



CLIMATE CHANGE RESPONSE PLAN 2022-27

KAURNA ACKNOWLEDGEMENT

We acknowledge the Kurna Nation and its people as the Traditional Owners and custodians of the land in the area now known as the City of Onkaparinga.

We recognise that this local living culture has developed over tens of thousands of years and that in today's contemporary context, Kurna and other Aboriginal people are actively engaged in community life and bring their rich cultural heritage to the strong, vibrant communities we strive for.

We remember Kurna people's spiritual relationship with country when we make decisions about our region and that the protection of places of importance to Kurna culture has an impact on the wellbeing and prosperity of Kurna and other Aboriginal people.

We recognise our leadership responsibility to Aboriginal and non-Aboriginal communities, local businesses, and service agencies by actively engaging in a shared journey towards reconciliation

Our work here includes striving for a culturally rich community life that celebrates Kurna and other Aboriginal culture and provides opportunities for the sharing of stories and other wisdom and tradition.

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INTRODUCTION

Our Plan

The City of Onkaparinga has been responding to climate change for over two decades. The community have overwhelmingly demanded action to protect our coastline, open spaces, and townships for current and future generations. This Climate Change Response Plan is the most comprehensive plan to date and addresses a range of responses from corporate emissions reduction to adaptation and community resilience.

Our climate response acknowledges the shared responsibility between all levels of government, business and the community and shows leadership as a council in the frontline of climate change consequences.

This response plan builds upon the work of council over 20 years and focuses on 5 key areas that position the community for the future.

The Climate Change Response Plan is central to achieving the Community Plan 2030 vision of 'strong, vibrant communities' and responds directly to the following Community Plan outcomes:

- We respond to the impacts of climate change, reducing emissions and building community resilience.
- We champion our environment, reinforcing its strengths, regenerating its losses and protecting its vulnerabilities.
- We manage our water resources for environmental benefit, and to create and maintain green spaces.

Who we are

We are the largest metropolitan local government area in South Australia, home to approximately 10 per cent of the state's population. Located on the southern urban fringe of the Greater Adelaide area, we span

urban centres, low and medium density suburbs, rural areas and townships, meaning our communities vary greatly in terms of lifestyle, socio-economics, amenity and feel.

Our approach

Councils are on the front line of responding to climate change consequences, such as more frequent and extreme weather events, sea level rise and bushfires, and we perform an important role in helping our communities to mitigate and adapt to climate change.

In responding to climate change, we consider our role as a local government and our capacity to influence the outcome and the decisions being made.

We have a direct role and responsibility to:

- reduce the carbon footprint of our services, facilities and projects and our reliance on fossil fuels, and to play our part in reducing emissions
- integrate climate risk into council strategic planning, asset planning and risk management processes to ensure long term financial sustainability
- enhance and improve the resilience of ecosystems and natural areas that we own or have care and control over to protect our natural heritage
- enhance the liveability of our City through climate responsive design in our streetscapes, public areas and council-owned buildings and facilities i.e. greening, cooling biodiversity, water capture and infiltration, water quality, and alleviating the impact of extreme events to the community.
- plan our response based on evidence, advice and information from reputable and trusted sources and agencies
- share information about climate change impacts and hazards with the community

- build disaster resilience in the community
- report to the community on our climate change response and progress against our goals
- ensure council staff have the knowledge, tools and expertise they need to integrate climate change considerations into their role as we build accountability across our organisation.

When an identified need is outside our role as local government we will:

- work collaboratively/in partnership with state agencies and not-for-profit organisations to deliver local services, programs and facilities
- advocate on behalf of our community for changes to policy, regulations, practices, service delivery and funding.

Working together/partnerships

Climate change is a cross-cutting issue that affects policy, urban planning, infrastructure design and construction, environmental and social programs, emergency management, financial planning and risk management.

There are multiple agencies in our region which have a role to play, and we work closely with Green Adelaide, the Hills & Fleurieu Landscape Board, the Coast Protection Board, the Department for Environment and Water, the SA Fire and Emergency Services Commission, the Local Government Association and Red Cross.

We have developed strong networks through:

- Resilient South which is one of 11 regional climate partnerships across SA delivering practical climate action with the Cities of Marion, Mitcham, Holdfast Bay, Green Adelaide and Department for Environment and Water.
- The Cities Power Partnership run by the Climate Council which includes 165 councils representing 65 per cent of Australia's population.
- ICLEI Local Governments for Sustainability (ICLEI Oceania), which supports local governments across Australia, New Zealand and the Pacific.



Climate Ready Schools is a partnership program with Green Adelaide



Adopt a Tree Program

OUR GOALS

Based on evidence gathered through risk assessments and technical studies as well as a clear expectation from our community, the City of Onkaparinga has identified 5 goals which respond to climate impacts ranging from emissions reduction to community resilience. These goals have built on the past but position the City for the future. These goals are:

Goal 1: Climate Smart Neighbourhoods

Our streets, suburbs and townships are designed, built and maintained to respond to our local climate and to create places that are safe and great to live in.

Goal 2: Climate Ready Communities

Our communities understand their risks and know what they need to do to be ready for the impacts of climate change at a local level.

Goal 3: Climate Resilient Natural Areas

Our natural areas are regenerating and are resilient to the impacts of a changing climate.

Goal 4: Low Carbon Transition

Our corporate emissions are reducing and our services and urban design support community efforts to transition to a low carbon City.

Goal 5: Climate Risk Reduction

We have the information we need to make good decisions to manage our climate risks, and we share this information with our communities and partner organisations.

plan are planned or are underway and are being funded through existing operational and capital budget allocations. One project cannot proceed (3.2 Urban Creek Recovery Stage 2) without external funding, and discussions about federal funding are in progress. The remaining 14 actions will largely be met through staff time only but will seek funding if needed via the annual budget process.



REPORTING & FUNDING

Progress on deliverables in this action plan will be reported on annually to Council and the plan will be reviewed in 2027. 2027. Many of the actions (64) included in the

CONTEXT

What the science says

Strong climate action is needed this decade.

Limiting warming to 1.5°C to avoid catastrophic impacts requires rapid, far reaching and unprecedented changes in all aspects of society.

The Intergovernmental Panel on Climate Change (IPCC) have said it is still possible to avoid the most dangerous levels of warming by keeping the rise in global temperatures under 1.5°C this century, but to achieve this carbon emissions would need to reduce by 45 per cent by 2030, compared to 2010 levels. Emissions are currently running at the high end of IPCC scenarios.

If all the policies to cut carbon that national governments had put in place by the end of 2020 were fully implemented, the world would warm by 3.2°C this century. This would be a catastrophic outcome for humanity. The costs of inaction far outweigh the cost of action.

The warming of the planet will occur unevenly. In South Australia, we have already reached 1.1°C warming.










The future climate of the Adelaide and Mt Lofty Ranges region will be drier and hotter, although the amount of global action on decreasing greenhouse gas emissions will influence the speed and severity of change.

Decreases in rainfall are projected for all seasons, with the greatest decreases in spring. However, the number of intense rainfall events will increase.

Average temperatures (maximum and minimum) are projected to increase for all seasons. Slightly larger increases in maximum temperature may occur for the spring season.

The good news is that we know the solutions and have them available to us, but both the pace and scale of change needs to accelerate.

The summary of climate change trends projected for South Australia to 2050¹ is below:

	Higher temperatures	Maximum, minimum and average temperatures will increase.
	Warmer spring temperatures	Warming in spring is likely to be greater than in any other season.
	Hotter and more frequent hot days	The frequency of very hot days will continue to increase, and periods of hot weather will get longer and hotter.
	Fewer frosts	The frequency of frost events will remain comparable until 2030. In the longer-term, frosts are expected to decrease as the climate warms.
	Declining rainfall	Average annual rainfall will decline.
	Lower spring rainfall	Spring rainfall declines will be greater than any other season.
	More drought	Time spent in drought will increase.
	More intense heavy rainfall events	The number and intensity of heavy rainfall events will increase.
	Increased potential evapotranspiration	Potential evapotranspiration is projected to increase across all seasons.
	Wind	Wind speeds will remain comparable until 2030. In the longer-term, a pattern of winter wind speed decrease is likely.
	More dangerous fire weather	Harsher fire weather will be experienced, and fuels will be drier and more ready to burn.
	Rising sea levels	Sea levels will continue to rise.
	Warmer and more acidic ocean waters	Sea surface temperatures will continue to rise, and acidity will continue to increase.

¹ Department for Environment and Water (2020) *Guide to climate projections for risk assessment and planning in SA* located on the State Government Climate Smart Data site

What the community says

The community has consistently highlighted climate change as an important issue in the City of Onkaparinga. Our latest Community Survey 2021 asked residents to indicate whether they agreed with a range of statements about climate change:

- 81% agree that 'Not addressing climate change would be a risk to our City'
- 75% agree that 'I am personally willing to take action on climate change'

The same questions were asked in 2019 and there has been increased support for climate change action in that time.

The top key themes for action identified by the community were:

- using renewable energy and reducing fossil fuels
- tree planting, greening, more open spaces
- recycling and waste management
- improved development regulations
- reducing carbon emissions.

What our risk assessments say

Risk assessments have been undertaken to identify gaps in our strategic and governance structures related to climate change, and to identify physical and transition risks as part of council service delivery, asset management and operations.

Physical risks were assessed under a high emission trajectory for both short (2030) and long-term (2090) time periods which is consistent with the standards and timelines recommended by the State Government.

As climate impacts such as coastal erosion, flooding, bushfire risks, and extreme storms continue to accelerate, the risk to council infrastructure and services increases, as do community needs.

Over half of the physical risks identified were associated with changes in temperature and rainfall patterns.

The highest risks overall were a projected increase in extreme rainfall intensity and resultant flooding, followed by an increase in the frequency of very hot days and an increase duration of heatwaves.

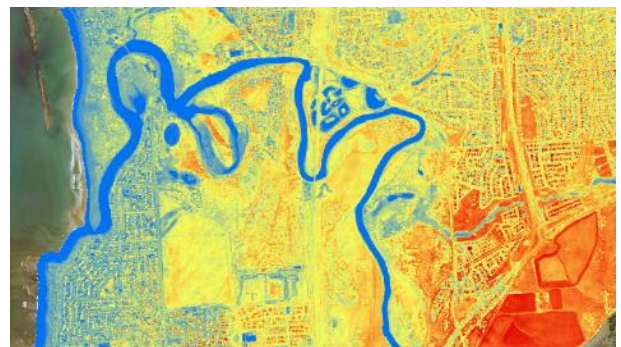
This includes flooding impacts on buildings and infrastructure such as the stormwater network, roads and footpaths. Localised flooding is likely to be exacerbated through a combination of increased urban infill and extreme rainfall, impacting on local assets and the community.

Heat and drier conditions can reduce the lifespan of assets and infrastructure and influence how and when the community use our open space.

An increase in the frequency of very hot days and the duration of heatwaves can cause significant disruption to community outdoor events, as well as influencing when services can be provided due to health and safety considerations for outdoor workers.

Fire danger ratings can limit council services being provided to the community in higher fire risk locations such as community centres and waste services on Catastrophic Fire Days.

Some risks can have their rating reduced once adaptation measures are implemented which is the benefit of forward planning.



GOAL 1:

CLIMATE SMART NEIGHBOURHOODS

Our streets, suburbs and townships are designed, built and maintained to respond to our local climate and to create places that are safe and great to live in.

The City of Onkaparinga is a growth area, but approximately 73 percent of our council area is protected from urban development under the *Character Preservation (McLaren Vale) Act 2012*, which recognises the character and primary production values of our rural area.

New areas that are identified for housing include Hackham, Aldinga and Sellicks Beach which all fall within the existing urban boundary. These developments offer an opportunity to respond more sensitively to our climate and to our community.

Public open space has become more important to our community than ever. As residential lot sizes and backyards become smaller, there is greater pressure on public open space to deliver some of the benefits that private gardens provide such as greening and shade, cooling, recreation and play.

Our health also depends on our access to nature. As the pandemic limited our movement, we began seeking out green space close to where we live for exercise and our mental wellbeing. The evidence about the link between natural spaces and our health highlights that we don't need to go to remote or pristine places to get benefits. A leafy park, a walking path by a creek, or a quiet tree-lined avenue can provide this nature fix.

As a result, there is an increased need and community expectation for tree cover and quality open space which will place pressure on our existing service levels and maintenance.

In a hotter, drier climate, the design of our public spaces has become a vital element of the liveability of our neighbourhoods. Remote sensing mapping (LiDAR) has shown us the impact of extreme heat and allows us to

- Council parks and reserves make up around 3% of our council area and are mainly located in our suburbs and towns. We also manage crown land along our 31 km of coast, road reserves and riverine corridors.
- The majority of land in the council area is privately owned.
- Vegetation covers 27% of our suburbs and townships, with tree canopy at 13%.
- We have planted over 40,000 trees since 2017 in our streets and parks. We have a target to plant 6,000 trees a year.
- Our region is well serviced with recycled water, with potential for much greater use. Around half of the treated wastewater at Christies Beach Wastewater treatment plant is currently going out to sea.
- Recycled water irrigates 32 council reserves, with another 9 on a mix of potable/recycled.

measure tree and vegetation cover over time. While overall tree cover is holding, it is private land where the large trees are being lost.

We have a higher proportion of open space than other council areas which brings an opportunity to cool and beautify our city through greening and water sensitive design.

Streetscapes are more challenging, with restricted space and increased regulation based on bushfire risk restricting the species that can be planted under powerlines, even in urban areas.

By valuing the diverse benefits that our open spaces provide and reflecting this in our asset planning, design and maintenance we can better reflect the importance of these spaces to our community.



TREENET inlets redirect stormwater to the root zone of street trees

Case study: A vision for a sustainable Aldinga development

The state government's release of 60 hectares of land in Aldinga has presented an unprecedented opportunity to set a new benchmark for sustainable and climate-resilient housing development in our region.

Our residents have demonstrated their desire for a sustainable and climate-resilient development through dozens of community submissions and a 1500-signature petition to state parliament.

In response, council released a detailed vision for suburban development in Aldinga, which can also serve as a model for similar developments across our City and the state.

Our advocacy to Renewal SA focussed on 17 key targets to create a cooler, highly walkable and visually appealing development, that complements the rural coastal landscape and sensitive environmental surrounds of Aldinga, while supporting the creation of habitat.

We are also advocating for a diverse range of innovative and well-designed homes, both affordable and high end, to ensure more people can build a sustainable and energy-efficient life for their families in one this enviable coastal location.



“We are perfectly positioned to invest in a sustainable and climate resilient development at Aldinga because the demand is there from the market, and we have an incredibly supportive community who will back this all the way.”

Sandy Mount, Director Harcourts Wine Coast.

GOAL 1: CLIMATE SMART NEIGHBOURHOODS

Our streets, suburbs and neighbourhoods are designed, built and maintained to respond to our local climate, and to create places that are safe and great to live in.

No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
1.1.	Planning & Design Code Advocate to the State Planning Commission and AGD PLUS for the highest possible climate resilient performance-based standards of urban design, greening and water sensitive design to be delivered through the Planning & Design Code and considered as part of the 30 Year Plan for Greater Adelaide.	The Planning and Design Code, introduced in March 2021, greatly reduces the power of council to influence local planning outcomes which means that there is limited capacity for council to enforce higher than minimum standards aimed at climate resilience.	Development Policy	2022–23
1.2.	Sellicks Beach Structure plan Deliver the Sellicks Beach Structure Plan to guide design for new developments via the Design Guidelines and Green Star Communities framework.	Land at Sellicks Beach has been identified in the 30 Year Plan for Greater Adelaide for potential residential use. Under the Planning and Design Code, landowners and developers can seek to rezone this land for housing. A Structure Plan and design guidelines have been prepared that give clear direction as to what the community value and what future development should consider guided by the Green Star Communities framework.	Development Policy	2022–23

1.3.	<p>Hackham Plan Amendment Code Advocate to Renewal SA and private developers for the highest possible environmental standards and climate resilient design outcomes at the Hackham development.</p>	<p>The Chief Executive – Attorney-General's Department is undertaking a Code Amendment to rezone 235 hectares of land across Hackham and Old Noarlunga to address a need for further land supply and population growth in the south of Adelaide.</p> <p>The rezoning will facilitate a potential residential development of up to 2000 new houses plus a retail centre and will provide new policy to improve development on sloping land and to ensure the provision of appropriate infrastructure and services.</p>	Development Policy	2022–23
1.4.	<p>Urban heat and tree canopy mapping Support and part fund the delivery of tree canopy, vegetation cover and urban heat mapping for our entire council region, and link to our website.</p> <p>Use the mapping to assist with open space planning, urban forest planning and to prioritise irrigated areas of open space.</p>	<p>From 2022, mapping will be undertaken across the whole of the Greater Adelaide area by Green Adelaide in partnership with local government.</p> <p>This will establish a full dataset to form the basis for ongoing monitoring of change, and to inform the development of a State Government Urban Greening strategy for metropolitan Adelaide.</p>	Environmental Sustainability	2022
1.5.	<p>Water planning – public spaces Develop a water options analysis for council operations that considers climate-resilient water sources, equity, cooling, biodiversity, recreation and amenity.</p> <p>Continue to trial, adopt and implement innovation including smart irrigation sensor and control systems.</p>	<p>In 2020–21 we spent \$1.3m on water at all council facilities, mostly on irrigation.</p> <p>Our LiDAR heat mapping found that irrigated areas and water bodies are our coolest outdoor spaces during heatwaves, with bare unvegetated earth hotter than bitumen during the day. To green and cool our public spaces, we need to prioritise where we irrigate to achieve the greatest impact.</p>	<p>Environmental Sustainability</p> <p>Open Space Operations</p>	2023–24

1.6.	<p>McLaren Vale water security planning</p> <p>Participate in the development of the McLaren Vale water security plan, which includes consideration of climate impacts, future water sources, and supply and augmentation options for the network.</p>	<p>The Hills and Fleurieu Landscape Board has committed to co-ordinating a Water Security Plan for McLaren Vale with involvement from wine growers, SA Water, DEW, PIRSA, Willunga Basin Water Company and City of Onkaparinga. This is happening concurrently with the McLaren Vale Water Allocation Plan review, led by the Department of Environment and Water.</p>	Strategy	2022–24
1.7.	<p>Urban forest – tree protection legislation</p> <p>Advocate and provide evidence to the State Planning Commission on their review of tree laws as part of its Open Space and Trees Project. This project will consider:</p> <ul style="list-style-type: none"> • open space and urban greening policy • loss of urban trees as a result of infill development • the potential imbalance between the value of regulated and significant trees, and the penalties which apply for their removal • inappropriate tree species included (or excluded) as regulated and significant trees. 	<p>Mature trees are critical for the liveability of our suburbs and towns in a hotter, drying climate, and there is increased community concern about the loss of trees in Adelaide.</p> <p>South Australia’s regulated and significant tree laws have become overly complex, with a list of exemptions that make it hard for residents to interpret. This is heightened in peri-urban areas where the policy interacts with Native Vegetation Overlays and High Bushfire Risk Areas.</p> <p>Many of the changes made to the Regulations in 2011 have had unintended and negative consequences.</p> <p>The City of Onkaparinga has previously put several submissions to the state on this issue.</p>	Development Policy	2022–23

1.8.	Urban forest – Adopt a Tree pilot program Deliver the Adopt a Tree pilot program and evaluate the community outcomes.	Residents are invited to adopt a tree for their verge to contribute to the growth of our urban forest, and enable us to plant a greater number of trees across the City.	Urban Forest Sustainability	2022–23 (pilot)
1.9.	Urban forest – Suburb Improvement Program We will continue to deliver the Suburb Improvement Program to improve tree cover and amenity including: 2022 – Aldinga Beach and Port Willunga. 2023–24 – Aldinga, Sellicks Beach, Seaford and Seaford Rise.	This streetscape beautification program aims to improve our older suburbs through tree planting and minor civil works. We prioritise areas based on existing tree canopy cover, urban hot spots, vulnerable populations and pedestrian generators such as schools and shops.	Urban Forest	2022–27
1.10.	Urban Forest – tree species <ul style="list-style-type: none"> Consider climate–resilient species for our parks and natural areas by reviewing current research relevant to Adelaide, and by taking an adaptive approach to our species lists for parks, streets and natural areas. Subscribe to urban forest planning software to ensure planting criteria is integrated into our planning. Identify further areas for planting large tree species in parks and reserves with irrigation where required. Participate in SA Power Networks trials to establish trees at low risk of touching powerlines to minimise fire risk. 	Tree species are chosen with the following criteria in mind: <ul style="list-style-type: none"> existing vegetation, topography and character of the area consideration about the diversity of species to reduce risk of pest and disease local ecosystems utilities In a drying climate we will continue to review what we plant based on the knowledge and experience of our arborists, and wider climate trends, and participate in research including TREENET street tree trials, the Which Plant Where database from Macquarie University and the Trees for Life climate change provenance guidelines for biodiversity restoration.	Urban Forest Nature Conservation Open Space Operations	2022–27

1.11.	<p>Urban forest – harvesting water for street trees</p> <p>Include tree inlets, kerb breaks or other passive irrigation treatments in road reconstruction design and when replacing kerbs.</p> <p>Include tree inlets or other passive irrigation treatments in Standard Details for new developments.</p>	<p>A single tree can transpire hundreds of litres of water in a day providing natural cooling, as long as it has enough water to thrive. Yet street trees grow surrounded by hard surfaces that channel water away from the tree.</p> <p>TREENET Inlets are an Adelaide invention which can redirect around 10,000 litres of stormwater into the tree's root zone to help them grow and to thrive. Hundreds have been installed so far during major road works, and research by Flinders University has found that they enable greater tree growth and transpiration in the dryer months, and therefore cooling in the street.</p>	<p>Technical Services</p> <p>Construction</p> <p>Parks & Natural Resources</p>	2022–27
1.12.	<p>Urban forest and cooling – sealed roads and carparks</p> <ul style="list-style-type: none"> • Include trees, passive irrigation and permeable surfaces in project scoping for new and upgraded carparks wherever possible. • Review the results of 'cool road' trials in Adelaide. 	<p>LiDAR mapping has shown that roads and carparks without shade are one of the hottest day-time surfaces in urban areas reaching 50–65oC. They also bank this heat and release it at night to become the hottest night-time surface.</p> <p>Trees with canopy have been found to be the most effective way to cool these hot areas, followed by permeable surfaces, but there have also been trials in Adelaide councils to seal roads and carparks with 'cool road' sealants.</p>	<p>Technical Services</p> <p>Construction</p> <p>Infrastructure Assets</p> <p>Community Assets</p> <p>Sustainability</p>	2022–27
1.13.	<p>Urban forest – tree heritage and conservation grants</p> <p>Evaluate tree assistance funds in other councils, and provide a report to Council with costing and resource implications.</p>	<p>Tree assistance funds offered by other councils contribute to the cost of maintaining regulated and significant trees on private land that have a high ecological or amenity value for the wider community.</p>	Sustainability	2023
1.14.	<p>Urban forest targets – program review</p>	<p>We are approaching the half-way mark of our urban forest planting target to plant 100,000</p>	Urban Forest	2023–24

	<p>Review the urban forest targets and planting program to evaluate the community outcomes, including equity across suburbs, and program delivery and implementation.</p> <p>Consider setting targets for council land.</p>	<p>trees. Since 2017 we have planted over 40,000 indigenous tubestock and advanced trees in our streets and open space.</p> <p>It is timely to review our targets and planting outcomes in this program including how and what we plant.</p>	Community Assets	
1.15.	<p>Public spaces – verge planting</p> <p>Encourage the community to plant their verge by promoting the Verge Guidelines which encourage gardens that are both productive and safe for pedestrians.</p> <p>Create demonstration gardens at:</p> <ul style="list-style-type: none"> • Aberfoyle Community Centre • Aldinga Library • Elizabeth House Positive Ageing Centre, Christie Downs <p>Create a new category in the Mayors Garden Competition for verges.</p>	<p>There are many benefits to verge gardens including contributing to the overall appeal of the neighbourhood and connecting with neighbours.</p> <p>These small gardens, when planted across the city can add to the cool green feel of the street, benefit the health of street trees and support local wildlife by providing links between natural areas and reserves.</p>	<p>Community Development</p> <p>Parks & Natural Resources</p> <p>Sustainability</p>	2022–23
1.16.	<p>Public spaces – artificial turf</p> <p>Present a policy position to council on using artificial turf that considers the cost–benefit to the community including heat impact, water use, playing time, risk, maintenance, waste at end of life and a whole of life costing.</p>	<p>Artificial turf can be used on ovals, parks, sporting clubs and verges. Heat mapping conducted on a 34°C day in 2020 showed that the surface temperature of synthetic turf was 39°C, compared to adjacent irrigated turf at 26°C. It also has waste implications at the end of its life.</p>	<p>Sustainability</p> <p>Community Assets</p> <p>Recreation Services</p>	2023
1.17.	<p>Open space – planning</p> <p>Increase climate resilience in our parks and reserves by considering the following as part of the Open Space plan review:</p>	<p>The current Open Space Strategic Management Plan 2018–2023 considers the role that parks can play in alleviating climate change impacts</p>	<p>Community Assets</p> <p>Sustainability</p>	2023

	<ul style="list-style-type: none"> • open space levels in medium density areas • findings of the 2022 Ecological Connectivity Study • 2022 urban heat mapping, tree and vegetation mapping and site-specific tree targets • water infiltration/passive irrigation and irrigation infrastructure renewal in park upgrades • playground materials • artificial and natural shade • natural grasslands and wildflower meadows (see 1.19) <p>Report to Council on the implications for service levels and PCW funding.</p>	<p>including heat refuges, artificial shade, tree and vegetation cover and cooler playground surfaces.</p> <p>The review of the plan will consider climate resilience as a performance outcome by applying an integrated planning approach to open space planning and design that considers the design of both built and green infrastructure and the findings from our existing studies as outlined.</p>		
1.18.	<p>Open space – upgrades</p> <p>Deliver open space upgrades which include design and funding for the following aspects wherever possible.</p> <ul style="list-style-type: none"> • trees and vegetation including biodiverse areas • irrigation • permeability and water sensitive design 	<p>Open space upgrades provide an opportunity to create cooler, greener and more liveable public space for our communities to enjoy.</p>	Community Assets	2022–27
1.19.	<p>Open space – new planting techniques</p> <p>Identify opportunities to trial new climate-resilient planting techniques in our open space and evaluate their success.</p>	<p>Our annual parks planting program provides an opportunity to trial new low maintenance planting techniques that will increase plant cover and are resilient to higher temperatures and lower rainfall, these include:</p>	Open Space Operations Sustainability	2022–27

	<p>Provide information to the community about their benefits.</p> <p>Increase skills and knowledge about these techniques in field staff.</p>	<ul style="list-style-type: none"> • Woody meadows – trialled by Melbourne University, these diverse, dense shrub plantings are coppiced (hard-pruned) to mimic bushfire conditions which promote flowering to attract pollinators and dense canopies to exclude weeds. • Biodiverse grass meadows – to support pollinators and seed eating birds. A native grass meadow has been successfully trialled at New England Reserve, Woodcroft, Thalassa Park Aberfoyle Park. • Hydromulching – seeding larger areas with multiple grass, shrub, tree layers as part of a spray mix. • Microforests – native biodiverse forests using the Miyawaki method that maximise CO2 capture in a small area. 		
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GOAL 2: CLIMATE READY COMMUNITIES

Our communities understand their risks and know what they need to do to be ready for the impacts of climate change at a local level

Climate change is no longer just a problem for the future - it is influencing communities across Australia now. Sixty five per cent of our residents say that climate change has already affected our City, with only 7 per cent in disagreement and 28 per cent unsure.

The impacts of climate change can highlight existing strengths and vulnerabilities within communities and in our local economic systems. Existing pressures and inequality can make it harder for some communities to adapt.

Compounding emergency events such as floods, bushfires and storms in SA and interstate, as well as COVID-19, have caused disruption to our transport systems. This has highlighted the vulnerabilities in our food supply chain and caused temporary shortages and higher prices for essential items.

This disruption has caused us to question where our food and other essential goods come from and has led us to look for alternatives closer to home. Farmers markets and small business with local suppliers have been less affected by interstate disasters.

We know from previous natural disasters such as bushfire and flooding that one of the factors that helps pull people through is the strength of community networks.

Local government plays a key role in providing the services, spaces and events that help people to connect with one other e.g. community centres, arts centre, youth and

positive ageing centres, libraries, community gardens, public open space, events and street closure gatherings – Play Streets.

Our actions in the Climate Change Response Plan seek to build and strengthen local networks, increase community understanding about hazards and risk, and support skills that enable self-sufficiency.



Willunga Footprint Farm

Case study: Resilient Kangarilla

The Kangarilla community is being supported by the Australian Red Cross and the City of Onkaparinga to be more effectively prepared for, and able to respond to, significant emergency events.

The Community-Led Emergency Resilience Project empowers residents and stakeholders to identify and undertake actions that build resilience in emergency situations.

A community disaster resilience toolkit and scorecard are used to assist communities to build collective understanding about how to be more resilient before, during and after emergencies. The scorecard gives a snapshot of the risks the community faces in its ability to cope in a crisis, and the strengths and resources already in place to ensure resilience.

The community showed a high interest in the program and the local Progress Association took on the project's management, forming the

Kangarilla Community Emergency Resilience Group.

Red Cross held workshops that assessed Kangarilla's community resilience, mapping the community's needs to plot first steps to becoming emergency ready.

Residents were led through a process to develop their community action plan, to determine which projects they'd like to work on. This resulted in various community-led activities to raise awareness of emergency preparedness. The first preparedness event saw approximately 110 community members hear from the Country Fire Service, State Emergency Service, South Australia Police, local insurers, South Australian Veterinary Emergency Management, Red Cross and council about how they've been involved in emergency assistance and recovery.



GOAL 2: CLIMATE READY COMMUNITIES

Our community understand their risk and know what they need to do to be ready for the impacts of climate change at a local level.

No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
2.1	Partnership with Australian Red Cross - delivery of training e.g: <ul style="list-style-type: none"> • RediPlan sessions • Youth Pillowcase programs • Communicating in Recovery (community and staff) • Supporting the supporters (community and staff) • Psychological first aid (staff) • Community led emergency resilience 	A collaborative agreement with Red Cross to: <ul style="list-style-type: none"> • increase awareness and understanding about hazards and emergencies. • foster a sense of shared responsibility before, during and after emergencies. • grow individual and community self-sufficiency so that individuals and communities are able to take action for themselves and assist others before, during and after emergencies. 	Community Development Red Cross	2022–23
2.2	Community Led Emergency Resilience Network (CLER) Deliver the SAFECOM Resilient Southern Communities Project in the areas and surrounds of Cherry Gardens and Clarendon. Build the network of CLER groups across Onkaparinga, supporting each group to develop and deliver a local action plan that is specific to their community.	This project aims to increase the capacity for resilience of our residents in the event of an emergency or disaster by supporting the development of community-led actions that respond to and reduce local, identified risk. The project is currently underway in Kangarilla and Moana/Seaford.	Community Development	2022–23
2.3	Green Hub demonstration sites – McLaren Vale & Fleurieu Coast Visitor Centre, Woodcroft Community Centre	Demonstrating ways that households and businesses can reduce carbon emissions, energy and water use.	Sustainability	2022–27

	Promote and deliver tours on request and provide self-tour map to guide visitors on a 'green' journey of the site.			
2.4	<p>Climate Ready Schools</p> <p>Support delivery of the program and 'Expo' showcasing student projects to Traditional Owners and industry partners, including the City of Onkaparinga and Department for Environment & Water.</p>	<p>This Green Adelaide program invites students to apply a design thinking approach and find solutions to climate change for their schools and local communities.</p> <p>City of Onkaparinga staff contribute as industry representatives, providing local data and giving feedback on student projects.</p>	Green Adelaide Nature Education (hosted program)	2022–23
2.5	<p>Sustainable Onkaparinga workshops</p> <p>Deliver over 50 workshops each year, on topics including energy bills & tariffs, planting to cool your home, solar and batteries, zero waste living, community tree planting events, using leftovers, food gardening, connecting with nature.</p>	<p>Events and workshops to teach us the skills to live greener, meet like-minded people and invite us to explore our local environment.</p> <p>They are all free or low cost and reached over 51,000 people online and in-person in 2020–21.</p> <p>Free waste and recycling sessions, lesson plans and resources are also available to schools.</p>	Environmental Sustainability Waste Education	2022–27
2.6	<p>Food security</p> <p>Identify and support community-led opportunities to strengthen our local food system. Continue to promote and support localised food production, including 21 community gardens, the Onkaparinga Food Security Collaborative, the Food Embassy, the South Australian Urban Food Network, Happy Patch Food Co-op, and backyard growing through Magic Harvest, permaculture workshops and the Grow it Local online</p>	<p>Climate shocks like floods and the pandemic will continue to create temporary food shortages and increase food and living costs.</p> <p>Strengthening our local food systems is a way to support our community to have access to sufficient, safe and nutritious food grown and produced locally, and to build resilience to climate change risks.</p>	Community Development	2022–27

	community with Green Adelaide and Sustainable Onkaparinga workshops.			
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GOAL 3: RESILIENT NATURAL AREAS

Our natural areas are regenerating and are resilient to the impacts of a changing climate.

Our natural areas including the hills and coast, are one of our region's drawcards and 34 per cent of the residents that moved to the City of Onkaparinga in the last year were attracted by our natural environment.

Our region includes several conservation areas managed by State Government and active Friends groups – Onkaparinga River National Park, Moana Sands Conservation Park, and the recently proclaimed Greater Aldinga Conservation Park which includes Aldinga 'scrub' and the Aldinga Washpool and Blue lagoon.

Within our heavily cleared and developed region, it is critical that we are working together with our community and landscape boards to protect and restore these areas. In a highly disturbed and fragmented landscape, our remaining ecosystems and habitat are under threat from pest animals, weed invasion, pollution, clearance and bushfire. As climate change alters temperature and weather patterns, these impacts will be exacerbated.

The areas that we manage include coast and estuaries, (273 ha) woodlands, forests, native grassland (404 ha) and watercourses (72 km).

Our focus in these areas is to manage weeds to allow natural regeneration, and to plant back our local trees, shrubs and grasses which we grow from local seed in our council nursery.

Most council-owned watercourses are free of woody weeds, with only about 10 per cent to go. These previously choked watercourses have become highly valued community spaces.

In our urban environment, engineered spaces such as constructed wetlands, ponds, swales and rain gardens (63 ha) all have a role to play in managing the flow of water, improving

water quality and supporting biodiversity and habitat.

In rural areas there are nearly 1200 kilometres of roadside and trails, of which almost half contain high quality native vegetation. Declared weeds continue to present a challenge, including feral olives that are present on more than 20 per cent of rural roads.

A further 380 ha of unirrigated dryland reserves provide opportunities to increase biodiversity.

Our actions in the Climate Change Response Plan seek to find opportunities in our open space to strengthen local biodiversity and to work with the community and other agencies to increase habitat and linkages across the region. We are also seeking grant funding to expand our flagship program - the Urban Creek Recovery Program into additional areas of Panalatinga Creek, Serpentine Creek and Christie Creek.



Our Biodiversity Field Team at Sturt River



Native Garland Lily growing within the extensive native grassland at Christie Creek Reserve, Christie Downs

Case study: Partnering with the community

By investing in community partnerships, we increase our capacity to achieve conservation outcomes on council land and encourage a deeper community understanding and care of our local environment.

As a council we also improve our understanding of how the community interacts with public land. All natural areas in our region have some level of human-induced disturbance, and by working together we can jointly develop solutions that will have a greater chance of success over time.

Our community is actively involved in conservation, with 1100 volunteers contributing more than 6900 hours of conservation work in 2019–2020. This is in addition to Friends group in conservation parks and the many other volunteers who informally contribute their time, including on their own land.

We work with the community in multiple ways. Memorandums of Understanding (MOUs) have been developed to facilitate the establishment of partnerships between council and community groups that wish to undertake conservation activities on council land, such as Darlington's Godfrey Street Reserve Community. The MOUs enable the groups to remain independent while working safely and collaboratively alongside staff or contractors to achieve mutually beneficial outcomes.

Council has funded a partnership with Trees For Life through its Bush For Life program since it began in 1994. With 31 registered volunteer sites across the region and more than 100 volunteers undertaking about 4000 hours of on-ground work each year, this program plays an important role in managing remnant vegetation.



Godfrey St Reserve community-led planting at Darlington

GOAL 3: CLIMATE RESILIENT NATURAL AREAS

Our natural areas are regenerating and resilient to the impacts of a changing climate.

Natural areas conservation and bringing nature to the city A climate resilient network of vegetation corridors, parks, and waterways where communities connect with nature and engage in its restoration.				
No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
3.1	Ecological Linkage Study Deliver a spatial analysis of opportunities for restoration to increase biodiversity linkages across the landscape. Identify strategic sites for community partnerships and activity. Seek funding and partnership projects with the Green Adelaide and Hills & Fleurieu Landscapes Boards and community groups.	A network of biodiversity linkages including large stands of remnant vegetation, is vital for the survival of many species, including woodland birds. This study will build on our existing conservation work to identify the future restoration priorities for our Council area. The priorities will be based on criteria that include ecological services, canopy cover, urban heat island mapping, socio economic factors, open space condition and equity.	Nature Conservation	2022–23
3.2.	Urban Creek Recovery Project: Stage 2 Field River upper catchment Develop a costed concept for the Urban Creek Recovery Project Stage 2 to seek external funding. Advocate for State and Federal funding.	Our creeklines provide a great opportunity to increase habitat for woodland birds and increase soil carbon in degraded areas. In intense storm events, the large and fine roots of trees such as river red gums bind and consolidate the soil, stabilising the creek banks and reducing the	Nature Conservation Infrastructure Assets Technical Services	2022–23

	<p>There are opportunities to extend this program into stretches of council-owned watercourse where structural modification is needed e.g. laying back banks in three sections of creek in Reynella, Happy Valley and Christie Downs.</p> <ul style="list-style-type: none"> • Unnamed Creek: • Serpentine Creek • Panalatinga Creek • Christie Creek 	<p>erosion and sediment entering our waterways and out to sea.</p> <p>Stage 1 of the \$3.7m Urban Creek Recovery Project was undertaken in 2013–2019 and involved over 62km of ecological restoration works along our watercourses, funded by the Federal Government, Adelaide & Mt Lofty Ranges NRM Board and the City of Onkaparinga.</p> <p>Once rehabilitated, these areas would become valued community assets that are linked by the Coast to Vines and Field River Trails.</p>		
3.3.	<p>Aldinga Washpool Revegetation Project</p> <p>Continue implementing the Aldinga Washpool & Blue Lagoon Revegetation plan 2019–23.</p> <p>Advocate for all public land parcels to be included in the park.</p> <p>Develop a council position on community access to the site.</p>	<p>The Aldinga Washpool and Blue Lagoon is home to more than 80 species of native plants, including 20 plant species that are rare, vulnerable or endangered in the region.</p> <p>It has recently been proclaimed as Aldinga Conservation Park, a 340–hectare park that includes the former Aldinga Scrub Conservation Park.</p> <p>Green Adelaide and the City of Onkaparinga have been working to restore the Aldinga Washpool through a five–year plan which has seen over 30,000 native seedlings planted at the site with local Kaurna people and community groups.</p>	<p>Nature Conservation Strategy</p> <p>Infrastructure Assets</p> <p>Community Assets</p>	2022–23
3.4.	<p>Natural Asset planning</p> <p>Investigate asset management approaches for the strategic investment and management of our conservation sites.</p> <p>Develop an Ecological Restoration Program that will separate maintenance from our</p>	<p>Asset management processes have traditionally been applied only to engineered infrastructure. We will investigate how we can apply an asset management approach to the approximately 900 hectares currently managed as natural assets.</p>	<p>Infrastructure Assets</p> <p>Community Assets</p> <p>Nature Conservation</p>	2022-23

	restoration (renewal) works and identify our restoration and remediation priorities for the next 10 years in a report to Council. This will include costings to inform future project and capital works bids and operational budgets.	For local government a natural assets approach can improve operational efficiency, enhance our ability to adapt to climate change, reduce unfunded liabilities, and protect or enhance the many other benefits that natural assets bring to communities.		
3.5.	<p>Biodiversity monitoring</p> <p>Develop a set of natural asset-specific measures that can be used to guide investment and adaptive management actions.</p> <p>These measures will be shared with the community and reported in our annual business plan.</p>	<p>Clear targets and measures for biodiversity on council land will help both council and community understand the current state of our natural areas. This will include condition benchmarks which we are using to assess ecological health, to ensure that they are well functioning and resilient to a changing climate. This benchmark information assists with priority setting and informs our ecological restoration planning.</p>	Nature Conservation	2023
3.6.	<p>Explore place-based Indigenous-led action with the First Nations Advisory Group (FNPAG).</p> <p>In collaboration with the FNPAG, investigate opportunities to collaborate in restoration planning and for a deeper understanding of the cultural values of the site and landscape.</p> <p>Identify opportunities for young people to get involved in planting as a bi-cultural approach to restoration, and for wider community understanding about caring for Country.</p>	<p>When our planting takes place in culturally significant places an there is a process to avoid damage to registered Aboriginal sites through consultation, and with use of Kaurna monitors.</p>	Parks & Natural Resources Strategy	2022-27
3.7.	<p>Community group support</p> <p>Investigate further opportunities to guide strategic community conservation effort</p>	<p>We currently work in partnership with 14 independent community groups and 31 Bush for Life sites, providing education and coordinating</p>	Nature Conservation	2022-27

	through the review of the Open Space Strategic Management Plan and the Ecological Linkages Study.	events that support a broad range of conservation activities on council land.		
3.8.	Rural roadside weed control and revegetation Develop a spatial decision-making tool with our community conservation partners to prioritise our rural roadside weed control and revegetation works.	We are working collaboratively with the Friends of Willunga Basin, Biodiversity McLaren Vale Groups, Hills & Fleurieu Landscape Board and local wineries on the development of a spatial decision-making tool to prioritise our joint on-ground work. This will improve our chances of securing external funding and justify our investment decisions.	Nature Conservation	2022-23
3.9.	Property disposal Integrate the findings of the Ecological Linkages Study when assessing parcels of council for land disposal.	Our property disposal policy considers existing ecological values but does not consider the potential for the restoration of council land.	Sustainability Property	
3.10.	Native understory regeneration Identify further sites for native grassland regeneration.	Encourage the regeneration of naturally occurring native grasslands through changed mowing and management regimes. This has been occurring at Christie Creek and Tuitt Rd, Port Willunga.	Nature Conservation	2022-27

COASTAL PLANNING & MANAGEMENT

Onkaparinga is home to 31 kilometres of coastline comprising sandy beaches, dunes, and cliffs ranging from 5 to 50 metres high, some of which are soft and erodible. Our beaches and coastline are one of our community's most valued assets and are a strong drawcard for visitors and tourists.

We have been responding to coastal climate change risks since the early 2000s. Some of the softer coastal works that have slowed and reduced erosion include replenishing dunes, managing stormwater from coastal outlets, re-vegetating cliffs and dunes, sand drift fencing, installing sandbag groynes and building geofabric sea walls. Community messaging, fencing and by-laws also encourage people not to access highly erodible areas.

Harder infrastructure has included building rock sea walls, stabilising eroding cliffs from the top with piling, and moving roads and footpaths inland to accommodate current and future erosion.

A Coastal Scoping Study (2021) revealed that our coastline has been relatively stable over the past 70 years, however sea level rise will increasingly exacerbate the erosion of our soft, sedimentary cliffs and sandy beaches.

Sea-levels have been rising by 4–5mm each year since the 1990s. There is minimal

sea-level-rise projected out to 2050 but it is likely to speed up in the latter part of this century.

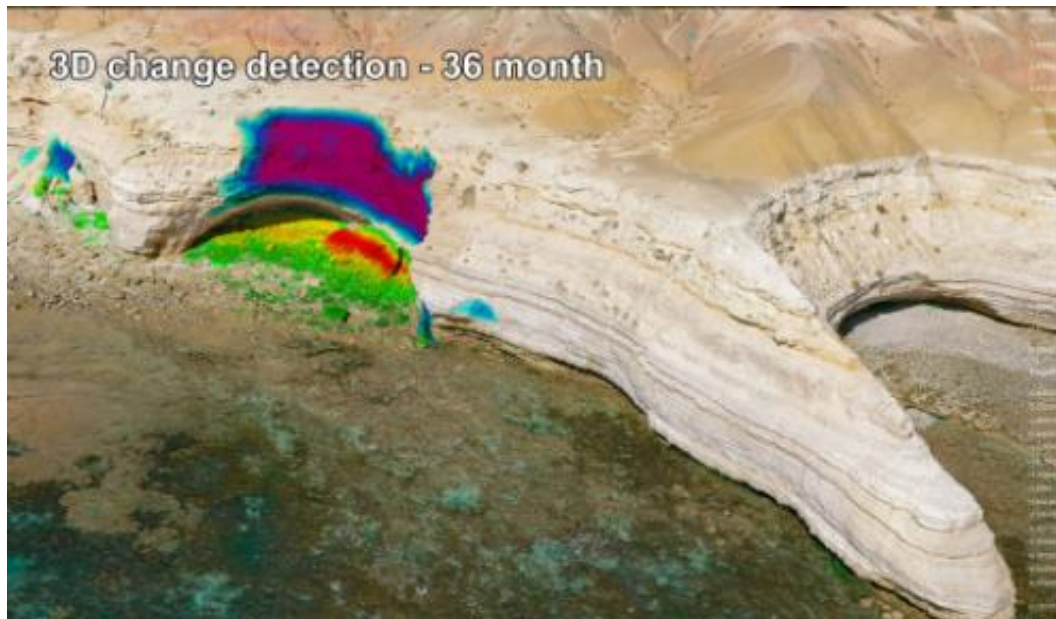
Overall, the City of Onkaparinga is not vulnerable to coastal flooding. However, if seas rise as projected, some lower lying areas will be subject to intermittent coastal flooding after 2050.

Several locations are already and will increasingly experience wave overtopping in 1:100 storm events.

Our urban layout places a public road between the coastline and esplanade housing and businesses, which means that most risks will primarily impact upon public assets in the short term. However, in the longer term, private infrastructure, public safety and the health of our ecosystems will also be impacted.

The study makes it clear that climate change impacts cannot be managed by council and governments alone, and that some impacts and risks may not be able to be entirely prevented, however by being proactive and building community understanding we can reduce both the cost and the risk.

Undertaking strategic coastal adaptation planning now will allow us to incorporate the most appropriate, timely and cost-effective adaptation actions within our asset management and long-term financial planning.



3D Mapping of coastal erosion



Stabilising eroding cliffs at Aldinga Beach with piling drivers

ACTION PLAN

Coastal adaptation planning				
Our beaches, assets and communities are safe from the impacts of rising seas, storms and erosion.				
No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
3.11.	<p>Coastal erosion mapping</p> <p>Collaborate with SA Water, the EPA and Flinders University to undertake updated 3D Digital Terrain Modelling for our coastline, that will provide:</p> <ul style="list-style-type: none"> • quantifiable erosion rates • calculation of sediment loads into Gulf St Vincent. 	<p>In 2015, we undertook 3D mapping of our coastline to give us a baseline to compare erosion rates over time. A follow-up in 2018 of several 'hot-spots' revealed a quantifiable rate of erosion over a three-year period.</p> <p>As sea levels rise and storm surges become more frequent and severe, monitoring coastal erosion will be essential for determining the places most at risk, enabling us to make informed coastal adaptation decisions and investments.</p>	Infrastructure Assets	2022
3.12.	<p>Tiller Drive Managed Retreat</p> <p>Realign carpark and shared use path from Tiller Drive to 273 Esplanade, Seaford.</p> <p>Realign shared path opposite 260 Esplanade.</p> <p>Jointly funded by Coast Protection Board and council.</p>	<p>There has been 3–5m of cliff erosion in the last 60 years caused by wave attack at the base and ground water discharge mid-slope. This has increased the steepness and stability of the cliffs with mid-level failures in the past two years. Improved cliff top stormwater infrastructure has reduced the rate of erosion over this time.</p>	Infrastructure Assets	2022–23

3.13.	<p>Develop a Coastal Adaptation Plan</p> <p>Deliver a Coastal Adaptation plan that guides decision making and action and responds to the priority issues identified in the 2021 Coastal Adaptation Study.</p> <p>Undertake community and stakeholder engagement on coastal adaptation options.</p>	<p>Our coastline has been mostly stable over the past 70 years, with periods of accretion and erosion. There is a buffer of public assets such as roads and carparks in between the coast and private property, so the main threats of erosion are to public infrastructure which will be the focus of the plan.</p> <p>The Coastal Adaptation Study (2021) provided a baseline of existing coastal conditions that will allow us to monitor changes for generations to come.</p>	Sustainability	2022-23
3.14.	<p>Coastal monitoring program</p> <p>Develop a long-term coastal monitoring program, that monitors the impact of sea level rise and storms and provides warning when the coast may be operating outside of its normal parameters.</p>	<p>Sea level rise is likely to be experienced in the context of storms from which the coastline does not recover. This highlights the importance of monitoring the coast, so that we can undertake proactive works that will save time, money and effort in the longer term. This will also allow us to provide early warning when sections of the coastline are under threat.</p>	Sustainability	2023-24

GOAL 4: LOW CARBON TRANSITION

Our corporate emissions are reducing and our services and urban design support community efforts to transition to a low carbon City.

The City of Onkaparinga was responsible for 7979 tonnes CO₂e in 2020-21.

Targets: an 80 per cent reduction in corporate emissions by 2030 (from a 2010–11 baseline)

- 100 per cent of our streetlighting will be LED by 2025
- 80 per cent of our fleet will be electric or hydrogen vehicles by 2035
- Buying back the equivalent of 50 per cent of the plastics that we collect each year through kerbside recycling by 2024–25.

Industry, government and the community are all seeking ways to phase out the use of carbon intensive and non-renewable fossil fuels. In SA we have grown from virtually zero renewable energy production in 2003 to one of the highest rates of renewables in the world - currently averaging over 60 per cent.

Solar energy is also powering over 50 per cent of our homes. Some postcode areas such as Willunga, Whites Valley and the Range are reaching 75 per cent solar. Christie Downs and Christies Beach have the lowest proportion at around 33 per cent.

Of the residents that don't have solar, the reasons given are not being able to afford them (41 per cent), renting (18 per cent) and not knowing which provider to trust (17 per cent).

Increasing energy efficiency and switching to renewable energy can result in long term savings, and less exposure to fluctuations in pricing and a future carbon price.

Council has installed 580kW of solar on council buildings and a 600kW solar farm at the jointly owned Southern Region Waste and Recycling Authority site at Seaford Heights.

Waste accounts for around 6 per cent of total emissions in Onkaparinga, including solid waste and wastewater. Reducing the amount of waste going to landfill is a significant way to reduce emissions as are waste-to-energy systems such as biogas.

In 2020–21, just over 50 per cent of the waste from kerbside collections was diverted from landfill through recycling & composting. All kerbside domestic waste attracts a waste disposal levy, in 2021-22 this was \$5.5 million.

Two elements combined to highlight the urgency of building our capacity to process recycled material and generate high value recycled goods locally, the Council of Australian Governments agreed to phase out the export of waste plastic, paper, glass and tyres in 2018, and the collapse of a local major recyclables processor which led to stockpiling and a significant fire at an Adelaide recycling facility.

This led to funding from all levels of government for a major upgrade of the Southern Materials Recovery Facility at Seaford in 2021.

It has also led us to seek to better understand our role in the circular economy which can deliver economic prosperity in a resource-constrained world. It is an alternative model to the 'take, make, dispose' practices of the linear economy and involves keeping products and materials circulating at their highest value for as long as possible.

Our actions in the Climate Change Response Plan seek to accelerate our corporate emissions reduction, advocate for members of our community missing out on the renewables boom, and to support the circular economy through our purchasing, community and economic growth programs.

Community emissions snapshot*

The major sources of carbon emissions for our region are from electricity, transport, gas and waste. The greatest proportion of our emissions (34 per cent) is generated by households using energy, followed by fuel for car transport at 26 per cent. For more information see snapshotclimate.com.au

Municipal emissions snapshot for 2019-20*

Electricity	50%
Gas	17%
Transport	26%
Waste	6%
Total community emissions (tCO ₂ e)	1,110,000

* Source: snapshotclimate.com.au



*The Snapshot community climate tool has been developed by Beyond Zero Emissions and Ironbark Sustainability and is consistent with the Global Protocol of Carbon Emissions reporting, the main international standard for cities and local government areas.



Solar at the Southport Surf Life Saving Club

Case study: A powerful hub for change at Seaford Heights

The state's largest household recyclables facility was opened at Seaford Heights in late 2021 and is now processing the recyclables of more than 300,000 residents across Southern Adelaide

This state-of-the-art facility uses world leading screening and optical sorting technologies for cardboard, plastic, and glass, and has been designed to meet the highest standards of recycling purity, ensuring nothing goes to waste.

The Southern Materials Recovery Facility (SMRF) is Australia's first materials recycling facility designed to meet COAG's export ban requirements, ensuring waste is processed and reused in Australia rather than being shipped overseas.

Stage two will be built in 2022 which will install additional optical and robotic sorting systems which will further improve the quality of recovered materials, with the potential for recycled glass to be used in council road and civil construction projects.

This facility is a joint initiative of Australian recycling and resource recovery specialist Re.Group and the Southern Region Waste Recycling Authority (SRWRA) – a joint subsidiary of the Cities of Onkaparinga, Holdfast Bay and Marion.

The upgrade was supported by a \$5.35 million federal government Community Development Grant which allowed the facility to expand beyond processing the partner councils' recyclables to also servicing surrounding councils and businesses.

Renewable Energy Hub

The site is powered by renewable energy with a 600kW solar farm, and a bio-gas plant which has the capacity to generate enough electricity to power more than 4400 local homes each day. The plant converts methane from decomposing organic waste including food scraps, into electricity, reducing emissions by 130,000 tCO₂ a year. The site is considered emissions-neutral.



The first solar farm in SA on a capped landfill.

GOAL 4: LOW CARBON TRANSITION

Our corporate emissions are reducing, and our services and urban design support the community to transition to a low carbon City.

No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
4.1.	Greenhouse Inventory – corporate emissions Continue to track and report on our corporate greenhouse gas emissions and our progress towards meeting our 80% reduction goal by 2030. Publish the results on our website.	You can't manage what you don't measure. Our corporate inventory is based on the National Greenhouse & Energy Reporting Act, and our emissions boundary on the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard. We include all Scope 1 and 2 emissions, as well as a range of Scope 3 emissions. We have been measuring our emissions since 1994.	Sustainability	2022–27
4.2.	Building Code changes Advocate for changes to the National Construction Code and state planning and building legislation to support 7– star minimum standard residential housing.	Changes have been proposed to the National Construction Code (NCC) to increase the minimum energy efficiency provisions for residential dwellings. We are supportive of higher standards, including introducing a 'whole of home' approach, where an annual energy use budget for the equipment in the home can be included. We also support a review of state planning and building legislation to include policy in relation to	Building & Development Compliance	2022

		residential zoning, orientation and minimum scheme rating requirements, and increased stringency around mandatory building inspections to ensure that construction is actually built as per the approved plans.		
4.3.	Solar for renters Advocate to the State Government to remove the barriers and incentivise landlords and tenants to install solar and battery systems.	In the Community Survey 2021, of those that didn't have solar, 19% of respondents said they wanted to have solar panels but couldn't because they are renting. There are innovative market solutions to private rental and community housing.	Sustainability	2022
4.4.	Solar for public housing Advocate to State Government for the public housing VPP to be offered to existing households and renewal sites within the City of Onkaparinga, and for community-scale batteries to be considered.	The State Government is installing 5 kW of rooftop solar systems and a 13.5 kWh Powerwall battery system at 3000 public housing properties across SA at no cost to owners as part of a virtual power plant (VPP). Community batteries for up to 250 households are also being funded by the Federal Government. Public housing has the lowest solar uptake in our City.	Sustainability Development Policy	
4.5	Environment & Sustainability Grant Deliver the annual grants program of up to \$5,000 for energy upgrades and solar in council-leased buildings.	Grants of up to \$5,000 fund energy efficiency and solar panels for community groups leasing council buildings.	Grants Sustainability Community Assets	2022–27
4.6	Energy Support Program – community facilities Deliver an Environmental Management Plan for 12 sites including: Aberfoyle, Aldinga and	Supporting centre staff and volunteers to understand and monitor their energy use when their buildings receive an energy efficiency upgrade.	Environmental Sustainability	2022–27

	Seaford Community Centres; Aldinga Library; Base 10 Youth; Elizabeth House Positive Ageing Centre; Hub Recreation Centre; Noarlunga Recreation & Aquatics Centre; Pt Noarlunga Arts Centre; Wakefield House Positive Ageing Centre; Wardli Youth.			
4.7	Building Upgrade finance Continue to promote the Building Upgrade finance program to business to encourage energy efficiency upgrades.	A finance product designed to encourage energy efficiency upgrades to non-residential buildings with repayments made via rates. The product is designed to provide financial benefit to both the building owner and the tenant.	Economic Development Sustainability	2022–27
4.8	Streetlighting Change remaining 10,800 arterial and major road street lights and decorative lights to LED.	We have 22,800 streetlights in our council area. Most are owned by SA Power Networks (SAPN) with maintenance and electricity costs paid for by council. We have worked with SAPN to changeover 12,000 lights to 14W LED.	Infrastructure Assets	2022–25
4.9	Noarlunga Aquatic Centre Assess options for an energy upgrade for the Noarlunga Aquatic Centre including electrification and solar.	The Aquatic Centre generates 16% of our total corporate emissions. It was returned to council management in 2021.	Community Assets	2022
4.10	Christies Beach and Moana Tourist Parks Deliver a costed Low Emissions Action Plan for the Christies Beach and Moana Tourist Parks to identify options for energy efficiency and renewable energy.	The City of Onkaparinga manage two popular tourist parks in our region on the foreshore at Christies Beach and Moana. There have been previous upgrades of hot water to solar hot water evacuated tube systems.	Community Assets Recreation	2022-23
4.11	Building standards for council buildings	Sustainability rating systems such as the Green Building Council of Australia's Green Star Rating	Community Assets	2023–24

	Investigate energy efficiency standards and rating systems for new council buildings.	and the National Australian Built Environment Rating System provide a transparent framework for assessing the energy performance and climate resilience of new buildings.	Sustainability	
4.12	Solar installation on council buildings Install solar at: Port Noarlunga Arts Centre, Aldinga Community Centre, Noarlunga Aquatic Centre. See Towards Zero Roadmap for more locations.	580kW has already been installed on council buildings. Solar will continue to be installed pending roof investigations.	Community Assets	2022–24
4.13	Lighting upgrades in council buildings Upgrade lighting at sites listed in the Towards Zero Roadmap.	Develop an energy efficient lighting guide to support the ongoing changeover to LEDs in all facilities.	Community Assets	2022–23
4.14	Batteries Assess the installation of batteries to reduce peak demand at large facilities, off-grid public toilets and off-grid irrigation systems.	At this point in time, the low capacity of batteries and their cost limit their viability in council facilities. As the market progresses, we will continue to assess their viability at council sites.	Community Assets	2022–27
4.15	Community Buildings Determine our role and approach to energy upgrades in community leased buildings, and if we have a role to play beyond our grants program – see 4.6.	We have prioritised council owned and managed buildings for energy efficiency upgrades as these buildings generate the highest emissions and provide the greatest payback to council. Council buildings that are leased to the community have the potential for further emissions reduction which would provide savings in utility costs for clubs and community groups.	Sustainability Community Assets	2023
4.16	Private embedded electricity networks	A Private Embedded Network is a new way to manage and share power between council and co-located clubs within a facility or sports park	Projects	2024–25

	Investigate models for a Private Embedded Network to share power between co-located facilities.	which allows Council to recoup costs, while reducing the power bills of sporting clubs.	Community Assets	
4.17	<p>Council fleet</p> <p>Purchase electric passenger vehicles at time of changeover when fit for purpose.</p> <p>Continue to replace light hand-held equipment and mowers with electric models.</p> <p>Assess technologies that can be fitted to existing waste trucks e.g. Hydrogen Direct Injection.</p> <p>Continue to investigate low emission heavy vehicles that can service our urban/rural council area.</p> <p>Assess waste trucks, buses and other heavy vehicles as the technology matures.</p>	<p>Our fleet services a growing population, travelling around 4 million kilometres per year using 1.2 million litres of diesel and petrol.</p> <p>We will reduce our dependence on fossil fuels in our fleet and plant through electrification or hydrogen as vehicles become available, starting with passenger vehicles.</p> <p>We have installed charging stations for fleet at Noarlunga office and Field Operations Centre which are both facilities well serviced by solar power.</p>	Fleet	2022–27
4.18	<p>Public Electric Vehicle charging</p> <p>Develop a policy position on providing or facilitating additional Electric Vehicle charging on council land e.g. at public facilities, carparks, Tourist Parks and street charging.</p>	Three free public electric vehicles stations were installed at the McLaren Vale and Fleurieu Coast Visitor Centre in 2018. Our region is not currently well serviced by public EV charging though there are State and Federal funding programs available.	<p>Sustainability</p> <p>Infrastructure Assets</p> <p>Community Assets</p> <p>Community Capacity</p> <p>Technical Services</p>	2022
4.19	<p>Waste diversion – green waste and food waste</p> <p>Conduct a waste emissions audit in 2022 to inform the updated Waste plan and make</p>	Waste is around 6% of our community emissions. At our last audit in 2019 on average, households were disposing of just over 4 kg of food per week into the waste bin.	Waste and Recycling	2022–23

	<p>recommendations to increase diversion of waste to landfill.</p> <p>Continue to provide education to the community about composting and how to recycle through workshops, website and Facebook.</p> <p>Continue to encouraging compost with 50% subsidies for compost bins and worm farms.</p>	<p>In 2020 we commenced a fortnightly kerbside Green waste service (previously monthly) and maintained a trailer drop-off service. Households are encouraged to either compost or use the green waste bin for food waste.</p> <p>Our kerbside green waste service is processed into compost at local processing facility Peats Soils, reducing methane in landfill – one of the most potent greenhouse gases – and creating a product that supports microbiological activity in the soil in commercial and residential gardens to build soil carbon.</p> <p>Workshops are delivered on request to schools and community groups, and information stands at community events. Topics include Composting, Mad about worms, Make your own bokashi, War on Waste Q & A, It's Not a Load of Rubbish, and Ready! Packaged or not!</p>		
4.20	<p>Strengthen business capacity and skills in climate response</p> <p>Facilitate business engagement and participation in programs designed to assist with emissions reduction and to promote climate change resilience.</p> <p>Identify and promote resilient, low emissions and climate smart economic and employment opportunities within the region.</p>	<p>We have businesses in the City of Onkaparinga who are leaders in climate change mitigation and adaptation e.g. Hither & Yon are the first carbon-neutral certified wine brand in SA, and many wineries are working to re-establish native corridors, manage the land using biodynamic and organic practices and are introducing new grape varieties to suit our changing climate.</p> <p>We will provide opportunities for local businesses to share these stories and to facilitate opportunities for our economy to mitigate and adapt to climate change.</p>	Resilient South Economic Development Sustainability	2022–27

4.21	<p>Supporting the local economy – buying local</p> <p>Support and promote the Go South Go Local website</p> <p>Support local business through council procurement policy.</p>	<p>Both council and the community can reduce emissions from transport and support local employment by buying local.</p> <p>Go South Go Local is a marketing campaign to direct the community to a directory of over 1000 businesses to encourage people to shop with local producers, suppliers and makers.</p> <p>Council purchasing requires staff to obtain one quote from a business located in the City of Onkaparinga (unless there are no local suppliers able to complete the work). Of our current suppliers, nearly 40% are now local and we are aiming for this to grow.</p>	<p>Economic Growth & Tourism</p> <p>Procurement</p>	Ongoing
4.22	<p>Greening our supply chain and supporting the circular economy – recycled materials</p> <p>Continue to monitor and trial new materials and products.</p> <p>Work with manufacturers to make products from recycled materials.</p> <p>Expand use of recycled materials in our road reconstruction works and developer contributed assets.</p> <p>Investigate opportunities for a demonstration project that uses recycled materials in multiple asset types (i.e. roads, footpaths, stormwater) in a single location.</p>	<p>Council has committed to increasing the recycled content in the items we purchase to reduce emissions and support the development of products made from kerbside and other waste.</p> <p>In 2020–21 we reused 5,900 tonnes of recycled asphalt in road reseals and 1,100 tonnes of concrete as base material for footpath construction.</p> <p>12 roads have been resealed using asphalt containing recycled plastics over recent years.</p> <p>Recycled road materials are also used in our rural road maintenance program.</p> <p>We are working with a local manufacturer to manufacture T-top bollards made from recycled HDPE plastic.</p>	<p>Construction Infrastructure Assets</p> <p>Technical Services</p> <p>Sustainability</p>	2022–27
4.23	Supporting a circular economy	Councils are uniquely positioned to accelerate the transition towards a circular economy – an	Sustainability	2023–24

	<p>Develop a set of circular economy indicators for the City of Onkaparinga based on the 2021 study undertaken by Rawtec Pty Ltd and key staff.</p> <p>This work will consider council operations, provision of infrastructure and spaces, service delivery, and education support and advocacy.</p>	<p>economic approach that seeks to tackle global challenges like climate change, waste, and pollution by going beyond recycling to keeping products and materials circulating through the economy at their highest use by designing out waste, designing for longevity, repairing and sharing.</p>		
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GOAL 5:

CLIMATE RISK REDUCTION

We have the information we need to make good decisions to manage our climate risks, and we share this information with our communities and partner organisations.

Councils are often on the front line of responding to disasters, and climate change is likely to exacerbate many of the known disaster risks such as bushfire, flooding, extreme heat and coastal erosion. We also know that vulnerable communities are more likely to be affected.

The City of Onkaparinga has a key role to play in emergency prevention and response, and in supporting the community to strengthen their own response to emergency events.

We also have a role to play in advocacy to other levels of government on behalf of our communities. When SA Water was planning a safety upgrade of the Mt Bold reservoir dam, we advocated strongly for a design that would offer superior flood protection in a 1-in-100-year flood event. This option was ultimately adopted and funded by three levels of government, providing greater flood protection for Old Noarlunga and Port Noarlunga.

The prevention of disasters and disaster preparedness is a shared responsibility of state and local government, Hazard Leaders and Control Agencies such as the CFS and SES, landholders, and the broader community. In the event of a disaster, agencies need to work together to respond effectively.

Recent extreme events include the Cherry Gardens fire in January 2021, flooding at Old Noarlunga in 2016, and a series of storms also in 2016 including the state-wide blackout.

A \$3.7 million Bushfire Preparedness and Resilience project funded by the National Resilience Agency aims to eradicate woody weeds in high risk areas using new technologies, and work to prepare communities

who may be new to rural living about bushfire risk.

After an emergency there can be a long period of recovery for the communities affected. The City of Onkaparinga has a strong relationship with our local community networks and has knowledge about locally available resources. As the initial activity of responding to a disaster passes, it is often councils that are responsible for coordinating the longer-term recovery efforts to rebuild communities.

Worsening extreme weather driven by climate change, is compounding costs for councils that need to be factored into risk management and long-term financial plans. This includes damage to council owned assets, rising insurance premiums and increasing liability risks.

In addition, a new set of social, legal, financial and transitional risks are forcing councils to turn their attention not only to on-ground action but also to their governance arrangements. This is a key recommendation of the Financial Stability Board's Taskforce on Climate-related Financial Disclosures (TCFD).

The City of Onkaparinga conducted a climate risk governance in 2019 which gave us detailed recommendations about how to improve our climate risk governance against 17 key performance indicators.

When benchmarked for performance against more than 330 other councils, the City of Onkaparinga was in the top three councils in Australia.

Our actions in the Climate Change Response Plan seek to integrate climate risk across our operations and to be prepared as a council and as a community for emergency events.



2016 flood at Port Noarlunga



Sellicks Beach boat ramp after a storm

Case study: Managing our assets for a changing climate

The City of Onkaparinga holds more than \$3.2 billion in physical assets, including roads, buildings, playgrounds and jetties, and is responsible for maintaining these on behalf of our community. Climate change is already impacting how we build and maintain our assets, and the City of Onkaparinga is working with our neighbouring councils through the Resilient South partnership to pilot new ways of integrating climate risk data into our asset management systems.

The Resilient Asset Management Project will ensure we are making smart decisions with the best available data, and that investments will be made in the most efficient way possible.

Our partners include the Cities of Holdfast Bay, Mitcham and Marion along with leading climate practitioners from the CSIRO, state government and industry.

This nation-leading initiative has received funding from the Local Government Research and Development Scheme and the National Disaster Risk and Recovery Fund, as well as strong support from key industry bodies including the Local Government Association, Insurance Council of Australia and the Institute of Public Works Engineering Australasia.

The project will result in new systems that allow us to maintain high service standards in the face of increased risk from heat, fire, coastal erosion and flooding. This project is a great example of how the City of Onkaparinga is working with its neighbouring councils to improve service delivery and community resilience across the southern Adelaide region.



Repairing stormwater tunnels at Galloway Road, O'Sullivan Beach

GOAL 5: CLIMATE RISK REDUCTION

We have the information we need to make good decisions to manage our climate risks, and we share this information with our communities and partner organisations.

No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
5.1.	<p>Climate Risk Assessment – physical and transition risk</p> <p>Act on the Climate Risk Assessment report (2022) to:</p> <ul style="list-style-type: none"> • Integrate risks into our Risk Management systems and develop risk controls. • Undertake on-ground action for higher-rated risks identified in the 2030 time period. • Incorporate risks into strategic planning, long-term financial planning, asset management planning, land use planning, major projects and risk registers. 	<p>A Climate Risk Assessment report has assessed the physical and transition risks associated with climate change as part of council service delivery, asset management and operations.</p>	Corporate Governance	2022–27
5.2.	<p>Climate Risk Assessment – governance</p> <p>Continue to respond to the 2019 Climate Risk Governance Assessment (2019) recommendations to address strategic and governance risks against 17 key performance indicators.</p> <p>Repeat the Climate Risk Governance Assessment to measure progress and identify gaps.</p>	<p>There are a new set of legal, financial and transitional climate risks that require us to identify gaps in our strategic and governance structures and assess our ability to respond.</p> <p>A Climate Risk Working Group comprised of staff from key parts of council is tasked with responding to the recommendations</p>	<p>Corporate Governance</p> <p>Climate Risk Working Group</p>	<p>Ongoing</p> <p>2024–25</p>

		from a Climate Risk Governance Assessment (2019).		
5.3.	<p>Climate Risk - Resilient Asset Management Project</p> <p>Develop a shared vision for a climate resilient Southern Adelaide, with key stakeholders.</p> <p>Assess the risk and vulnerability of selected classes of council assets under climate change, and a documented assessment approach that can be replicated for additional assets in the future, or as new climate data becomes available.</p> <p>Assess options to address the climate risks and opportunities.</p> <p>Undertake capacity building in staff and elected members.</p>	<p>This project supports the integration of climate risk into asset management planning and long-term financial planning. It is a collaborative pilot between Resilient South councils, the Government of South Australia, the CSIRO and industry partners.</p> <p>Learnings from the pilot will improve ongoing asset management planning, systems and processes.</p>	<p>Sustainability Infrastructure Assets</p> <p>Community Assets</p> <p>Resilient South</p>	2022–24
5.4.	<p>Bushfire preparedness and resilience project – woody weeds and education</p> <p>Expansion of our fuel load reduction program in high risk areas to include new mowing technologies with a focus on controlling woody weeds with high flammability.</p> <p>Fuel load assessments and asset management analysis will use new mapping technology.</p> <p>Communication materials and group training sessions aim to build capacity at the individual, family and community level.</p>	<p>This project has received \$3.57 million funding from the National Recovery & Resilience Agency to target increased activity to reduce bushfire risk and increase community resilience.</p> <p>Woody weeds i.e. Olives, Boneseed, Dog Rose, Golden Wreath Wattle, Montpellier Broom and Radiata Pine are highly flammable and have been mapped on our road verges and reserves down to 20m segments.</p> <p>These invasive species will be controlled on our land with annual follow up</p>	Emergency Management	2022–25

		treatments to deplete the seed bank and prevent regrowth.		
5.5.	<p>Bushfire prevention and preparedness – council land</p> <p>Participate in the review of the CFS Bushfire Management plans –and reflect any changes in the City of Onkaparinga Bushfire Management Plan 2020–24 which is reviewed every 2 years.</p> <p>Undertake roadside slashing (250km) and boom mowing (728km) annually to reduce the risk of parked vehicles igniting long grass.</p> <p>On the 128 Roadside Marker Sites (110 km), treat weeds and apply selective brush-cutting in these sensitive sites to reduce fuel loads.</p> <p>Undertake pruning program on rural roads to ensure canopy and shoulder clearance for safe access for CFS, and remove compromised trees that could block escape routes.</p> <p>Manage urban grassland and woodland reserves to create a 20m buffer from key assets and human settlements.</p>	<p>Climate change is likely to exacerbate the likelihood and consequence of bushfires and affect those who are already highly vulnerable to this risk.</p> <p>Bushfire prevention and preparedness is a shared responsibility of State and Local Government, the CFS as the Hazard Leader and Control Agency, landholders, and the broader community.</p> <p>We specifically target 20–metre asset protection zones around dwellings in extreme or very high–risk areas.</p> <p>Our fire prevention program recognises the important ecological functions of remnant biodiversity and tree canopy cover including dead trees containing hollows, and seeks to maintain the values of our native vegetation.</p> <p>Our full prevention response is outlined in the City of Onkaparinga Bushfire Management Plan 2020–24.</p>	Emergency Management Parks & Natural Resources	<p>Annually, and more frequently according to the season.</p> <p>Pruning program four yearly.</p>
5.6.	<p>Bushfire preparedness – private land</p> <p>Continue to deliver the Fire Prevention program including 2 x FTE roles.</p>	<p>Council has legislated powers under the Fire & Emergency Services Act to encourage landowners to take early action to reduce bushfire fuel on their property.</p> <p>High risk properties are inspected by Fire</p>	Community Safety	2022–27

		<p>Prevention officers and notices can be issued with fines of \$473.</p> <p>Outside of the fire danger season, Fire Prevention Officers administer the vegetation pile burning permit process. This allows residents in specified areas to burn bushfire fuel safely.</p>		
5.7.	<p>Bushfire risk – Crown land</p> <p>Advocate to SA Water and Department for Environment & Water to maintain effective firebreaks and to negotiate standards of vegetation management.</p>	<p>As part of the risk assessment of our Bushfire Management Plan, crown land has been assessed as our greatest bushfire risk.</p> <p>The risk is higher in areas on the peri-urban fringe that have exposure to the hills face.</p>	Emergency Management	2022–27
5.8.	<p>Bushfire – emergency relief</p> <p>Notify the community of relief/recovery centres in the event of an emergency, with consideration of the location of the disaster and safe travel.</p> <p>Provide assistance where requested to emergency relief efforts in other regions through the Local Government Functional Support Group.</p>	<p>In the immediate aftermath of a fire, Council works to repair and rebuild assets such as roads, bridges, stormwater systems and fallen trees.</p> <p>Council facilities are often sought to host a relief centre for short term shelter, information and personal support services, or for recovery centres which can be in place for a much longer timeframe and are a</p> <p>one-stop centre to receive financial assistance, and seek referral to a wide range of recovery services.</p>	Emergency management	During bushfire emergencies

5.9.	<p>Bushfire – recovery phase</p> <p>Finalise the draft City of Onkaparinga Recovery Action Plan which outlines arrangement for longer term recovery efforts.</p>	<p>Once the initial activity of responding to a disaster passes, it is often local governments that are responsible for coordinating longer-term recovery efforts to rebuild communities. This can include supporting community recovery and wellbeing, restoring the natural environment and repairing infrastructure assets.</p>	Emergency Management Community	2023
5.10.	<p>Bushfire – state-wide bushfire risk Code Amendment</p> <p>Contribute to an update of the Planning & Design Code that will review the six Hazard (Bushfire Risk) Overlays as well as explore other planning instruments and mechanisms to assist in mitigating bushfire hazard impacts.</p>	<p>A key objective of planning and development policy is to consider protection from bushfire to ensure the safeguarding of human life and to prevent the loss of assets including infrastructure, cultural heritage and ecological assets.</p> <p>The current planning policies relating to bushfire risk are being reviewed by the State Government.</p>	Attorney Generals Department Development Policy	2022–23
5.11.	<p>Scenario planning for emergencies</p> <p>Conduct incident and scenario planning exercises with council staff that simulate an extreme weather event to test our Crisis Management Arrangements.</p>	<p>Staff undergo training exercises to test our response to a crisis e.g. Stormaparinga provided a storm and flood scenario that simulated an extreme weather event affecting several suburbs and a township.</p> <p>The scenario stretches our Crisis Management Team members to work through immediate response and recovery actions, including damage assessment, business continuity and ensuring staff safety and welfare.</p>	Emergency Management	Annually

5.12.	<p>Flooding – state-wide Flooding Hazards Code Amendment</p> <p>Contribute to an update to the Planning & Design Code that will divide areas into their level of risk to determine the type of development that is allowed and the conditions for approval.</p>	<p>This update will apply a consistent approach to flood mapping across the state that will incorporate future climate change scenarios to 2050 (sea-level rise and increase in rainfall intensity) and the impacts of residential development.</p>	<p>Attorney Generals Department</p> <p>Development Policy</p>	2022–23
5.13.	<p>Flood risk – stormwater capacity assessments</p> <p>Update existing stormwater capacity and flood risk data including updated climate change scenarios and development projections on one catchment per year.</p>	<p>There are eight creek catchments in the City of Onkaparinga – Field River, Christie Creek, Onkaparinga River, Pedlar Creek, Maslin Creek, Willunga Creek and Silver Sands.</p> <p>This risk-based review will include 2D modelling, updated climate change scenarios, and development projections to identify areas of flood risk including major storm events.</p>	<p>Technical Services</p> <p>Infrastructure Assets</p>	2023–24
5.14.	<p>Stormwater asset inspections – reducing localised flooding</p> <p>Inspect Gross Pollutant Traps every 8 weeks, and Side Entry Pits, headwalls, culverts and swales biannually to reduce localised flooding.</p> <p>Inspect all other assets as determined in the maintenance schedule.</p>	<p>We inspect our engineering assets regularly so that we can be confident that last minute checks are not required when storms are forecast.</p> <p>This proactive maintenance program has significantly reduced our localised flooding events.</p>	<p>Civil Maintenance</p> <p>Infrastructure Assets</p>	According to maintenance schedule
5.15.	<p>Staff capacity</p> <p>Identify job-specific training and learning opportunities for climate related risk.</p> <p>Develop sustainability-linked performance criteria for key positions and integrate into job specifications.</p>	<p>To make sure staff are empowered to identify and manage climate related risk within their role's responsibilities, they need to be confident about the impact of climate change on their day-to-day work,</p>	<p>Sustainability</p> <p>Learning and Development</p>	2023–27

		including opportunities for adaptation and mitigation.		
5.16.	Resilient South Regional Climate Partnership Renew the Resilient South Sector Agreement between local and State Government. Review the Resilient South Regional Climate Action Plan.	We are working regionally and with State Government to address climate change impacts and risks, and to identify opportunities in our region. By working together, we can coordinate our climate change response and increase our impact and influence.	Sustainability Resilient South – Cities Marion, Mitcham, Holdfast Bay, City of Onkaparinga, Green Adelaide and Department for Environment and Water.	2022–23
5.17.	Compact of Mayors Report to council on the cost–benefit of joining the Global Covenant of Mayors.	The Global Covenant of Mayors is the world’s largest global alliance for city climate leadership with membership of over 11,000 sub-regional governments, harnessing the collective impact of council action to address climate change. Members represent over 1 billion people worldwide and have pledged to reduce their greenhouse gas emissions and to prepare for the impacts of climate change.	Sustainability	2023–24

Appendix 1



Our Climate Change Strategy 2008 – 2013 was ground-breaking in local government and provided a foundation for our continuing mitigation and adaptation work.

This plan focuses on actions that have been informed from the findings of:

- Community Survey 2021
- Corporate Emissions Target and Roadmap technical report and Fleet Infrastructure technical assessment – The Energy Project
- Corporate greenhouse inventory
- Community emissions profile – Ironbark & Beyond Zero emissions.
- Coastal Adaptation Study – Mark Western & Associates
- Resilient South Resilient Asset Management project – URPS
- Climate risk assessment – governance – Climate Planning
- Climate risk assessment – operations – Edge Consulting
- Natural areas asset mapping – vegetation and woody weeds.
- Urban heat mapping and urban tree and vegetation mapping 2016–2020 ArborCarbon
- South Australian Government Climate Change Action Plan 2021–2025
- Climate Change Science and Knowledge Plan for SA

How this plan aligns to State Government

The South Australian Government Climate Change Action Plan 2021 – 2025 describes government-led objectives and actions to help to build a strong climate smart economy, further reduce greenhouse gas emissions, and support South Australia to adapt to a changing climate. Our state has already decoupled growth from emissions and is aiming to hit a target of net zero by 2050.

Our actions support the plan's objectives of:

- Accelerate strategic urban greening
- Embed climate change risk and opportunity into government policy and practice
- Develop a more circular economy
- Ensure secure, climate resilient regional and urban water supplies
- Build the climate resilience of landscapes, habitats and natural resources
- Support the uptake of low and zero emissions vehicles and fuels
- Provide for development and design that is low emissions and climate resilient
- Understand and reduce climate change risks to infrastructure
- Support communities and businesses to build resilience and adapt
- Enhance climate change adaptation in emergency management
- Provide high-quality and accessible climate change science and information
- Accelerate work towards net zero emissions in government.

Legislation

Council responsibilities are identified in the *Local Government Act 1999*. As a service provider, landowner and asset manager, councils have responsibilities to consider risks and take appropriate risk mitigation action.

Appendix 2 – Addendum to Climate Change Response Plan: Climate Emergency Declaration additional actions

The additional actions below were approved by Council on 18 July 2023, respond to the Climate Emergency declaration of 30 January 2023 and are aligned to the relevant goals of the Climate Change Response Plan. Items with ‘*add to x.x*’ indicate an enhancement of an existing Climate Change Response Plan action.

GOAL 2: CLIMATE READY COMMUNITIES – additional actions

Our communities understand their risks and know what they need to do to be ready for the impacts of climate change at a local level.

No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
Add to 2.3	Undertake a 12-month trial in which community can hire items that are not used as frequently such as cooking, camping items, binoculars etc. Reduce purchase/consumption and enable people to trial or use items without having to store them.	Library of Things	Sustainability/ Libraries	2023-25
2.7	Broaden the categories for sustainability rebates provided to the community to include items related to carbon emissions reduction (e.g. electrification).	Sustainability Rebates Program	Sustainability	2023-24
2.8	Develop a policy position on council's role in community batteries and virtual power plants (VPP)	Renewable energy and storage	Sustainability	2023-24
2.9	Build community awareness of sustainable housing options such as via the House of Tomorrow campaign.	Sustainable Housing	Sustainability	2024-27
2.10	‘Snapshot’ is a tool that provides a community emissions profile for local government. Signing up to the snapshot key emitters community profile enables a breakdown of categories to better understand where assistance and resources could be directed.	Community key emitters emission profile	Sustainability	2025

2.11	Investigate establishing a sustainable housing display at Woodcroft Green Hub.	Green Hub demonstration site	Sustainability	2024-25
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GOAL 4: LOW CARBON TRANSITION– additional actions

Our corporate emissions are reducing and our services and urban design support community efforts to transition to a low carbon City.

No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
Buildings, lighting, fleet and offsets				
Add to 4.11	<p>Trial applying an Environmentally Sustainable Design (ESD) checklist on one new and one renewal project to assess impact on existing processes at various stages of the project pipeline from scoping and design, through to procurement and construction. Track cost implications of lower carbon options.</p> <p>Develop an Environmentally Sustainable Development policy or framework for new buildings, maintenance and retrofitting of Council owned buildings.</p>	Building standards for council buildings	Green Buildings Sustainability Projects	2023-25 2025/2026
4.24	Assess remaining council owned and operated buildings for areas where further improvements can be made such as electrification that can demonstrate cost effectiveness	Emissions from council owned/operated buildings	Green Buildings	2027
4.25	Review the need for buildings and identify opportunities for reuse/retrofit before building new facilities.	Emissions from council owned/operated buildings	Property Community Assets	2023-27

	Apply an emissions lens to the community facilities review to identify opportunities to reduce council's footprint.			
4.26	Investigate opportunities to procure zero emissions energy in future electricity contracts via mechanisms such as Power Purchase Agreements (PPA).	Renewable energy	Sustainability Finance	2023-25
4.27	Consideration of climate change impacts and opportunities to decarbonise operations are incorporated into strategic plans such as Open Space Strategic Management Plan and Road Network plans.	Embedding climate change into strategic planning	Sustainability Assets Technical services	2024-27
4.28	Digitise processes to promote reduction in paper consumption wherever possible	Digitise	Various	Ongoing
4.29	Investigate opportunities for local offsets. Purchasing carbon offsets will be considered at a later stage as a last resort for emissions that cannot be reduced.	Carbon Offsets	Sustainability Finance	2023-27
Procurement				
Add to 4.22	Investigate methods to assess and reduce embodied carbon emissions for specific materials. <i>Embodied carbon refers to the greenhouse gas emissions arising from the complete life cycle of a material from extraction and manufacture through to disposal. For example, use of alternative or reduced materials for a landscaping project.</i>	Greening the supply chain	Sustainability Projects Assets Technical Services	2024-25
Add to 4.23	Develop a circular economy transition plan	Supporting a circular economy	Sustainability Waste	2025-26

4.30	Updating procurement policy and practices to ensure they support decarbonisation of the supply chain.	Procurement policy and practices	Procurement Governance Sustainability	2023
4.31	Continue to improve data collection and measurement, particularly around scope 3 emissions and integrate with existing Council data collection systems where possible.	Emissions data – systems and management	Sustainability Finance Procurement	2023-27
4.32	Continue to subscribe to the aspire circular economy platform.	Circular Economy	Sustainability Economic Growth	2023-27
Capacity Building, education and leadership				
4.33	Deliver ongoing climate change training and education to all councillors and staff on climate risk, adaptation and mitigation solutions. Embed climate change training in the induction program for new staff.	Strengthen skills and capacity building in climate response	Sustainability	2023-27
4.34	Build capacity and understanding around decarbonisation with the community and business sector, and support staff as needed. Focus on specific materials of high impact initially.	Strengthen skills and capacity in climate response	Sustainability Economic Growth Assets Technical Services	2024-27
4.35	Assign a funding pool specifically to support staff keep up-to-date on industry trends and best practice in the fast moving fields of ESD, emissions reduction and other relevant topics. One example is CULTIVATE, a new training program developed and being offered at Marion, Charles Sturt and Port Adelaide Enfield around ESD with targeted staff and includes site visits to showcase the concepts discussed.	Support opportunities for knowledge building/industry trends in ESD	Sustainability Projects Construction Property Maintenance	2024-25

4.36	Join Climate Emergency Australia - a network of Australian councils that have declared, recognised or acknowledged a climate emergency. Climate Emergency Australia advocates on behalf of its members to other levels of government, building the capacity of councils to respond to the climate emergency	Climate Emergency Australia	Sustainability	2024-25
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GOAL 5: CLIMATE RISK REDUCTION – additional actions

We have the information we need to make good decisions to manage our climate risks, and we share this information with our communities and partner organisations.

No	Deliverable	Project/Initiative	Project owner (Team)	Delivery Year
Add to 5.17	Join the Global Covenant of Mayors - the world's largest global alliance for city climate leadership with membership of over 11,000 sub-regional governments, harnessing the collective impact of council action to address climate change. There is no cost to join.	Global Covenant of Mayors	Sustainability	2023-24
5.18	Develop a Climate Policy to guide risk assessment and planning processes.	Climate Risk – Governance	Sustainability Governance	2024
5.19	Review of ongoing funding mechanisms to enable council to continue to adequately respond to climate change impacts – mitigation, adaptation and resilience.	Funding Mechanisms	Sustainability Finance Infrastructure Services	2023-27