer temperatures in this region is expected to extend from a 3-month period to over 4 and half months by 2050. (North East Catchment Management Authority Regional Climate Explorer Tool, data for Wangaratta, extracted 23.12.20, available at: https://necma.spatialvision.com.au/climateexplorer/)

More than 7 million dollars is already lost from the Mallee Gross Regional Product each

year due to heatwave. The expected annual cost to Victoria of heatwaves event is $179 million. (DELWP (2019), *The economic impact of heatwaves,* Victorian Government.)

More people died from the heatwave preceding the Black Saturday weekend, than of the fires. (Australian Bureau of Statistics. (2015, November). *Feature Article: The Exceptional Heatwave of January-February 2009 in South-Eastern Australia* (No. 1301.0). https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1301.0Chapter1042009%E2%80%9310)

Urban heat island effect

Thermal mapping, Wyndham City Council

You may have heard of the “urban heat island effect.”

Built up areas like cities can get hotter and stay hotter than surrounding areas.

This is due to a number of factors:

- Firstly, cities have a high percentage of solid surfaces such as asphalt and concrete – these absorb, trap and re-radiate heat. They also prevent rainwater soaking into the soil.
- Secondly, cities have limited vegetation. Plants would have provided shading and cooling through evaporation from leaves
- Denser urban environments trap heat
- Construction materials – such as terracotta tiles, bricks, bitumen and concrete – absorb, trap and re-radiate heat
- Heat is producted by human activities – such as cars and air conditioners
- Lastly, air pollution creates a local ‘greenhouse’ effect, trapping heat.

This urban heat can have detrimental impacts on health and air quality.[1]

Recent research into urban heat across Greater Melbourne showed that the metro councils had an average summer Urban Heat Island reading of more than 7°C hotter than non-urban areas. The only exceptions were Mornington Peninsula, Yarra Ranges and Nillumbik.[2]

On the slide, you can see thermal image mapping from Wyndham. This shows the cooling effect of the street trees (in blue) against the heat of buildings (in red).

Moreland City Council has produced an Urban Heat Island effect action plan.[3]
Vulnerabilities they will focus on include:

- Hotspots – locations with surface temperatures of 52 degrees or above on extreme heat days
- Social vulnerability – young children aged 0-4, older people living alone, socio-economically disadvantaged groups, those who aren't fluent in English and those living in social housing
- Areas of high human activity such as commercial and retail areas, neighbourhood activity centres, bike paths, schools, kindergartens and childcare facilities
- Future zoning and population growth changes.

References

1. Moreland City Council (2016) *Moreland Urban Heat Island Effect Action Plan,* accessed 14.12.20, available at: https://www.moreland.vic.gov.au/globalassets/areas/esd/esd-uhie-urban-heat-island-effect---action-plan---final-draft-for-council-june-2016.pdf
2. Sun C, Hurley J, Amati M, Arundel J, Saunders A, Boruff B, Caccetta P (2019) *Urban Vegetation, Urban Heat Islands and Heat Vulnerability Assessment in Melbourne, 2018*. Clean Air and Urban Landscapes Hub, Melbourne, Australia
3. Moreland City Council (2016) *Moreland Urban Heat Island Effect Action Plan,* accessed 14.12.20, available at: https://www.moreland.vic.gov.au/globalassets/areas/esd/esd-uhie-urban-heat-island-effect---action-plan---final-draft-for-council-june-2016.pdf

Changes in rainfall

Under a high emissions scenario, Victorian can expect:

- Drier in all seasons except summer
- Increase in rainfall intensity > potential increase in flash flooding

Victoria is likely to continue to get drier in the long term in all seasons except summer.

This is due to changes in global wind and ocean movements.

Declining rainfall will have a higher impact certain industries such as dairy farmers, who are reliant on irrigation.

While overall rainfall will decline, when it does rain there will be an increase in extreme rainstorms and flash flooding.

We are already experiencing extreme rainstorms causing severe local impacts.

In February 2020, extreme precipitation across Melbourne, the La Trobe Valley and East Gippsland resulted in 388 calls to the State Emergency Service in just six hours - for flooding, building damage and fallen trees.

The warmer the atmosphere, the more water vapour it can hold, and basic physics enables scientists to estimate that the intensity of extreme rainfall may increase by about 7% for each degree of warming.

Changes in atmospheric dynamics are also likely to cause heavier rainfall events when the

conditions are right (Wasko et al., 2016). For example, extreme rainfall events have been associated with the combination of thunderstorms with other weather systems over Victoria (Dowdy and Catto, 2017). Together with a warmer atmosphere, this means that an increase of 14% has been observed in the most extreme short-duration rainfall extremes in Victoria (Guerreiro et al., 2018). From page 26 Victoria's Climate Science Report 2019 (DELWP 2019).

The future will see increasing risks to safe reliable water supplies due to a decline in cool season rainfall when water storage receives most inflows.

Increased fire danger

Under a high emissions Victoria can expect:

- Extended fire season
- Up to double the number of high fire danger days by the 2050s

The number of very high fire danger days in spring has already increased.

Victoria is likely to have a longer fire season and the number of very high fire danger days is likely to increase. Heat and drought exacerbate bushfires.

By the 2050s under a high emissions scenario, there will be a 60 per cent increase in the number of high fire danger days in Bendigo, Ballarat and Shepparton compared to 1986–2005.

In the 2019/20 bushfire season alone:

- 65,000 people were displaced from their homes between July 2019 and February 2020.
- 3,100 homes were destroyed. This could mean longer-term displacement for over 8,000 people.

- People who had to leave their homes have faced impacts to their livelihoods, education, security, health and mental wellbeing.

- Nearly three billion animals – mammals, reptiles, birds, and frogs – were killed or displaced . (Commonwealth of Australia (2020) *Royal Commission into National Natural Disaster Arrangements: Report.)*

The indirect effects of bushfires are felt by those not in bushfire areas. Canberra experienced the worst air quality of any major city in the world in January 2020, and other Australian capital cities experienced poor air quality from bushfire smoke kilometres away.

Bushfires can also impact water quality.

Former fire fighter and emergency leaders from around the country have been warning that the worsening bushfire conditions have been aggravated by climate change.

Sea level rise

Under high emissions Victorian can expect:

- Sea levels to continue to rise by up to half a metre by the 2070s, with new research suggesting even greater changes beyond 2100.
- More than 75 per cent of coastal reserve land will see a 20 cm rise in sea level*

Rising sea levels result in an increased risk of coastal erosion and inundation – threatening coastal ecosystems, local landscapes and crucial infrastructure.

Sea levels will rise in Victoria and extreme sea levels from storm surge events will also impact the coast (DELWP 2019 – Victoria's Climate Science Report 2019).

Sea level rise not only results in changes in mean sea level but can also change the frequency and intensity of extreme sea level events, such as storm tides that occur when high tides combine with strong winds and low-pressure systems. Even a 50 cm increase in mean sea level would contribute to a significant increase the hazards of extreme sea levels, such as coastal erosion and flooding.

For example, a 1-in-100-year storm tide height in Geelong is likely to rise from 110 cm to 220 cm by the end of the century for a high emissions scenario (McInnes et al., 2013).

Coupled with erosion and population growth, we will see increasing pressure on our coasts. This is known as ‘coastal squeeze’.
(Association of Bayside Municipalities (ABM) (2017) *Bay Blueprint 2070*, ABM).

Almost all coastal reserves with high biodiversity values and those with high recreation and tourism values are predicted to be impacted.

Of the coastal reserves with community facilities such as club houses, surf lifesaving facilities and tourist sites, 88 per cent may be impacted by 2040. (Victorian Environmental

Assessment Council (2020), *Assessment of Victoria's Coastal Reserves: Final Report,* Victorian Environmental Assessment Council, Melbourne.)

Declining snowfall

Victorian alpine areas are projected to continue to experience declining snowfall – between 35 and 75% by the 2050s under high emissions

Declining snowfall will have implications for alpine biodiversity and animals already under threat – this includes the Mountain Pygmy Possum, Baw Baw Frogs and the Powerful Owl.

Less snow will impacts on the tourism industry. Visitor numbers may decline.

('*Vic Alpine areas are projected to continue to experience declining snowfall – between 35 and 75% by the 2050s under high emissions*' is Harris, R. M. B., Remenyi, T. & Bindoff, N. L. 2016. The Potential Impacts of Climate Change on Victorian Alpine Resorts. A Report to the Alpine Resorts Co-ordinating Council. Hobart, Australia: Antarctic Climate and Ecosystems Cooperative Research Centre.)

Vulnerability to impacts

- Natural environment
- Built environment and infrastructure
- People
  - Older and younger people
  - Culturally and linguistically diverse communities
  - New arrivals
  - People with mental and physical health issues
  - Housing insecurity
- Industry
  - Small and medium-sized enterprises
  - Agriculture
  - Outdoor workers

12

Everyone is impacted by climate-related hazards, but some groups are more vulnerable to the effects of **extreme** heat than others. This includes babies, very young children and older people. (DHHS (2019) *Heat health plan for Victoria: Protecting health and reducing harm from extreme heat,* Victorian Government, Melbourne)

Community members who speak a language other than English might not be able to access emergency communications and receive risk warnings during extreme events. Refugees may be more likely to be in poor quality housing and/or have low socioeconomic status. These factors contribute to vulnerability to climate change.

Certain physical health conditions make people more vulnerable to **extreme** heat. Climatic events can also be difficult for those with mental health issues who may be vulnerable to rapid, unplanned changes such as emergency events.

People in insecure housing and those sleeping rough or in temporary shelters are more vulnerable in emergency situations. They also may not be factored into emergency plans and communications. (Sevoyan, Arusyak & Hugo, Graeme & Feist, & Tan, George & McDougall, & Spoehr,. (2013). *Impact of Climate Change on Disadvantaged Groups: Issues and Interventions.* NCCARF)

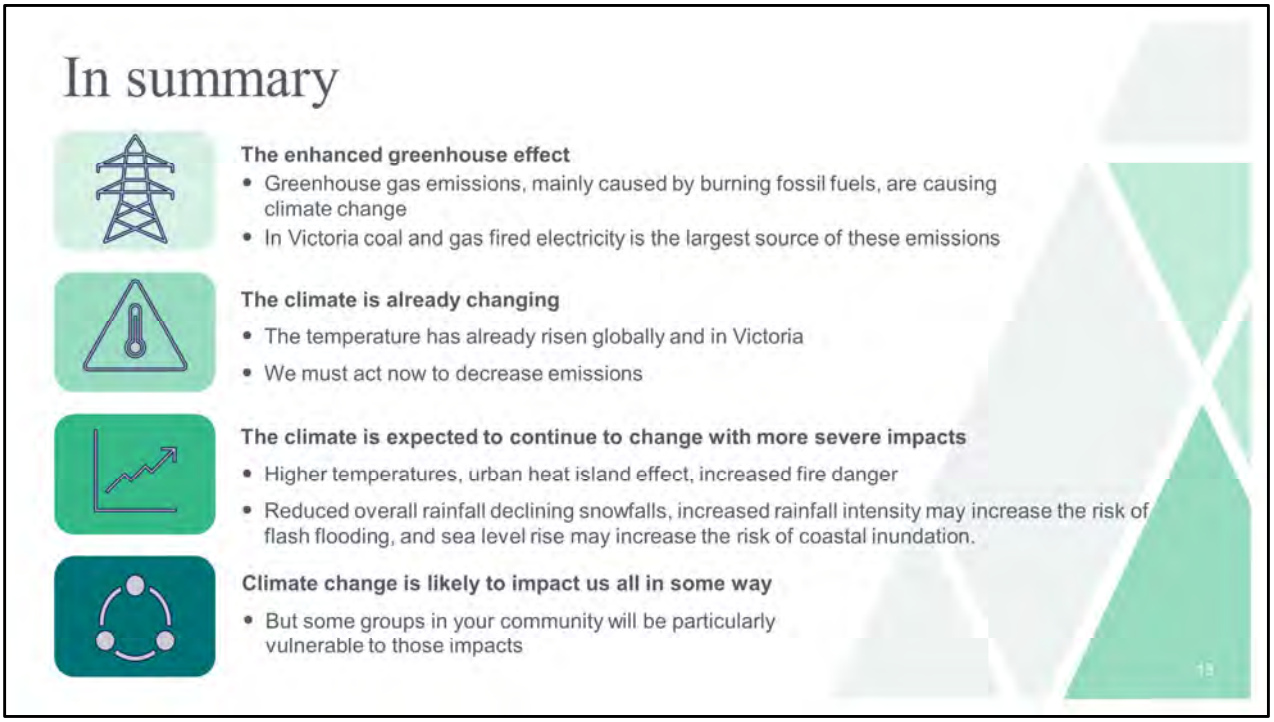
Workers across many sectors may be affected. Small and medium enterprises are likely to be disproportionately impacted by climate change. (DELWP (2016), *Victoria's Climate Change Adaptation Plan 2017-2020,* Victorian Government, Melbourne.)

With few staff and smaller margins, they may be less able to deal with significant losses caused by extreme events and emergencies.

The health and safety of people working outdoors during **extreme** heat and other extreme weather events is a consideration.

Climate change will also place pressure on the agricultural sector, which is particularly vulnerable to extreme weather events.
(DELWP (2019), *The economic impact of heatwaves,* Victorian Government.)

Our built environment – our buildings, roads and infrastructure is affected by climate hazards. Electricity infrastructure can be damaged by extreme events, resulting in electricity supply being cut off. Concrete erosion is exacerbated by extreme heat. (IPWEA (2018), Climate Change Impacts on the Useful Life of Infrastructure, Practice Note 12.1, IPWEA.)



In this first section, you'll learn about the science of climate change and what we expect in the future.

We will also identify the impacts of climate change on different communities in Victoria.

How we respond

Mitigating climate change

Depending on how quickly we cut greenhouse gas emissions, there could be significant changes in the future.

Emissions need to be cut – also known as **mitigating** climate change - including by supporting communities to do so.

Adapting to climate change

Emissions to date mean some effects of climate change are ‘locked in’.

Therefore, we also need to plan, prepare for and respond to the impacts of climate change. This is known as **adapting to climate change**

Climate change: impacts on councils

Climate related hazards are already impacting councils and the risks are expected to increase in the future.

Climate change poses a risk to core council services, assets and your community

Councils can take action.

As we touched on in the introduction slides, climate change impacts a number of areas of council responsibility. We'll go through these and highlight some of the main impacts with examples.

Planning & building

- Statutory Planning
- Strategic Planning
- Urban Design
- Environmentally Sustainable Design referrals
- Building Surveying

Planning is a key area in which Council can support the community through the impacts of climate change.

More than half of Victorians live in housing that gets too cold during winter and too hot during summer. Improving quality of housing can be addressed through the planning system.
(Sustainability Victoria (2020) *Linking Climate Change and Health Impacts,* accessed 16.12.20, available at: https://www.sustainability.vic.gov.au/About-us/Research/Health-and-Climate-Change-Research)

Councils can also utilise land-use planning through urban design and requirements for environmentally sustainable design.

For example, to reduce urban heat, councils can introduce controls related to tree provision in new developments. Rain and stormwater gardens can be installed to lessen the impacts of stormwater runoff.

Capturing and reusing stormwater also helps in irrigating street trees and passive and active open space.

Strategic precinct planning can minimise emissions and reduce urban heat creation in

new developments.

Councils also have a role to play incentivising home and building owners to use onsite renewable energy such as solar panels.

Resources may also be impacted if more planning decisions get taken to VCAT if councils don't understand and factor in future projections for flood mapping and coastal erosion in planning policies and when issuing permits to developments.

As the climate changes, your council's resourcing needs might change. For instance, as flood and fire risk become more widespread, there might be additional work for municipal building surveyors.

It is essential that planning needs to be informed on new, up-to-date climate science where available, rather than historical data.

Health & community services

- Public health
- Environmental health
- Maternal and child health
- Immunisation programs
- Family and youth services
- Aged and disability services

Climate change will have direct and indirect impacts on all aspects of the health and community services your council provides.

Council plays an important role in identifying and preparing for **public health** impacts of climate change through the Municipal Public Health and Wellbeing Plan.

Council also has a role in **environmental health** through infectious disease control, food safety, and advice for disease-carrying pests such as mosquitoes. Climate change will indirectly impact all of these aspects of environmental health.[1]

For example, between Oct 2016 and Apr 2017, Victoria experienced a large Ross River virus outbreak, with almost 2,000 cases reported. Ross River virus is distributed by insects such as mosquitos. Increased instances of flooding and warmer conditions makes it very likely that outbreaks of Ross River and other insect-spread diseases will increase.[2]

Council also needs to consider how climate change might impact **maternal and child health care and family and youth services.**[3]

During the 2014 heatwave, Hobsons Bay City Council observed a spike in clients cancelling services for up to six days following the heatwave.[4] You'll need to consider how safe and comfortable residents are in accessing services during events such as

heatwaves and how else your council could offer services.

Older people may suffer more during heat events and be more isolated during other extreme events and need more support. During the week of the January 2014 heatwave, 621 people went to hospital emergency departments due to heat. This was five times more than expected for that period. Forty per cent of those people were 75 or older.[5]

Image credit: Royalty free image – attribution not required for illustrative purposes

References
1. Victorian Government (2015) 'Guide to councils,' accessed 5 Nov 2020, available at: https://knowyourcouncil.vic.gov.au/guide-to-councils/what-councils-do
2. DHHS (2020), *Tackling climate change and its impacts on health through public health and wellbeing planning: Guidance for local government 2020,* Victorian Government, Melbourne.
3. Victorian Government (2015) 'Guide to councils,' accessed 5 Nov 2020, available at: https://knowyourcouncil.vic.gov.au/guide-to-councils/what-councils-do
4. How Well Are We Adapting (n.d.), 'Spike in cancellation rates.' accessed 15.12.20, available at: https://adapt.waga.com.au/StrengtheningCommunity#
5. Department of Health (2014) *The health impacts of the January 2014 heatwave in Victoria*, State Government of Victoria, Melbourne.

Assets & infrastructure

- Land
- Roads
- Buildings
- Drains
- Footpaths
- Bridges

The footbridge over Barongarook Creek in the heart of Colac washed away in the flash flooding of September 2016. Image: South West Climate Change Portal

Victorian councils control over $100 billion in assets and infrastructure, which may be at risk of damage from extreme weather events.

- Physical impacts such as wind, bushfire, flooding, heatwaves and other extreme weather events may impact infrastructure. An example is bridge washout, as captured in Colac Otway Shire in 2016. This flooding caused response and recovery works estimated at $4 million.

- The bitumen on roads can deteriorate at faster rates due to more exposure to heat so roads may need more maintenance in the changing climate.

- Steel rusting and concrete corrosion can result from increased sea spray and wetting from storm surge and sea level rise.

- Stormwater drainage may need to cope with larger volumes of water and more frequent flash flooding.

- Air quality in public buildings can be impacted by bushfire smoke unless the building is suitably well sealed building with well maintained ventilation systems

Any rebuilding of assets should be to a standard that considers climate projections, not

historical standards.

Parks, recreation & culture

- Libraries and museums
- Sport and recreation facilities (sports grounds, swimming pools, support for clubs, etc.)
- Leisure and arts facilities (public art, theatre productions, public festivals and events)
- Parks, gardens and reserves (including walking and bike trails)
- Coordination of one-off events

Image credit: Hobsons Bay City Council

Reduced rainfall and increased sea level, heat and fire danger may impact Council's parks, sporting facilities and buildings.

For example, less overall rainfall could mean that sports fields and gardens need more watering, and more people might attend council parks, pools and other recreation facilities to escape the heat during summer and throughout the year as the climate warms.

Droughts can close sports grounds for longer periods of time, disrupting the community benefits of sport.

Aquatic centres are large users of energy. As we transition to a zero carbon economy, will these centres have a reliable, affordable energy supply?

Climate change poses a risk to biodiversity. There may be increased maintenance requirements, for example as a result of invasive species. In some areas and conditions, vegetation may need to be replaced with drought-tolerant species that will survive in future conditions.

Areas with associated cultural heritage might also be put at risk. For example, beach boxes on the foreshore are at risk from sea level rise, sea level extremes, and erosion.

Maintenance and operations

- Road construction
- Footpath and kerb concreting works
- Maintenance of assets and public open space
- Weed control
- Tree maintenance
- Street sweeping
- Office buildings

Image credit: Greater Shepparton City Council

Councils need to consider disruptions to regular maintenance regimes as a result of climate change, such as extreme heat preventing work outdoors. Some weather events such as floods also require significant recovery and clean-up works.

Maintenance and operations will be critical for ensuring the resilience of public infrastructure – this includes drainage works to help with flood risk and pumps for irrigation.

There's a need for a transition to new materials for road and footpath construction - with higher reflectivity or better drainage. Many councils are now using permeable paving materials as part of their water sensitive urban design.

Street trees provide vital cooling and shade. Their growth can be affected by the impacts of climate change. Councils may need to adjust maintenance regime or plant drought-tolerant species. Weeds may grow across a wider area and for a longer season that previously experienced, so costing more to manage or needing a different way to deal with them.

Customer services centres, other public buildings as well as offices where back office staff are working may need to close due to extreme weather events, so disrupting council operations.

Staff working outside may be impacted by extreme weather events and not be able to do their work safely at those times contributing to lost productivity.

More…

- Emergency Management
- Waste Management
- Supporting your Community

Emergency Management

As we have covered, c**limate change projections suggest increased risks of bushfires, flood, droughts and heatwaves in the future.**

- Considerations include, Councils across Vic
- Victoria need to consider the appropriateness of emergency relief centres in housing the community. Do they provide adequate and safe relief with future changing conditions?

Waste Management

Waste and landfill emissions can account for a significant portion of municipal emissions.

- Waste and landfill pick up, disposal and management is important, including complex considerations such as whether decommissioned landfill sites near the coast are impacted by sea level rise and coastal erosion exposing materials.

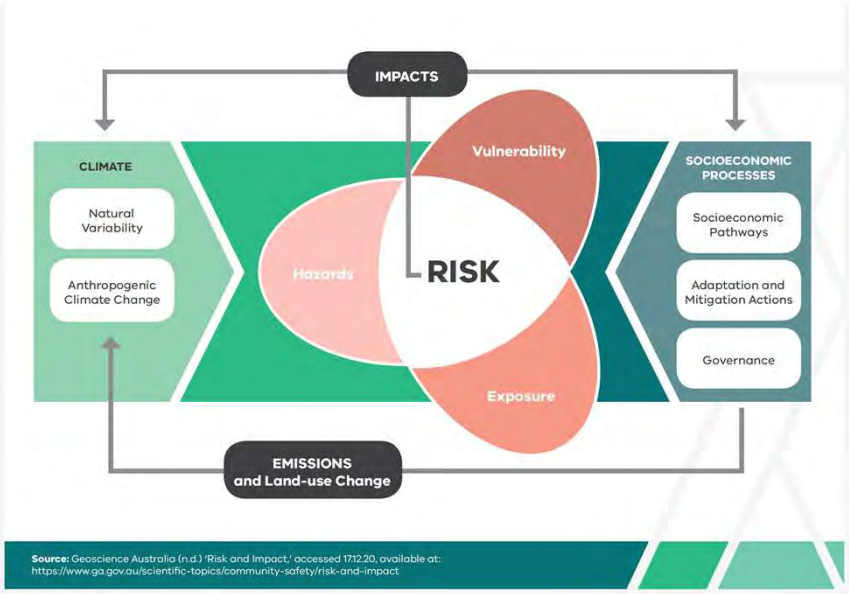
And finally, Supporting your Community – businesses, communities, different groups

- Climate change will impact across society in different ways.
- As more communities are more concerned about climate change, they may expect more of a response from their council

Understanding risks

Understanding risks

** We'll upload a postcard resource to help understand risks**



Natural hazards and natural disasters are different: a hazard doesn't automatically lead to a disaster - it depends on whether risk has been assessed, managed and prepared for.

The framework in the slide is already being used for natural hazard management in earthquake or cyclone prone areas. It has been adapted to look at climate risk.

The severity of impacts as a result of weather and climate events is dependant on our level of exposure and vulnerability.

- Hazards refer to possible future events that may cause loss of life, injury, or other health impacts, as well as damage and loss, such as flood events.
- Exposure refers to people, animals, infrastructure, assets in an area where a hazard may occur, such as a house on a floodplain.
- Vulnerability refers to the lack of capacity of people, livelihoods and homes when exposed to a hazard. For instance, people in low social economic communities who can't afford insurance may be more vulnerable to hazards.

An example of how your council could limit exposure is understanding climate projections for flooding and implementing planning overlays so that your municipality

doesn’t have homes exposed to hazards. Responses may also address vulnerabilities to specific hazards such as a lack of flood insurance.

There are different types of risk that your council will face:

Physical risks we've talked about already**.** These include flash flooding and bushfires, as well as slow onset impacts that more heatwave events pose a risk to physical infrastructure, our natural environments, and human health.

Another risk is transition risks
There is also a need to transition to a zero emissions economy and this to varying degrees and in different contexts is likely to involve changes to policy, technology and markets, for instance - shifts in energy sources and zero emissions technology such as electric cars. Risks occur if these shifts aren't planned for or unexpectedly occur rapidly. For example, council fleet vehicles could be impacted by rapid deployment of new low emission vehicles in other markets.

Transition risk extends to reputational risk – how communities perceive business, industry and governments are taking action on climate change.

Transition risk also extends to potential litigation. There are more examples of the public – consumers, rate payers and community members taking legal action against decision makers including major corporations, financial institutions (super) and governments for their decision making relating to climate change.

In regards to councils, claims could be made around not planning adequately for climate risks, planning too onerously, and failure to protect properties and assets.

Councils have already faced legal challenges in jurisdictions across Australia. For example, a Victorian council decision granted consent for residential developments in a coastal region. But a regional coastal board, set up under the Victorian Coastal Management Act 1995, challenged the council decision at a tribunal. It argued that the proposed developments were inappropriate in light of projected sea level rises as a result of climate change. The tribunal agreed and determined that development consent should not be granted.

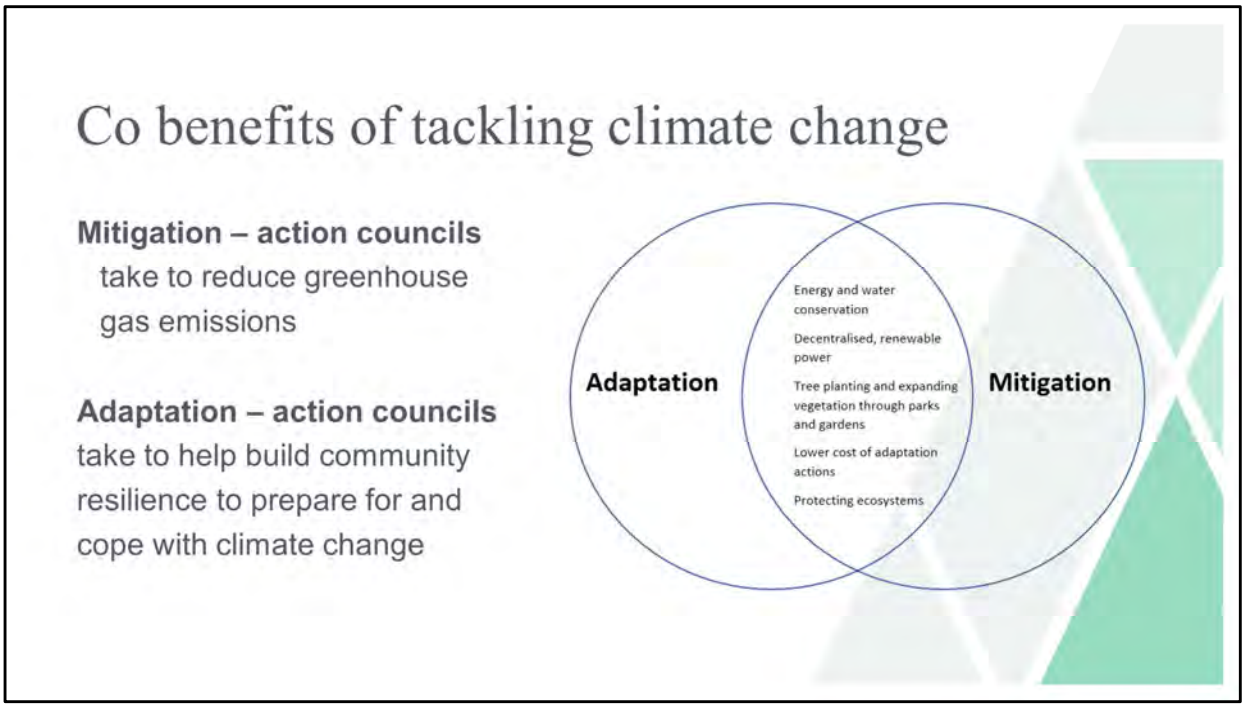
Another example is that the Murray Darling Basin Royal Commission report found the Murray Darling Basin Authority demonstrated ongoing negligence in not taking climate change into account. The report found that scientific advice from CSIRO was treated as "inconvenience"; the Authority relied on historical data for water allocations, not future projections; and had deferred climate change consideration to their next strategic review.

We'll look more at local government roles and responsibilities in a later section.

It's really important that when councils adapt to climate change, the action does not have unintended, negative consequences for current or future generations. This negative consequence is known as maladaptation.

For instance, it is important to maintain thermal comfort in community facilities such as libraries, so that people are a safe and comfortable temperature. However, using air conditioning increases greenhouse gas emissions. An adaptation which could meet current needs while also reducing emissions is increasing the energy efficiency of buildings to reduce reliance on air conditioning. This keeps the community safe and comfortable, without exacerbating future climate change.

A sea wall might protect private property, but it can exacerbate erosion on other areas of the coast and reduce public access, recreation and other value. A 'living shoreline' which uses vegetation, sand, and rock to stabilize the coast might be more appropriate for protecting the coast and meeting the broader needs of the community.



Taking either an adaptation or mitigation action can have benefits for the other. For example, planting trees can over time absorb more emissions, as well as providing shade and a cooling effect on heatwave days. Similarly, increasing forms of active transport can decrease emissions while also improving air quality – providing a health benefit.

Home energy efficiency measures such as insulation and block out blinds, which can reduce emissions and also be a cost effective way keep a home cool on hot days.

Another example is the Shadeways project at the City of Greater Bendigo, which provides a platform that integrates maps of land surface temperatures to inform users of urban hot spots.

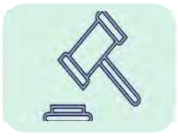
This enable pedestrians and cyclists to understand how their route could expose them to extreme temperatures.

The platform interfaces well known mapping systems such as Google Maps and Apple Maps, allowing users to take advantage of hotspot information using apps they are familiar with. The platform also enables the council to communicate the benefits of greening and to enable walkers and cyclist to move in comfort and safety.

This example links actions that promote mitigating climate change, such as walking and cycling, with allowing the community to do that at a safe and comfortable temperature, so enabling adaptation to climate change.

Acting on climate change also provides other co-benefits - it improves comfort and health, can lower the cost of living through reduced electricity bills, and increased greening can increase biodiversity.

Understanding risks_recap



Climate change poses more than just a physical risk

- Risks are dependent on level of exposure and vulnerability to hazards
- Councils need to consider physical and transition risks

Councils need to tackle climate risk without creating problems for future generations

There are co-benefits of tackling climate risk

- Actions can provide both adaptation and mitigation benefits

Climate change impacts on councils

Vulnerability in our local community

Vulnerability to impacts

- Natural environment
- Built environment and infrastructure
- People
  - Older and younger people
  - Culturally and linguistically diverse communities
  - New arrivals
  - People with mental and physical health issues
  - Housing insecurity
- Industry
  - Small and medium-sized enterprises
  - Agriculture
  - Outdoor workers

Animals, people, plants and businesses are all impacted by climate change.

The natural environment will be impacted by reduced rainfall, increased heat and reduced snowfall potentially causing damage or destruction to habitat.

Changes in the climate pose a risk to isolated ecosystems and the species which rely on them. This will compound existing challenges such as invasive species and disease control. Events such as bushfires will also threaten the viability of some species. (DELWP (2016), Victoria's Climate Change Framework, Victorian Government, Melbourne.)

Our built environment – our buildings, roads and infrastructure are affected by climate hazards. For instance, without adequate management, electricity infrastructure can be damaged by extreme events, resulting in electricity supply being cut off. Concrete erosion is exacerbated by extreme heat. (IPWEA (2018), Climate Change Impacts on the Useful Life of Infrastructure, Practice Note 12.1, IPWEA.)

Everyone is impacted by climate related hazards, but some groups are more vulnerable to the effects of heat than others. This includes babies, very young children and older people. (DHHS (2019) *Heat health plan for Victoria: Protecting health and reducing harm from extreme heat,* Victorian Government, Melbourne.)

Community members who speak a language other than English might not be able to access emergency communications and receive risk warnings during extreme events.

Refugees may be more likely to be in poor quality housing and/or have low socioeconomic status. These factors contribute to vulnerability to climate change.

Certain physical health conditions make people more vulnerable to heat. Climatic events can also be difficult for those with mental health issues who may be vulnerable to rapid, unplanned changes such as emergency events.

People in insecure housing and those sleeping rough or in temporary shelters are more vulnerable in emergency situations. They also may not be factored into emergency plans and communications. (Sevoyan, Arusyak & Hugo, Graeme & Feist, & Tan, George & McDougall, & Spoehr,. (2013). *Impact of Climate Change on Disadvantaged Groups: Issues and Interventions.* NCCARF.)

Workers across many sectors will be affected. Small and medium enterprises are likely to be disproportionately impacted by climate change. (DELWP (2016), *Victoria's Climate Change Adaptation Plan 2017-2020,* Victorian Government, Melbourne.)
With few staff and smaller margins, they may be less able to deal with significant losses caused by extreme events and emergencies.

The health and safety of people working outdoors during heat and other extreme weather events is at risk.

Climate change will also place pressure on the agricultural sector, which is particularly vulnerable to extreme weather events. (DELWP (2019), *The economic impact of heatwaves,* Victorian Government.)

Climate related hazards are already impacting councils and the risks are expected to increase in the future.

Climate change poses a risk to core council services, assets and your community

Councils need to act on climate change.

As we touched on in the introduction slides, climate change impacts a number of areas of council responsibility. We'll go through these and highlight some of the main impacts with examples.

Climate change is a risk for Victorian councils

- Planning & building
- Health & community services
- Assets & Infrastructure
- Operations, maintenance, waste services
- Parks, conservation & recreation
- Emergency management
- Finance & insurance
- Legal liability

Climate change affects all areas of council operations – from planning to parks and recreation to maintaining assets to carrying out community services. It will impact on your community and how you support them.

Heat, fire, reduced rainfall, and extreme weather events such as storm surges and intense downpours already have an impact on council and communities.

As a council, you'll want to consider:

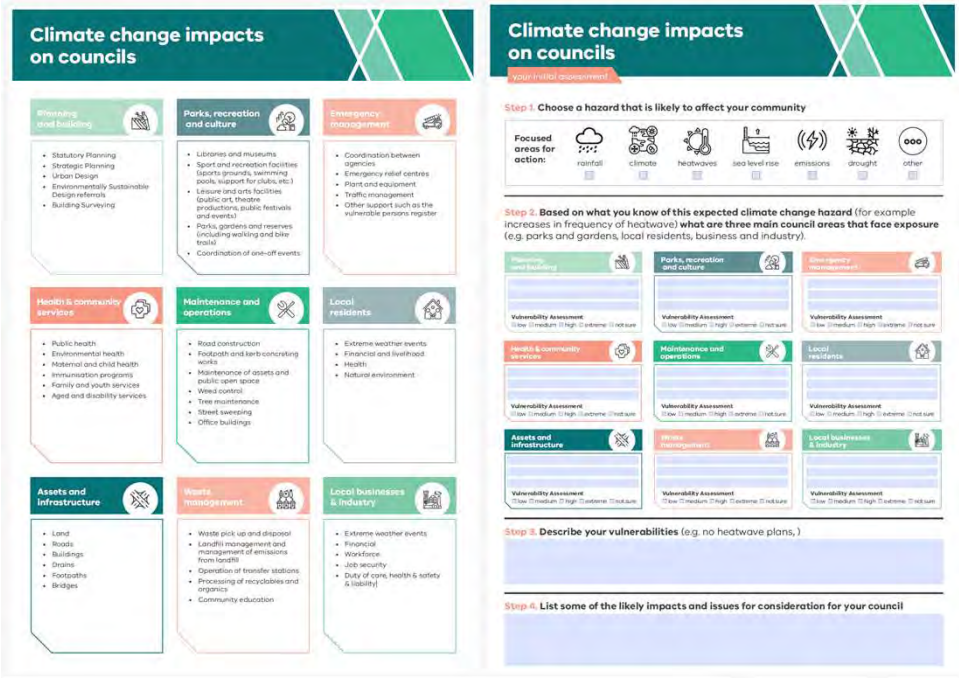
- *Will homes and businesses be increasingly exposed to fire and floods?*
- *Do our planning policies push for zero carbon, climate resilient homes?*
- *How will we continue to deliver services to our most vulnerable?*
- *How will changes such as an increase in heat wave events impact on the physical and mental health of our residents?*
- *How can we support our residents to transition to cleaner forms of energy and ensure their homes are resilient to future changes in the climate?*
- *Will our drainage assets be able to manage increasingly intense storms and flooding?*
- *Will road maintenance need to be increased to deal with the impact of higher heat on bitumen?*
- *How do we ensure staff can safely continue to deliver service standards?*
- *How do we protect the native vegetation that acts as a carbon sink and cools our*

urban areas?

- Will we be able to maintain our parks in extreme weather?
- How will we ensure our open spaces provide cool and shaded areas?
- How will we provide energy to our leisure centres in a future that's phasing out fossil fuels?
- How will we cope with higher attendance at our aquatic centres on the more frequent hot days?
- How does our emergency management system cope with the increased risks?
- Are we prepared for longer fire seasons, or for low risk areas now being at a higher risk of fire?
- Will we be able to get insurance for our assets in the future
- Will we be found negligent for failing to act on known risks?
- What are the costs to individuals, the community and council if we don't embed changed conditions into our decision-making?
- What do our community expect of us in protecting them from the impacts of climate change?

Image credit: Hobsons Bay - Flooding - Esplanade and Sargood St

Your assessment



Climate change impacts on councils

Planning and building
- Statutory Planning
- Strategic Planning
- Urban Design
- Environmentally Sustainable Design referrals
- Building Surveying

Parks, recreation and culture
- Libraries and museums
- Sport and recreation facilities (sports grounds, swimming pools, support for clubs, etc.)
- Leisure and arts facilities (public art, theatre productions, public festivals and events)
- Parks, gardens and reserves (including walking and bike trails)
- Coordination of one-off events

Emergency management
- Coordination between agencies
- Emergency relief centres
- Plant and equipment
- Traffic management
- Other support such as the vulnerable persons register

Health & community services
- Public health
- Environmental health
- Maternal and child health
- Immunisation programs
- Family and youth services
- Aged and disability services

Maintenance and operations
- Road construction
- Footpath and kerb concreting works
- Maintenance of assets and public open space
- Weed control
- Tree maintenance
- Street sweeping
- Office buildings

Local residents
- Extreme weather events
- Financial and livelihood
- Health
- Natural environment

Assets and infrastructure
- Land
- Roads
- Buildings
- Drains
- Footpaths
- Bridges

Waste management
- Waste pick up and disposal
- Landfill management and management of emissions from landfill
- Operation of transfer stations
- Processing of recyclables and organics
- Community education

Local businesses & industry
- Extreme weather events
- Financial
- Workforce
- Job security
- Duty of care, health & safety & liability

Climate change impacts on councils

Your initial assessment

Step 1. Choose a hazard that is likely to affect your community

Focused areas for action: rainfall, climate, heatwaves, sea level rise, emissions, drought, other

Step 2. Based on what you know of this expected climate change hazard (for example increases in frequency of heatwave) **what are three main council areas that face exposure** (e.g. parks and gardens, local residents, business and industry).

Planning and building | Parks, recreation and culture | Emergency management
Health & community services | Maintenance and operations | Local residents
Assets and infrastructure | Waste management | Local businesses & industry

Vulnerability Assessment ☐ low ☐ medium ☐ high ☐ extreme ☐ not sure

Step 3. Describe your vulnerabilities (e.g. no heatwave plans,)

Step 4. List some of the likely impacts and issues for consideration for your council

Business, community, national, state & local government responses to climate change

Reference

The potential damages from climate change to Australia at current global emissions patterns are:

- $584.5 billion in 2030
- $762 billion in 2050
- more than $5 trillion in cumulative damages from now until 2100.

These costs are conservative – they exclude the bulk of costs of floods and bush fires, pollution, damage to environmental assets and biodiversity losses.

Conversely, the national costs of effective emissions reduction – based on a carbon price or renewables target – are estimated at $35.5 billion from 2019 to 2030, or 0.14% of cumulative GDP; a negligible impact.

A recent Australian study estimated that with no further global action the cost of climate change damages to Victoria through to 2050 would be over $150 billion, increasing dramatically to about $1 trillion by 2100. This is likely to underestimate the true cost, as it does not include most of the costs of floods, bushfires, pollution and biodiversity loss.[i]

[i] Kompas, T., Witte, E. and Keegan, M. (2019*) Australia's Clean Energy Future: Costs*

and Benefits, MSSI Issues Paper 12, Melbourne Sustainable Society Institute, The University of Melbourne, from https://sustainable.unimelb.edu.au/__data/assets/pdf_file/0012/3087786/Australias_Clean_Economy_MSSI_Issues_Paper12.pdf

The energy transition

- Renewable energy sources accounted for approximately 16% of Victoria's electricity generation in 2018 (Victorian Government 2018)
- Wind & solar are the cheapest options for electricity generation (ARENA 2020)

Action on getting to zero emissions through renewables is already happening.

Businesses are transitioning now

- Bunnings, Kmart Group and Officeworks have accelerated plans to reduce their emissions, including targeting net zero emissions by 2030. Commitments include 100% renewables for all operations by 2025
- Woolworths, which accounts for 1% of all electricity used in Australia, also plans to be 100% renewables by 2025

Local government is also part of this transition.

- The largest local government buying group for renewable energy of 47 councils in Victoria will be procuring 238 GW of renewable electricity for their own operations from 2021. This is the equivalent to powering nearly 45,000 homes and accounts for over half of all the electricity used by all Victorian councils.

- Victorian local government tripled the amount of solar on their own rooftops between 2017 and 2020

Climate change has been shown to put businesses at risk of litigation, and businesses have responded to this

- In 2020, Brisbane man Mark McVeigh reached a settlement with Rest Super Fund, due to its failure to disclose how it was managing the risks of climate change. The fund subsequently stated: “Climate change is a material, direct and current financial risk to the superannuation fund across many risk categories, including investment, market, reputational, strategic, governance and third-party risks.”

- In another case, the Abrahams family sued the Commonwealth Bank of Australia (CBA), alleging that it violated the Corporations Act of 2001 with the issuance of its 2016 annual report, which failed to disclose climate change-related business risks— specifically including possible investment in the controversial Adani Carmichael coal mine.
- As a result, in 2017, CBA made substantive changes to its annual report, acknowledging climate risk, and the Abrahams dropped the case. CBA have now undertaken scenario and risk analysis of their portfolio.

- A world first case has also been brought against the Australian Government, where

a Melbourne law student is suing them failing to disclose the risk climate change poses to Australians' super and other safe investments. O'Donnell is bringing a class action "alleging the Australian Government (as well as two government officials) have failed in a duty to disclose how climate change would impact the value of government bonds." "Experts say it is the first where is the first instance of a national government being sued for lack of transparency on climate risks" (Australian Government sued by 23-year-old Melbourne student over financial risks of climate change - ABC News)

Grounds for litigation:

- Breach of duty of disclosure as a promoter of the eAGBs (as a regulated person required to provide an information statement) **under the Corporations Act**
- Contravention **under ASIC Act** by provision of misleading information on a financial product
- Breach of duty to exercise powers/functions with reasonable care and diligence under **s25 of the PGPA**

The Paris Agreement led to some understanding of the risks implied in the transition to the low-carbon economy, and especially associated financial risks. There is significant concern that climate change may cause systemic financial shock on the economy.

The Financial Stability Board is an international body that monitors the global financial system. It created the Task Force on Climate-related Financial Disclosures (TCFD) in response to this understanding, to improve and increase reporting and understanding of the impact of climate risks and climate-related financial information.

The TCFD recognises that "**Climate change presents financial risk to the global economy.**"

This report has been very influential in the private sector, and several government bodies are exploring its implications for government too.

Also, the 16th edition of the **World Economic Forum's Global Risks Report** was released in January 2021. This is an annual report published by the World Economic

Forum which presents the major risks the world will be facing in the coming year. It's based on a "Global Risks Perception Survey" completed by about 800 members of the WEF.
In 2021, "extreme weather" and "climate action failure" are the top two highest *likelihood* risks of the next ten years. They also appear in the top 10 highest impact risks of the next ten years (#2 and #8 respectively).

This has also been recognised across investors, banks and the insurance industry:

- BlackRock is the world's largest asset manager, with nearly US$7 trillion in assets. It is removing companies that get more than 25% of their revenue from thermal coal production from its actively-managed portfolios, stocks and bonds. It is also identifying other sources of climate risk within its investment portfolio. Larry Fink, Chairman and CEO of BlackRock, has stated that climate change **"has become a defining factor in companies' long-term prospects" and that "climate risk is investment risk"**

- Moody's Investors Service provides international financial research on bonds issued by commercial and government entities and is considered one of the big three credit rating agencies. In January 2020, it issued an announcement that 'climate-related risks pose a long-term credit challenge for New South Wales,' citing in particular:
    - Drought and bushfire have materially disrupted economic output and increased budget pressure
    - Water-related stress will pose greater risk to Greater Sydney over the longer term

- Munich Re covers reinsurance and primary insurance. It has warned that the costs of insurance could become prohibitive. This could become a social issue over the long-term, entrenching inequality between those who can and cannot afford insurance.

- One in every 19 property owners across Australia face the prospect of insurance premiums that will be effectively unaffordable by 2030 – that is, costing 1% or more of the property value per year.

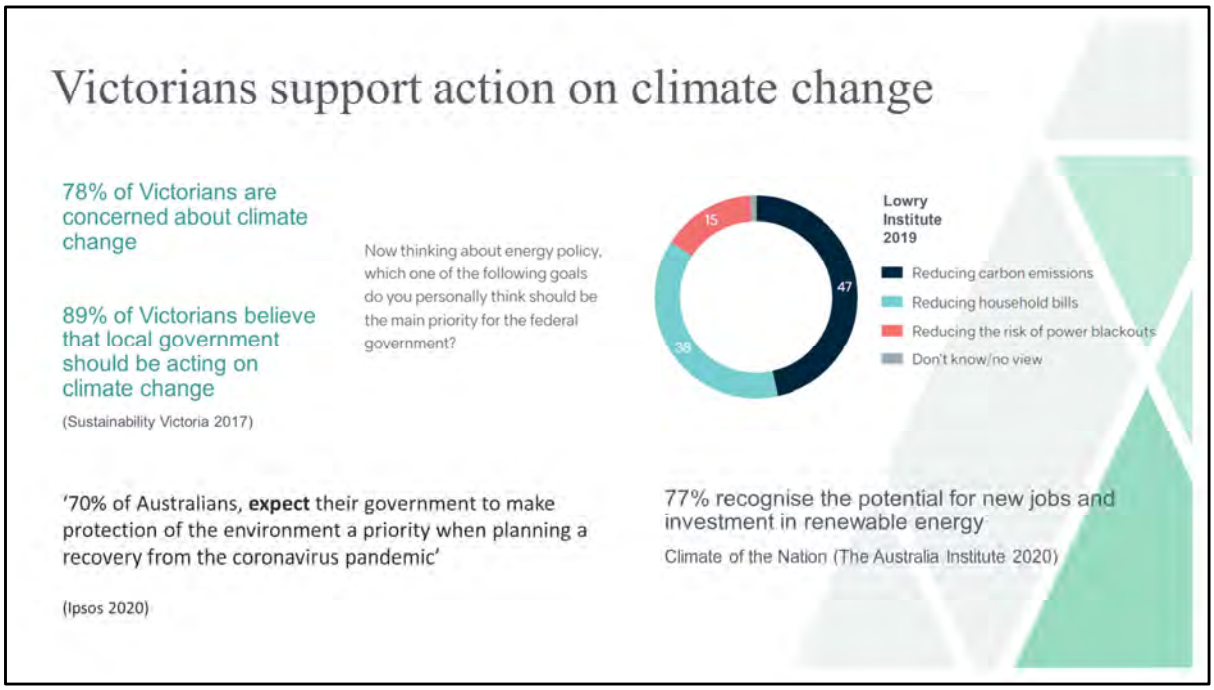
- Banks are approaching climate change as a financial risk that they need to manage. Bank Australia offers discounted home loans for homes that meet minimum energy efficiency standard. ANZ released its climate change policy in 2020. It will stop directly financing any new coal-fired power plans or thermal coal mines including expansions by 2030. Loans will only be provided for large-scale office buildings if the buildings are highly energy efficient.

- Over 30 councils in Australia have pledged to divest from fossil fuels

Climate change as a Directors duty is relevant for all businesses.

- In 2016, a landmark legal opinion determined that climate change risks represent risks to Australian companies, which courts would consider foreseeable. **It said that directors who fail to consider "climate change risks" now could be found liable for breaching their duty of care and diligence in the future.**

We'll talk more about duty of care and diligence in the context of councillors in a later section.



The Australian public is on board with tackling climate change too.

As shown on the slide, research into Victorian attitudes towards climate change reveal there is a high level of concern about climate change.

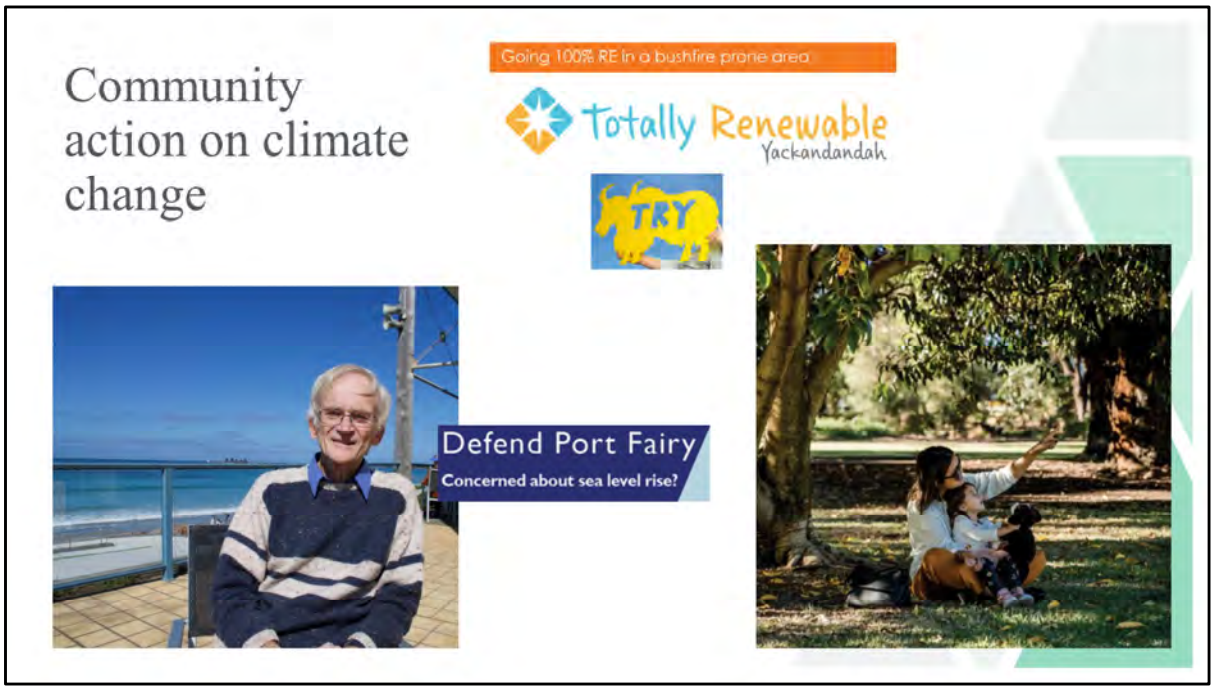
There is strong support for climate action at all levels of government, and Victorians' express a strong willingness to act themselves.

Polling of Australians in 2019 showed that when it comes to energy policy, the majority thought the main priority of the federal government should be reducing carbon emissions, ahead of reducing household bills.

Even amid COVID-19, polling by the Australia Institute demonstrates the level of concern about climate change. 82% of those polled worried climate change will result in more bushfires, and 77% see the opportunity we could realise by investing in renewables.

In polling conducted in June 2020, 70% of Australians stated that they expect their government to make protection of our environment a priority when planning for

recovery from the COVID-19 pandemic.



Communities are not just worried about climate change or expecting their governments and industry to act, they're also taking action themselves

In Port Fairy, sea level rise and erosion exposed two decommissioned landfills in Moyne Shire Council, exposing rusty metal, glass and asbestos. Residents got together to monitor erosion on the beach. This has seen an ongoing citizen science project, where residents monitor sand levels twice a month, and submit their findings to Moyne Shire Council. This has inspired similar action across the state.

More than a fifth of homes in Australia have rooftop solar, and in Victoria nearly half a million solar systems had been installed by 2020.

Anticipating this continued growth, some electricity companies are planning for investing in a time when 95% of Victorians have rooftop solar.

A survey of Queenslanders in 2018 showed that the driver for uptake of solar was largely concerns over rising electricity bills, but also those affluent enough to not be put off by upfront costs.

For those who don’t have the roof space, community energy can sometimes provide a way of purchasing renewables. Community energy is where a community group initiates, develops, operates and benefits from a renewable energy resource or energy efficiency initiative.

Totally Renewable Yackandandah is a community group with the goal of achieving 100% renewable power for the town of Yackandandah, and energy sovereignty for the town by 2022. The group has worked closely with the regional electricity distributor to implement microgrids run by renewables and launched an electricity retailer to facilitate local energy generation.

Community concern about lack of tree coverage in Victoria Park in WA led to a community developed Urban Forest Strategy. The aim was to increase canopy cover from 10% to 20% over 2 years through community involvement, partnerships with large land owners and support from the council. The key method to keep down cost was through a volunteer-led urban foresters network that can be mobilised for a mass planting and stewardship program.

Local government can support community projects like this as we will see later.

Key messages

The cost of inaction is too high

- Inaction on climate change will cost Victoria over $150 billion through to 2050, increasing dramatically to about $1 trillion by 2100
- The COVID-19 pandemic is an opportunity to reset and move to a zero carbon, resilient future
- Victorians want strong action on climate change from all levels of government, community is already acting

Business and industry are acting on climate risks & opportunities

- Action on climate risk is already happening
- Directors and investors are also acting by switching investments away from those at risk from climate change

Reference

A recent Australian study estimated that with no further global action the cost of climate change damages to Victoria through to 2050 would be over $150 billion, increasing dramatically to about $1 trillion by 2100. This is likely to underestimate the true cost, as it does not include most of the costs of floods, bushfires, pollution and biodiversity loss.[i]

[i] Kompas, T., Witte, E. and Keegan, M. (2019*) Australia's Clean Energy Future: Costs and Benefits*, MSSI Issues Paper 12, Melbourne Sustainable Society Institute, The University of Melbourne, from https://sustainable.unimelb.edu.au/__data/assets/pdf_file/0012/3087786/Australias_Clean_Economy_MSSI_Issues_Paper12.pdf

Local Government case studies

Case studies to inspire

The good news is that local governments are already leading the way on climate change action.

Councils are tackling climate change through their own operations and by supporting their communities.

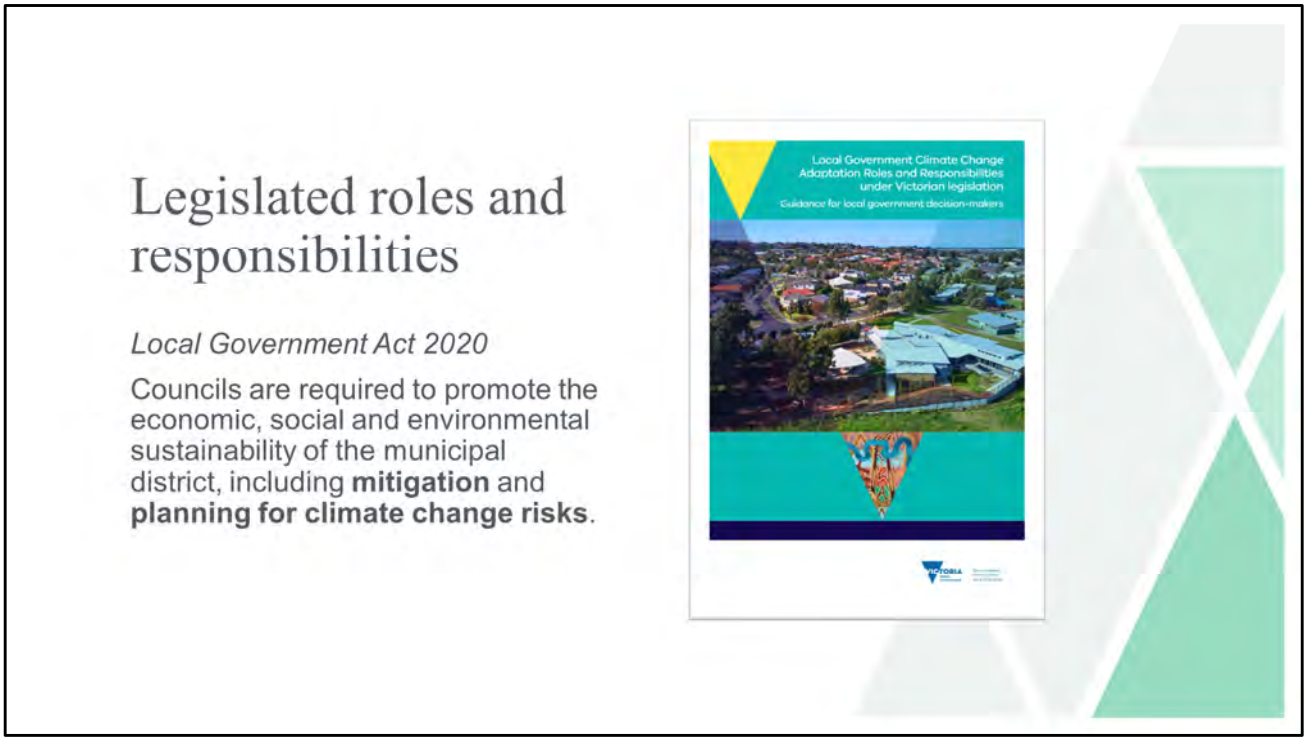
They are introducing ambitious emissions reduction projects. They are also helping their local communities adapt to the impacts of climate change.[1]

Nearly 100 councils across Australia have declared a climate emergency – taking urgent action to tackle climate change and calling on others to do the same.[2]

It's important that councils consider climate change across their whole remit, and don't just leave it to the environment team.[3]

But councils also recognise they can't do it alone, so they partner with and advocate others.[4]

Our local government legislated responsibilities



The role of a Council is to provide good governance for the benefit and wellbeing of their community.

As shown on the slide, the Local Government Act 2020 for Councils to promote the economic, social and environmental sustainability of the municipal district, including **mitigation** and **planning for climate change risks**."

Other relevant overarching principles include:

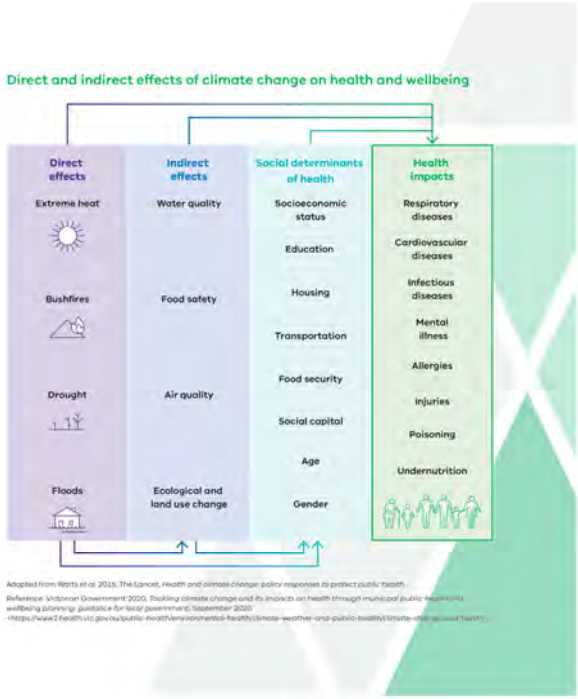
- Councils are required to give priority to achieving the best outcomes for the municipal community, including future generations.
- Regional, state, and national plans and policies are to be taken into account during council's strategic planning.
- Council must ensure its decisions, actions, and information are transparent.

There is a clear expectation that decision-making is supported by robust and transparent practices, and that the long-term adverse consequences of climate change for future generations are incorporated into council planning, decisions and actions.

Municipal Public Health and Wellbeing Plans

"Climate change is both the greatest threat to public health of the 21st century and the greatest public health opportunity"

(DHHS 2020)



We'll now run through two other Acts that are relevant to council' roles and responsibilities.

The *Public Health and Wellbeing Act 2008* requires councils to prepare a four-year municipal health and wellbeing plan following each council election.

According to the Climate Change Act 2017, local governments are to consider climate change when preparing their municipal public health and wellbeing plan. They must consider:

a. the potential impacts of climate change relevant to the decision or action (adaptation) and
b. the potential contribution to the State's greenhouse gas emissions of the decision or action (mitigation)

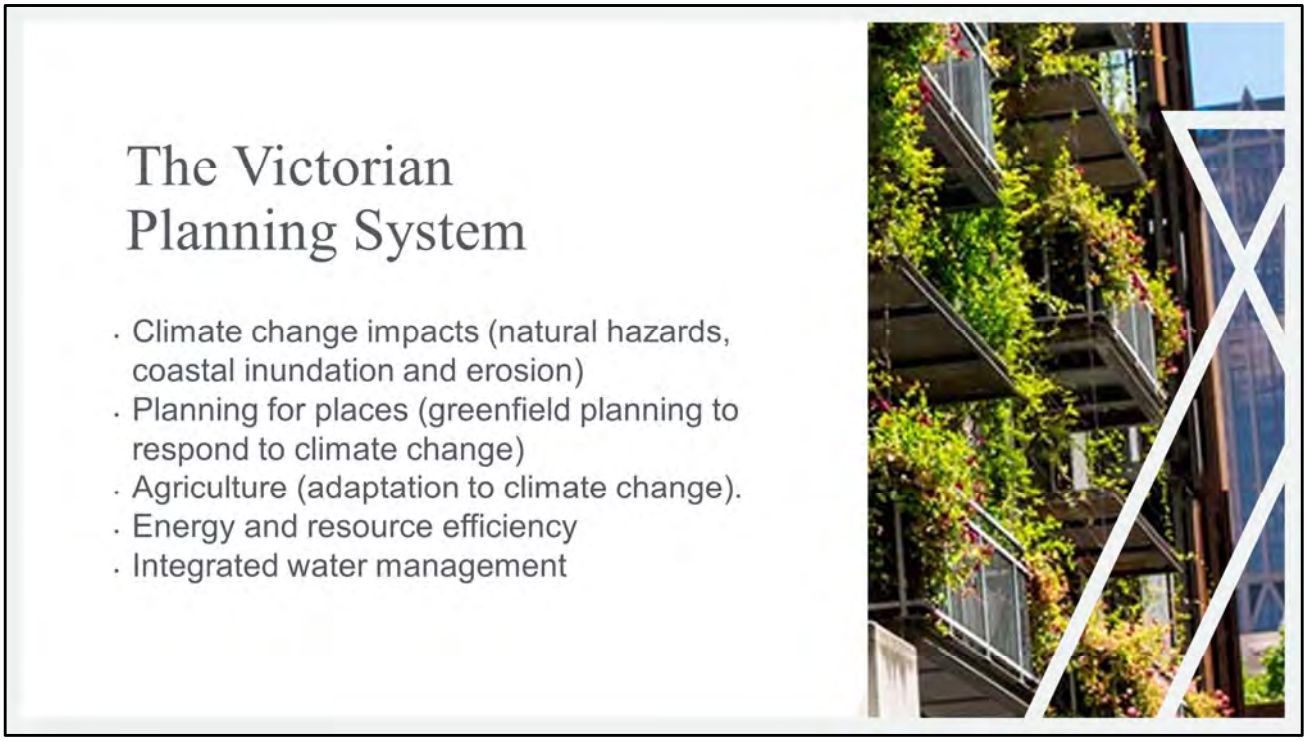
Local governments must also have regard for the Victorian public health and wellbeing plan, which lists 'tackling climate change and its impact on health' as a priority.

The state government has produced guidance for councils on how to tackle climate change through their health and wellbeing plans

[Instruction for trainer – provide a copy of this guidance document]

The guidance steps through the planning cycle and includes internal and external engagement,

implementation and evaluation.



The purpose of the Planning and Environment Act 1987 is for the planning framework to support decisions in the 'long-term interests of all Victorians'.

It establishes broad objectives for planning in Victoria that are relevant to climate change responses, including:

- sustainable land use and development
- the protection of biodiversity and natural resources, and
- the maintenance of ecological processes.

There are also a range of clauses focussed on planning responses to hazards such as bushfire, flood, erosion and heat.

Through Local Planning Schemes, councils can incorporate climate change adaptation through their Municipal Strategic Statement, Local Planning Policy and specific planning controls such as a schedule to a zone or an overlay.

Planners must take into account:

- Climate change impacts (natural hazards, coastal inundation and erosion)
- Planning for places (greenfield planning to respond to climate change)
- Agriculture (adaptation to climate change).

- Energy and resource efficiency
- Integrated water management

The roles and responsibilities guidance suggests ways to incorporate climate change adaptation decisions into planning, via:

- being pre-emptive and precautionary in responding to climate change
- communicating climate change adaptation within your community
- incorporating climate change adaptation across all aspects of planning.

Local Gov Act 2020

Victorian Climate Change Act 2017

Municipal Public Health and Wellbeing Plans

Victorian Planning system

Local Government Roles and Responsibilities

A summary

Local Government Act 2020

The Local Government Act 2020 strengthened the mandate for councils to act on climate change.

The role of a Council is to provide good governance for the benefit and wellbeing of their community.

"[Councils are required to promote the economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks."

Other relevant overarching principles include:

- Councils are required to give priority to achieving the best outcomes for the municipal community, including future generations.
- Regional, state, and national plans and policies are to be taken into account during council's strategic planning.
- Council must ensure its decisions, actions, and information are transparent.

There is now a clear expectation that decision-making is supported by robust and transparent practices, and that the long-term adverse consequences of climate change for future generations are incorporated into council planning, decisions and actions.

DELWP (2020) Local Government Climate Change Adaptation Roles and Responsibilities under Victorian Legislation Guidance for local government decision-makers, Victorian Government, Melbourne.

Victorian Climate Change Act 2017

The Climate Change Act 2017 provides Victoria with a world-leading legislative foundation to manage climate change risks, maximise the opportunities that arise from decisive action, and drive Victoria's transition to a net zero emissions, climate resilient community and economy.

Six guiding principles for decision making provide criteria for 'assessing the suitability of council decision-making' and a way to demonstrate due process.

Informed decision-making: Responses should be based on the best available evidence in the context of uncertainty, and be flexible and iterative, allowing for adjustments as circumstance change and new information is made available.

Integrated decision-making: Decision-makers should give priority to responses that are most likely to provide the greatest net social, economic and environmental benefit for Victoria, and consider the cost of climate change, including externalities and long-term costs.

Risk Management: Responses should ensure that risks are addressed by those who are best placed to manage them; avoid unintended consequences; not undermine our ability to adapt to climate change over the long-term; and consider the trade-offs and understand and recognise the costs of and limits to adaptation.

Compatibility: Responses should: build on the experiences of regions sectors, communities and industry; complement existing and planned work; and contribute to and be compatible with efforts to reduce emissions as well as adapt to climate change.

Equity: Responses should: be equitable and fair; consider both the present and the short, medium and long-term future; and adhere to principles of intra and intergenerational equity.

Community Engagement: Responses should: actively involve the community in setting policy directions and priorities, and value and respect the knowledge and perspectives of Traditional Owner groups and Aboriginal Victorians.

Municipal Public Health and Wellbeing Plans

The ***Public Health and Wellbeing Act 2008*** requires councils to prepare a four-year municipal health and wellbeing plan following each council election.

According to the Climate Change Act 2017, local governments must consider climate change when preparing their municipal public health and wellbeing plan. They must consider:

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The state government has produced guidance for councils on how to tackle climate change through their health and wellbeing plans.

The guidance steps through the planning cycle and includes internal and external engagement, implementation and evaluation.

Refer to: DHHS (2019) Victorian public health and wellbeing plan 2019-2023, Victorian Government, Melbourne.

Tackling climate change and its impacts on health through municipal public health and wellbeing planning. Guidance for local government, 2020.

The Victorian Planning System

The purpose of the Planning and Environment Act 1987 is for the planning framework to support decisions in the 'long-term interests of all Victorians'.

It establishes broad objectives for planning in Victoria that are relevant to climate change responses, including:

- sustainable land use and development
- the protection of biodiversity and natural resources, and
- the maintenance of ecological processes.

There are also a range of clauses focused on planning responses to hazards such as bushfire, flood, erosion and heat.

Through Local Planning Schemes, councils can incorporate climate change adaptation through their Municipal Strategic Statement, Local Planning Policy and specific planning controls such as a schedule to a zone or an overlay.

Planners must take into account:

- Climate change impacts (natural) hazards, coastal (inundation and erosion)
- Planning for places (greenfield planning to respond to climate change)
- Agriculture (adaptation to climate change).
- Energy and resource efficiency
- Integrated water management

The roles and responsibilities guidance suggests ways to incorporate climate change adaptation decisions into planning, viz:

- being pre-emptive and precautionary in responding to climate change
- communicating climate change adaptation within your community
- incorporating climate change adaptation across all aspects of planning.

Planning and Environment Act 1987 (Vic.).

DELWP (2020) Local Government Climate Change Adaptation Roles and Responsibilities under Victorian Legislation: Guidance for local government decision-makers, Victorian Government, Melbourne.

DISCLAIMER: While this summary of Local Government roles and responsibilities refers to legislative and other legal frameworks, it is intended as general guidance only and does not constitute legal advice.

As the threat of climate change is now clearly established through legislation, national and state policy and international agreements, it is likely a court will see the risks and impacts of climate change are now reasonably clearly foreseeable.

Three fundamental messages based on established legal principles relating to risk and liability management:

- First, statutory authorities, including local government, have a duty of care in exercising their functions and powers to manage foreseeable risks.
- Secondly, climate change hazards and risks are significant and foreseeable, so decision-makers are accountable for considering these matters in making a decision as part of exercising their duty of care.
- Thirdly, good decision making is enabled by acting as a 'reasonable person' in making decisions guided by law.

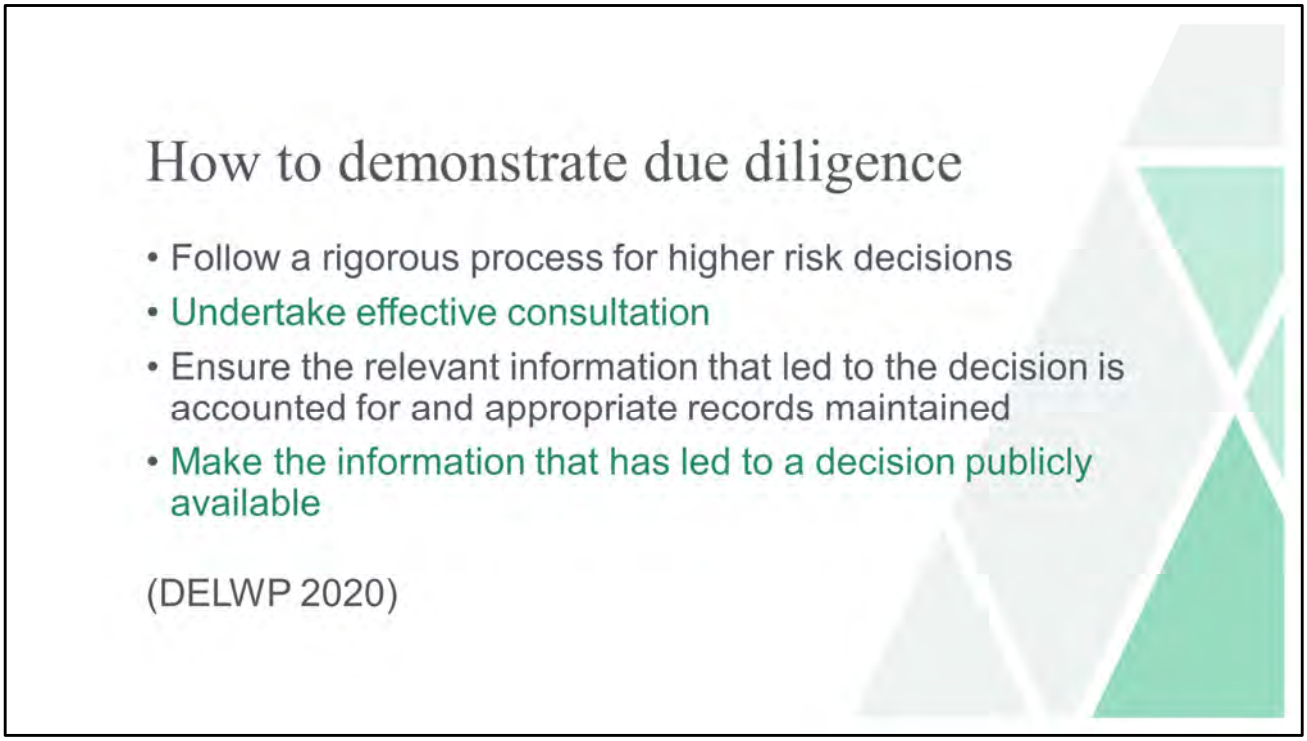
Councils have a duty of care in relation to climate change adaptation – this has been established in Victoria through VCAT since 2010, and in other jurisdictions. **Because of this duty of care, councils may be open to claims in negligence.**

For local government, a duty of care may arise in relation to:

• development approvals

• the provision (or lack thereof) of protective works
• or the provision (or lack thereof) of information or statements which are considered by a court to be negligent.

Council's duty of care requires that it undertakes **due diligence.**



To demonstrate due diligence, it is advisable that councils:

- follow a rigorous process for higher risk decisions, such as Australian Standard AS 5334-2013: Climate change adaptation for settlements and infrastructure – a risk-based approach
- undertake effective consultation with experts and their community around specific decisions
- maintain appropriate records and make the information that has led to a decision publicly available.

Council Pledge

You are invited to submit a voluntary council pledge, under the Climate Change Act 2017.

Pledges acknowledge the substantial work being undertaken by local government.

There is no deadline and no set template. Pledges may include:

- Emission reductions, adaptation and risk
- Council operations and the broader local community
- A climate action plan, actions list or statement
- Individual councils or groups of councils

Resources for estimating emissions and examples of existing pledges:
climatechange.vic.gov.au/local-government/council-pledges

Roles and responsibilities_a recap

Local governments have legislated responsibilities to address climate change

- The new *Local Government Act 2020* strengthens local governments' role on climate change
- Decision makers have a duty of care
- Failure to act may leave Council open to claims of negligence
- Climate change must be considered in your municipal public health and wellbeing plan
- Use the Planning Scheme and strategic planning processes to respond to climate change
- Seek your own legal advice where necessary

Meeting these responsibilities requires a "whole of council" approach

- Climate change action needs to be embedded across all strategic planning
- Action is needed from the top – from all decision makers
- It's not just the responsibility of the environment team, it's a whole of Council responsibility

Checklist for Local Government decision makers

Leadership and action at the local level

Integrate climate change into council decision making

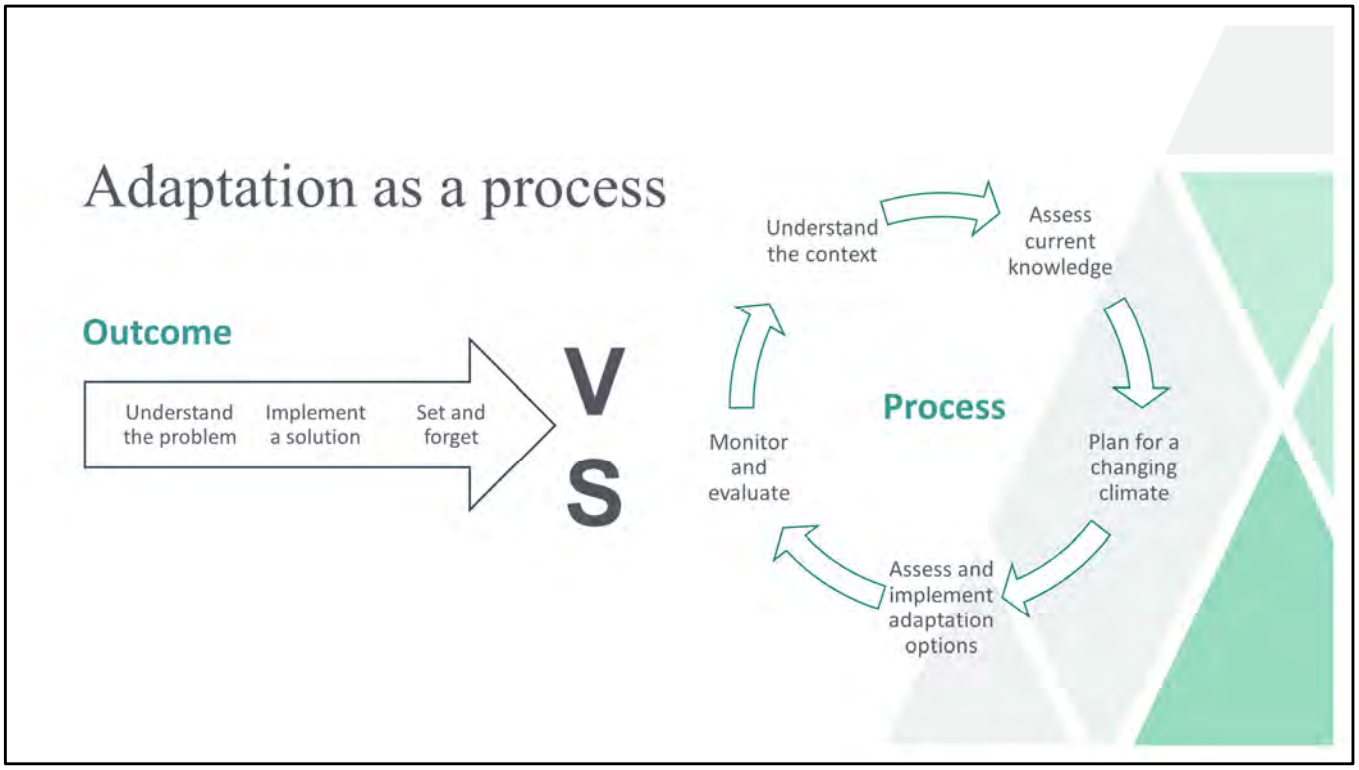
- Strategic and operational decisions
- Community vision
- Council Plan
- Financial plan and financial management
- Strategic risk register and governance frameworks

As an overarching governance principle, the impacts of climate change need to be integrated into everything your council does. It is a whole of council responsibility, not just a role for the environment team.

While councils can take short term measures, you need to be planning for long-term climate impacts. It's vital to shift from a silo approach and to embed climate change actions into your strategic planning processes and frameworks.

Councils that are not adequately prepared could be caught out by changed expenditure, reduced rate bases and revenue streams and high future costs.

In the last section we looked at the Integrated Strategic Planning Framework – you can see some of the documents which make up this Framework in this slide. Councils looking to embed climate change would be looking to address it across all these areas.



It is important to think about adaptation as a process.

The climate has changed, and will continue to do so. We don't know the exact rate and magnitude of climate change as this will depend on the extent of our emissions. We don't know how well different interventions will work in addressing the impacts of climate change.

There are many uncertainties and complexities councils need to consider when planning for climate change. Decisions need to work for our communities under a range of possible futures, and not lock us into a particular path which might not meet the needs of future generations.

Adaptation should not be considered as an outcome, or an end-point at which we 'are adapted.'

Adaptation is an ongoing process of improvement and change. Climate change is not a one-off consideration, but needs to be embedded across council decision-making to allow for responsive decisions.

Decision-making principles for climate change adaptation

- Informed decision-making
- Integrated decision-making
- Risk Management
- Compatibility
- Equity
- Community Engagement

These six guiding principles for decision making are taken from the Victorian Climate Change Act 2017.

They provide criteria for 'assessing the suitability of council decision-making' and a way to demonstrate due process.

Informed decision-making: Responses should be based on the best available evidence in the context of uncertainty; and be flexible and iterative, allowing for adjustments as circumstance change and new information is made available.

Integrated decision-making: Decision-makers should give priority to responses that are most likely to provide the greatest net social, economic and environmental benefit for Victoria; and consider the cost of climate change, including externalities and long-term costs.

Risk Management: Responses should ensure that risks are addressed by those who are best-placed to manage them; avoid unintended consequences; not undermine our ability to adapt to climate change over the long-term and consider the trade-offs, and understand and recognise the costs of and limits to adaptation.

Compatibility: Reponses should: build on the experiences of regions sectors, communities and industry; complement existing and planned work; and contribute to and be compatible with efforts to reduce emissions as well as adapt to climate change.

Equity: Responses should: be equitable and fair; consider both the present and the short, medium and long-term future; and adhere to principles of intra and intergenerational equity.

Community Engagement: Responses should: actively involve the community in setting policy directions and priorities; and value and response the knowledge and perspectives of Traditional Owner groups and Aboriginal Victorians

The Local Government Roles and Responsibilities Guidance brief we looked at before provides a checklist based on these principles, to assist council decision-makers discharge their duties under the *Local Government Act 2020*

Review this checklist now – it's on page 14 of the guidance document.

After you've done that, we'll look at some examples of how councils have addressed climate change at a strategic level using some of the principles and mechanisms we've looked at

Ways to embed across council – a checklist

Embedding Climate Change across council

How is your Council positioned currently?

- [ ] **Do you have clear leadership?**
  - This includes visible and supported climate champions who understand and promote climate change.
  - Executives who actively set goals, advocate, and resources initiatives on climate change and lead by example.
  - Climate change performance indicators in the position description and performance plan of all Executives.

  CASE STUDY: **Inner West council in Sydney** sees implementation of its Climate and Renewables Strategy and related objectives and targets as core council business like any other project or commitment. The CEO's performance plan is linked to climate and renewables objectives.

- [ ] **Do you have the right policies in place to guide your decision making?**
  - Do you have clearly stated climate change objectives in corporate strategies?
  - Are they are regularly reviewed as part of the broader strategic framework within the council?

- [ ] **Have you carried out adequate assessments?**
  - Do you undertake comprehensive risk and vulnerability assessments for priority activities at early stages of the business planning cycle?

- [ ] **Do you have up to date knowledge of climate change and its impacts?**
  - Do you access and disseminate scientifically based guidance on climate change and translate this into training for operational staff?
  - Have you got flexible structures and processes in place to assist organisational learning?

- [ ] **Is your decision-making robust in the face of uncertainty?**
  - Decisions are guided by the precautionary principle to deliver solutions that are robust to uncertainty about all future climate change risks.
  - This principle avoids delays in taking action by using the best scientific evidence and understanding projections.

- [ ] **Does your council have procedures to help decision-making?**
  - Are climate change impacts and responses incorporated in all reports for decision making?
  - Is climate change consideration a decision point in projects to ensure these impacts are assessed before the project proceeds?

  CASE STUDY: **The City of Moreland's audit and risk committee** has a function within its charter to monitor work by the council to mitigate and plan for climate risk.

- [ ] **Does your council have committed resources (staff and budget) to achieve its goals?**
  - The City of Melbourne has included climate change in their financial planning, which allows them to consider investment priorities and consider the financial impacts that they need to prepare for and manage.

- [x] **Do you work in partnership with others to deliver best outcomes?**
  - Do your internal and external networks promote sharing information, pooling resources and complementary climate change goals across stakeholder groups.

- [x] **Are you transparent in your actions and outcomes?**
  - Climate change actions are monitored and publicly reported against clearly defined targets.

- [x] **Do you engage your community in the problems and solutions?**
  - Promote effective communication around risks and opportunities associated with climate change.

  CASE STUDY: **East Gippsland Shire Council** produced a booklet for their community to provide property buyers and existing homeowners practical and useable information on climate risks and adaptation options.

- [ ] **Are you willing to innovate to achieve best outcomes?**
  - Embed new ways of working across council service areas.
  - Promote innovation and demonstrate adaptation.

Climate change is not just a 'sustainability' issue. The impacts of climate change are already being observed in Victoria, will intensify into the future, and will impact on all aspects of our lives, communities and services.

In this section we will identify examples of action councils are already taking to tackle climate change

Working together

The great thing is your council is not alone.

In Victoria, many councils work together through their Greenhouse Alliance.[1]

These Alliances, which cover most councils in Victoria, are networks of councils acting on climate change.

They share best practice, build capacity, develop and deliver projects, conduct research and advocate for local government. The Alliances also work together on issues that cut across Victoria like large scale projects and advocacy.

The 2019 Victorian Greenhouse Alliances conference attracted around 300 participants from across the state.[2]

The Victorian Government works with the Greenhouse Alliances to connect to local government on climate change.[3]

Some councils who aren't part of a Greenhouse Alliance work together through climate change networks or on joint projects, or join in with work led by Alliances.

As you can see, local governments are well and truly acting on climate change. You'll

learn about more examples during this training.

Image credit: NAGA (2018) Greenhouse alliances conference [photograph].

References

1. Victorian Greenhouse Alliances, N.D., 'Home' accessed 14.12.20, available at: http://www.victoriangreenhousealliances.org/
2. Victorian Greenhouse Alliances, N.D., 'Annual Conference' accessed 17.12.20, available at: http://www.victoriangreenhousealliances.org/annual-conference.html
3. DELWP (2016), *Victoria's Climate Change Adaptation Plan 2017-2020,* Victorian Government, Melbourne.

Thank you