

CLIMATE ACTION PLAN MITIGATION STRATEGY



Mosman Climate Action Plan - Mitigation Strategy
First published April 2021

Copyright 2024
All information, graphics and photographs are copyright
of Mosman Council unless otherwise noted. The content is
protected by Australian and International Copyright and
Trademark laws.

For further information contact
Mosman Council
Civic Centre
573 Military Road
Spit Junction NSW 2088
9978 4000
council@mosman.nsw.gov.au



Acknowledgement

Mosman Council acknowledges that it operates on the traditional lands of the Borogegal and Cammeraigal people, of the Gai-mariagal clan of the Eora Nation, and we pay our respects to Elders past, present and future.

As the Traditional Custodians for thousands of years, the Cammeraigal people lived in and around the waterways of Mosman, and cared for and respected the land. Their spirit lives on. We acknowledge them and all Indigenous peoples past, present and future.

Commitment to Climate Action

This *Mosman Climate Action Plan - Mitigation Strategy* outlines Mosman Council's commitment to mitigate environmental impacts by Council and across the Mosman Local Government Area (LGA).

It is the first of two Strategies for Mosman's Climate Action Plan, that will also include the *Resilience and Adaptation Strategy*. These follow Council joining the Climate Council's Cities Power Partnership, declaring a Climate Emergency and establishing a Climate Action Community Consultative Committee.

Mitigation involves actions that reduce dependence on fossil fuels and therefore reduce the rate of climate change. Council aims to lead the Mosman community by example with a target of net zero emissions by 2030 for its operations and aspires to achieve net zero emissions by 2040 for the Mosman LGA.

This provides the long-term strategy to guide decision-making by Council. It will be informally reviewed as required and reported to Council every four years to ensure its alignment with community values, priority issues, and gaps in service provision.

Contents

From the Mayor	03
From the General Manager	04
Introduction	06
Snapshot of Mosman	08
Context	10
Global	10
National	11
State	11
Local Leadership	12
Climate Emergency Declaration	12
Emissions Targets	13
Strategic Direction	13
Local Context	14
Council Operations	16
Mosman Community	20
Council and Community Collaboration	22
Action Areas	25
Energy Use	26
Biodiversity and Trees	30
Water Cycle	34
Waste	38
Transport	42
Built Environment	44
Funding and Governance	48



Real change happens at a community level and every local government, including Mosman Council, has a responsibility to use its voice and influence to push for effective climate action.



From the Mayor

Human induced climate change and the need to act urgently to reduce global warming is accepted by the majority of the scientific community and, I believe, by the majority of Mosman residents.

Real change happens at a community level and every local government, including Mosman Council, has a responsibility to use its voice and influence to push for effective climate action.

Our community values our beautiful coastline, reserves and parks, and Mosman Council has a strong and proud history of significant work in the area of environmental management. Building on this long tradition of environmental stewardship, Council formally recognised the urgent need for action on climate change in November 2019 by declaring a Climate Emergency.

In July 2020, Council adopted net zero emission targets for Council operations and the Mosman community. These targets are realistic and achievable, and this *Climate Action Plan - Mitigation Strategy* is our foundational charter. It spells out both an emissions reduction pathway for Council and provides leadership, guidance and education on an emissions reduction pathway for the Mosman community. It builds on the great efforts that are already underway and establishes clear policy direction for future programs so they can be adequately scoped, costed and adopted in line with Council's overall strategic plans.

This strategy has been developed with extensive input from the community and the Climate Action Community Consultative Committee will provide ongoing valuable advice and recommendations to Council.

Meeting our netzero emission targets is a journey I know Council and the broader Mosman community are ready to embrace.

A handwritten signature in black ink that reads "Carolyn Corrigan". The signature is written in a cursive, flowing style.

Carolyn Corrigan
Mayor

From the General Manager

Mosman Council is a forward thinking organisation with a track record of innovation to improve the efficiency and effectiveness of its operations.

Mitigating the impacts of climate change presents one of the most complex challenges of our time. It requires agility, responsiveness, adaptability and big picture thinking.

This *Climate Action Plan - Mitigation Strategy* is the product of a full and comprehensive analysis of what Council is doing, and can do, to help lead the Mosman community to a net zero emissions future.

Over the past few years Council has built significant momentum in factoring sustainability into decision making, and has been proactive in implementing practical solutions to reduce energy and resource consumption. These range from installing solar panels on Council buildings and harvesting stormwater for irrigation, to improving bicycle infrastructure and running a comprehensive schedule of community education programs for energy efficiency and recycling.

This mitigation strategy brings together and formalises Council's approach to climate change with one main intent to achieve net zero emissions targets within the shortest possible time frame, in a way that is sustainable and financially responsible.



A further document, the *Mosman Climate Action Plan - Resilience and Adaptation Strategy*, is currently being developed and together the two will outline Council's comprehensive commitment to action on climate change.

It is a significant task with touch points across all Council operations and involves collaborating with various organisations and all parts of the Mosman community.

We are confident that, together with the Mosman community, Council can succeed in this endeavour. This strategy will ensure that the right steps are taken and the right projects are prioritised to effect real and sustainable change.

Dominic Johnson
General Manager



Over the past few years Council has built significant momentum in factoring sustainability into decision making, and has been proactive in implementing practical solutions to reduce energy and resource consumption.

Introduction

Climate determines how human and natural environments function, and changes in climate have significant impacts on societies and ecosystems.

Average temperatures in Australia have been steadily rising and the past decade was the hottest in human history. Records are showing higher temperatures across all seasons, drier conditions across more of the country, and widespread increases in fire weather and declines in rainfall.

Climate changes are generating more natural disasters and extreme weather conditions, with direct and far-reaching negative impacts. Impacts that include displacement and homelessness, disease and ill health, and food and water shortages.

Australia's experience is a stark wake-up call to the vulnerabilities we face on our own doorstep. Bushfires of unprecedented scale and ferocity, sustained drought, severe heatwaves and floods, are felt more acutely, more often, and affect a growing number of lives and livelihoods.

Inaction will put us on a trajectory that seems guaranteed to scale to worse and more disastrous consequences for future generations, as well as a projected national cost of \$3.4 trillion and 880,000 jobs over the next 50 years.

As members of our local, national and global communities we have reached a point that demands meaningful and broad scale action to reduce carbon emissions, pollution and biodiversity loss, and that we mitigate our contribution to climate change. It is clear that we can no longer rely on fossil fuels, that we must decarbonise our economies and societies, transition to sources of clean energy and work harder to conserve our natural environments.

This *Mosman Climate Action Plan - Mitigation Strategy* is focused on mitigation and has a two-pronged approach; management of Council operations and guiding the Mosman community as a whole. It responds to community priorities and presents how as a local government organisation and a community we will:

- Reduce carbon and greenhouse gas (GHG) emissions;
- Promote sustainable lifestyles and practises;
- Enhance, protect and respect waterways, bushland, nature, wildlife and ecological systems; and
- Reduce energy and water consumption, waste, and encourage reuse and recycling.

Mosman Council is confident that it can achieve its net zero emissions targets, and build the capacity in the Mosman community that is central to the success of this strategy.

Mitigation involves actions that reduce dependence on fossil fuels and therefore reduce the rate of climate change.



Snapshot of Mosman

Situated on Sydney's lower north shore eight kilometres from the Central Business District Mosman occupies 8.7 square kilometres surrounded by scenic foreshore and national parks north-east of Sydney Harbour.

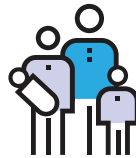
Mosman is a relatively small local government area, home to approximately 30,000 residents and 12,000 households. Population density is medium to high overall, with a smaller average household size than Greater Sydney, and the residential population is predominantly English speaking, educated, professional and conservative.

Compared to Greater Sydney, Mosman has an older median age with residents 50 years and over accounting for almost 40% of the population, qualifications of residents are higher, there is a higher proportion of professionals, and a significantly larger proportion of high-income households. The median age of people in Mosman was 42 years. Children aged 0 - 14 years made up 17.6% of the population and people aged 65 years and over made up 19.1% of the population.

28,123
residents



31%
live alone



28%
couples with children



13%
older couples without children

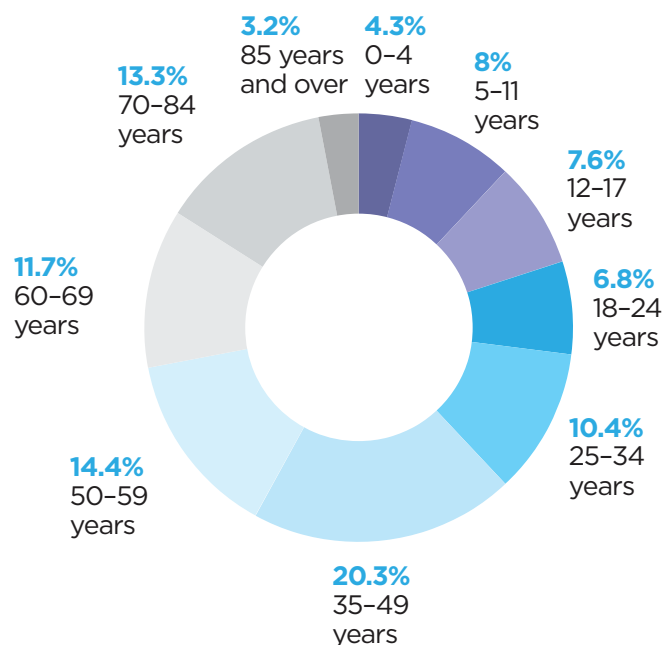


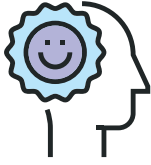
53%
have lived at the same address for more than 5 years

16%
speak a language other than English at home

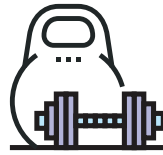
35%
were born overseas

54%
residents who identify with a religion





99%
residents who think
their quality of life
is 'good' to 'excellent'



30.1%
adults 16 years and over
undertaking insufficient
physical activity



25%
households with
a mortgage



87.6 years
life expectancy
at birth

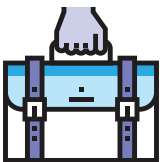


54.6%
residents aged 15
years and over with a
Bachelor or higher degree

32%
households renting



33%
proportion of housing
that is separate dwellings



14,000
workers



62%
residents in the
labour force

41%
proportion of housing
three or more storeys



3,400
residents doing
paid work locally



4,800
residents who do
voluntary work



86%
households with
internet connection



2,700
residents who provide
unpaid care for the
aged and disabled



20%
employed residents work
in professional, scientific
and technical services



10%
households with
3 or more cars

Context

Global

Global leadership on sustainability and mitigating climate change is provided by the United Nations' Sustainable Development Goals (SDGs) and the Paris Agreement, an agreement within the United Nations Framework Convention on Climate Change (UNFCCC).

Australia was one of 193 countries to adopt the SDGs in 2015. The 17 goals, also known as the Global Goals, are designed to provide a blueprint for sustainable development to 2030. They provide a call to action, a roadmap and a set of principles for all states to work towards.

Australia is also one of 196 signatories to the Paris Agreement, ratified in 2016, which aims to strengthen the global response to climate change. The goal of the Paris Agreement is to keep the increase in global average temperature to well below 2° Celsius above pre-industrial levels, and to pursue efforts to limit the increase to below 1.5° Celsius. It is a target that requires decarbonising of economies to achieve a 45% cut in emissions by 2030 and net-zero emissions - also referred to as carbon neutrality - by 2050. Under the Paris Agreement, states must submit their emissions reduction commitments, known as Nationally Determined Contributions (NDCs).

SUSTAINABLE DEVELOPMENT GOALS



Figure 1 - The Sustainable Development Goals (SDGs). Source: The United Nations

National

The Australia Institute's annual Climate of the Nation research report tracks attitudes towards climate change and energy including causes, impacts and solutions.

The 2020 Climate of the Nation report found that 80% of Australians think we are experiencing problems caused by climate change and 71% think Australia should be a world leader on climate action.

Australia's national climate change strategies are managed and delivered by the Federal Department of Industry, Science, Energy and Resources. The department leads the development of Australia's Long-term Emissions Reduction Strategy and works with the Department of Foreign Affairs and Trade and the Department of Agriculture, Water and the Environment to negotiate Australia's obligations under the Paris Agreement.

The Federal Government has introduced the Climate Change Bill 2022. The Bill legislates the nation's commitment to reduce greenhouse gas emissions by 43% below 2005 levels by 2030, and net zero by 2050.

State

The NSW Government has a goal to achieve net zero emissions by 2050. Its objectives to reduce emissions and make New South Wales more resilient to climate change are outlined in the NSW Climate Change Policy Framework.

The foundation for NSW's action on climate change is the Net Zero Plan Stage 1: 2020 - 2030. This outlines how NSW will fast-track climate action through energy and emissions reduction initiatives. It aims to enhance the prosperity and quality of life of the people of NSW, while allowing the State to deliver a 70% cut in emissions by 2035 compared to 2005 levels, and achieve the goal of net zero emissions by 2050.

More information

Sustainable Development Goals

sdgs.un.org/goals

The Paris Agreement

unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

Climate of the Nation 2020, The Australia Institute

australiainstitute.org.au/wp-content/uploads/2020/12/Climate-of-the-Nation-2020-cover-WEB.pdf

NSW Climate Change Policy Framework

environment.nsw.gov.au/topics/climate-change/policy-framework

NSW Net Zero Plan Stage 1: 2020-2030

environment.nsw.gov.au/topics/climate-change/net-zero-plan

Climate Change Bill 2022

dceew.gov.au/about/news/climate-change-bill-2022

Local Leadership

Climate Emergency Declaration

In November 2019 Mosman Council voted to declare a Climate Emergency, stating that climate change poses a serious risk and should be treated as an emergency.

At the time Mosman Mayor Carolyn Corrigan said:

Cities Power Partnership

Council is a member of the Cities Power Partnership, a network of local government areas that have pledged to reduce emissions through specific actions. Being part of this network forms an integral part of Council's ongoing commitment to reducing carbon emissions and protecting Mosman's unique natural environment for current and future generations.



This declaration is in keeping with Mosman's longstanding commitment to reducing its impact on the environment, and educating our community about living more sustainably.

We join with and support other Councils and Local Government NSW in calling on state and federal governments to take urgent action to at least meet the Paris Agreement emissions reduction targets.

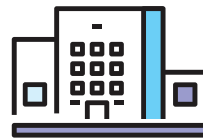
Emissions Targets

Council has been steadily reducing emissions, and aspires to lead by example and ensure environmental sustainability is systemic and embedded across its day-to-day business, services and operations. In July 2020 Council committed to:

- Net zero emissions by 2030 for its operations, and
- An aspirational target of net zero emissions by 2040 for the Mosman community.

Strategic Direction

The *Mosman Climate Action Plan - Mitigation Strategy* aligns with [MOSPLAN](#), a suite of integrated documents that include Mosman Council's 10-year *Community Strategic Plan*.



Council Operations

Target: net zero by 2030



Mosman Community

Target: aspirational net zero by 2040

A survey by Micromex Research in 2023 showed that 78% of Mosman residents are concerned about climate change, including the impacts on quality of life, ecosystems and future generations.



Local Context

The Mosman Local Government Area (LGA) generates approximately 185,404 tonnes of emissions annually. This estimate is based on electricity and gas emissions data supplied by Resilient Sydney, waste data captured by Council and transport emissions based on the number of vehicles in the LGA.

By way of comparison to other LGAs Resilient Sydney provides the following data, which should also be considered in the context of Mosman's size, residential nature and industry profile (Figure 2).

A breakdown of CO2 emissions within the Mosman LGA is shown in Figure 4.

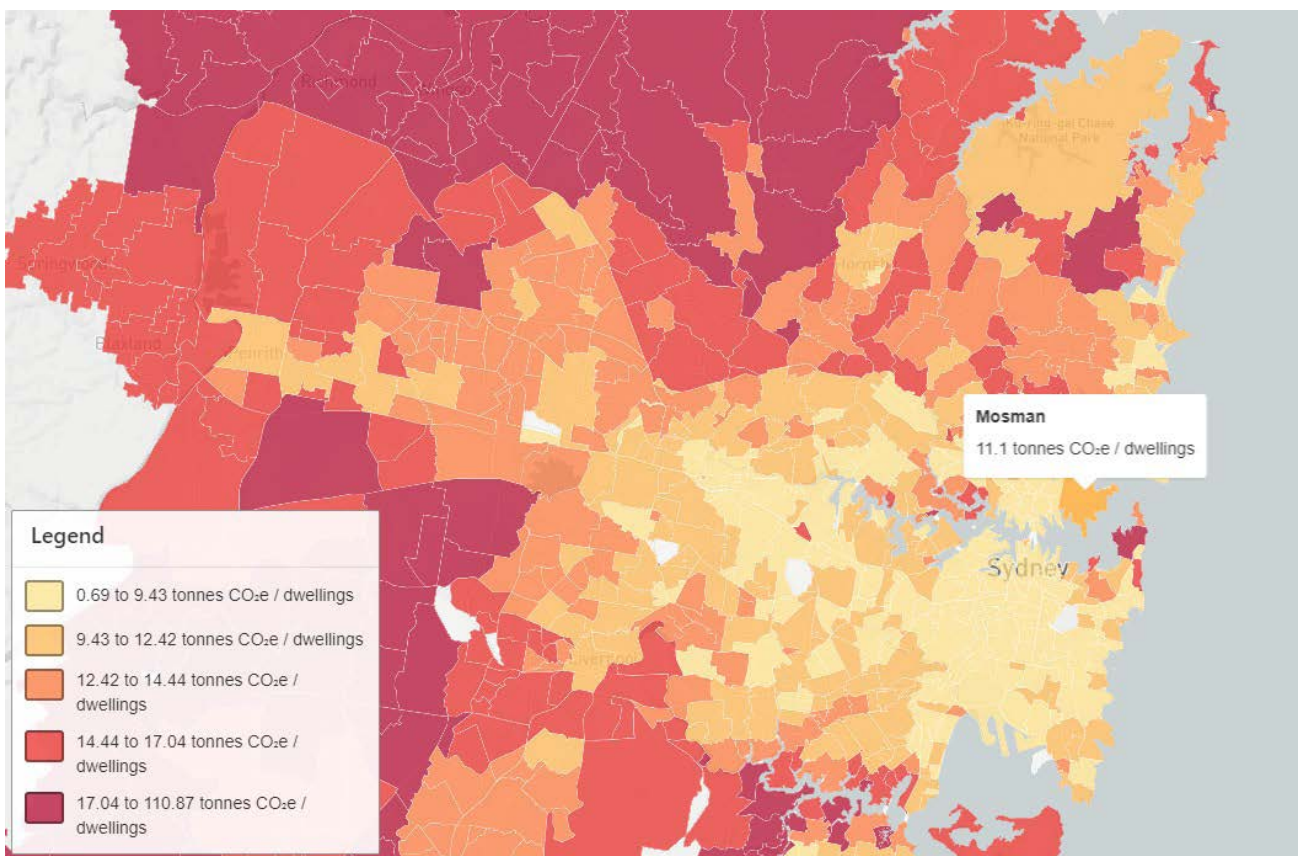


Figure 2 – Greater Sydney residential greenhouse gas emissions per dwelling by suburb 2021-22.

Source: Resilient Sydney

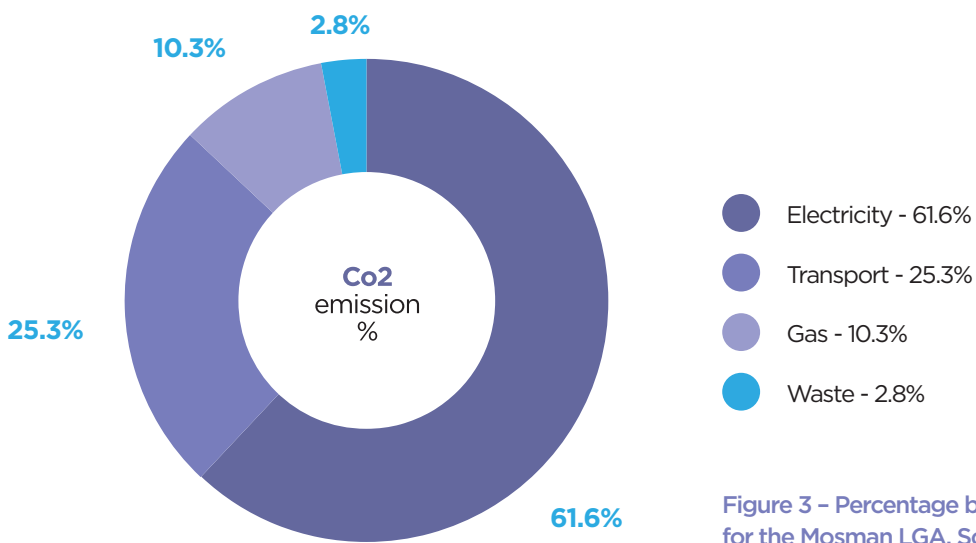


Figure 3 - Percentage breakdown of emissions for the Mosman LGA. Source Resilient Sydney (Electricity, Transport, Gas), Council data (Waste).





Council Operations

Target: net zero by 2030

Current emissions

Council operations account for approximately 1.2% of emissions in the Mosman LGA, a total of 2,142 tonnes of CO₂-e per year.

The drive for sustainability is changing the way local governments around Australia and the world operate and Council's emissions are on a downward trajectory. Over the last decade Council has reduced its operational energy emissions by 98.9%.

This has been achieved through a variety of measures including more efficient use of energy, upgrading of buildings, switching to LED lighting, installing rooftop solar PV on building assets and technological and behavioural efficiency measures. Council's electricity is also supplied by 100% renewable energy.

Electricity is a significant source of emissions, and reducing this is a priority. Council has been also been focusing efforts on:

- Refining procurement processes to positively influence the supply chain
- Ensuring projects are designed and delivered to high sustainability standards, and
- Implementing staff behavioural change programs to reduce resource use and increase recycling.

From 1 July 2022 all of Council energy has been supplied by renewable sources as part of a deal secured along with 24 other participating councils.

Council has 150Kwh rooftop solar systems on its building assets saving 140 tonnes (CO₂-e) per annum.

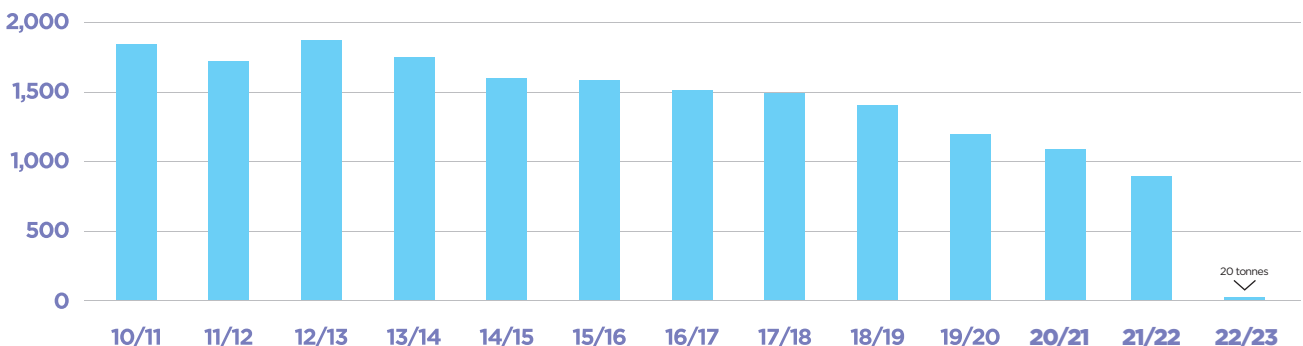


Figure 4 - Mosman Council GHG Emissions from energy and gas use as per State of Environment reporting. CO₂-e Tonnes during last 13 years.



What are we measuring?

To provide a clear representation of emissions, reporting and measurement has been broken down into three categories:

Scope 1 - Direct emissions from Mosman Council owned or controlled sources such as fleet vehicles and waste.

Scope 2 - Indirect emissions associated with the purchase of electricity consumed by Mosman Council.

Scope 3 - Indirect emissions that occur as a result of Council activities of the organisation, but occur from sources outside the organisation's control boundary such as streetlighting.

Note: Indirect emissions are much more difficult to control and measure.

Pathway to net zero

Council's current emissions are 367 tonnes of CO₂-e per year.

Council is still committed to reducing energy use and providing its own renewable energy through rooftop solar PV on suitable building assets and currently has solar PV on three buildings. It also has battery storage for two of the solar systems where excess power is generated and the facility requires power at night.

See the tables in the section for 'Action Areas' for more detailed information on specific projects.

Table 1 - Council emission source and reduction pathway

Source	Tonnes CO2-e	Reduction action	Saving (current) CO2-e	Residual emissions CO2-e
Electricity small sites (Scope 2)	897	Renewable energy supply	897	0**
		Solar PV systems		
		LED light conversions		
		Battery installations		
		Building efficiency studies		
Streetlighting (Scope 3)	542	Renewable energy supply	542	0**
		LED light conversions		
Gas (Scope 1)	20	Electrification	0	20
Waste * (Scope 1) Council generated waste*	261	Recycling waste at depot separating organics and metals	246***	15
Transport (Scope 1) Car fleet	30	Transition fleet to EV	0	30
Staff vehicles (Scope 3)	123	Encourage staff use of public transport, electric vehicles, active transport.	0	123
Grand total	2,142		1,775	367

* Council generated waste as measured at the Council Depot.

** All electricity is currently supplied by renewable energy.

*** Recycling 94.3% of waste at Council Depot.

Note: This table represents the major sources of emissions for Mosman Council operations. Application of the Climate Active Carbon Neutral Standard for Organisations will quantify further sources of emissions anticipated to be no more than 10%.



Mosman Community

Target: aspirational net zero by 2040

Current emissions profile

Building the capacity of the community to reduce emissions is central to this action plan.

The residential and business community accounts for approximately 99% of emissions within the Mosman LGA. The larger proportion of emissions is generated by residential properties, which account for 69% of the LGA's emissions (Resilient Sydney).

Council's role in reducing community emissions will include:

- Engagement and education to build residents' capacity to take action
- Collaboration and knowledge sharing with community groups, businesses and schools, and
- Forging new partnerships to facilitate emissions reduction.

Aspirational pathway to net zero

The actions in Table 2 represent a potential pathway to reduce emissions. This will be a more difficult task and further investigation and assessment of the data is required.

See the tables in the section for 'Action Areas' for more detailed information on specific projects.

Placing food organics in a compost bin can reduce domestic waste by 35%.



We installed rooftop solar in April 2020, and for the year so far (autumn and winter) we are a net producer, rather than user, of energy. And we still have the biggest production months to come! We will save several thousand dollars on an annual basis - Trent, Mosman

We switched to a renewable energy provider at the beginning of last year. We've received June and September bills, both were no higher than our previous bills, and we're glad to be buying renewable energy and supporting new solar farms and wind farms - Jeremy, Mosman

I installed rooftop solar in February this year and have already saved about \$1,500 on my electricity bills - Kate, Mosman

Table 2 - Community emission source and reduction pathway

Source	Tonnes CO2-e	Reduction action	Saving (potential) CO2-e	Residual emissions CO2-e
Electricity	114,164	Residential solar PV	114,164	0
		Business solar PV		
		Purchase offsets		
		Purchase renewable power		
		Energy efficiency		
Gas	19,153	Electrification	19,153	0
Waste (Scope 1 and 3) Domestic generated waste	2,546	Removal of food organics from landfill	1,018	1,528
		Subsidised compost bins		
		Waste avoidance education		
		Energy from waste		
Waste (commercial and industrial)	2,582	Business education on waste	904	1,678
Transport 17,828 cars in Mosman LGA	46,959	Hybrid vehicles	46,959	0
		Electric vehicles		
		Active transport		
		Public transport		
		Car share		
Grand Total	185,404		182,198	3,206

Note: The emission tonnes for electricity and gas have been provided by local energy providers as supplied by Resilient Sydney 2020/21. Saving potentials and residual emissions estimates are based on renewable energy potential and advances in waste processing. Assumptions also include 100% electric vehicle uptake by the community. These figures will be refined over time.



Council and Community Collaboration


Working closely with the community - engaging, informing and collaborating - is paramount for the success of this plan. Supporting and guiding Mosman residents and businesses to take the action required to reduce their emissions is vital for a sustainable future.

Council aims to strengthen the trust between it and the community, and build confidence in Council’s ability to plan and make decisions in a way that is responsive to the community’s present and future needs.

Council’s approach to community engagement follows the International Association for Public Participation’s (IAP2) Core Values and Public Participation Spectrum. This identifies the levels of engagement that evolve public participation from informing to empowering.

IAP2 Spectrum of Public Participation

IAP2’s Spectrum of Public Participation was designed to assist with the selection of the level of participation that defines the public’s role in any public participation process. The Spectrum is used internationally, and it is found in public participation plans around the world.

Increasing Impact on the Decision 					
	Inform	Consult	Involve	Collaborate	Empower
Public Participation Goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
Promise To The Public	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Commitments

In the course of implementing this plan Council commits to provide the community with timely and reliable information, and wherever possible incorporate community input to improve outcomes. Council will:

- Inform the community about the significance of the environment and climate change, and mitigation measures, through knowledge sharing and engagement.
- Ensure the community is kept up to date on Council actions and plan achievements.
- Actively engage the community to build understanding of the importance of taking action and facilitate capacity building for action to reduce emissions.
- Obtain feedback and provide ample opportunities for community members to communicate their views, concerns and aspirations.
- Allocate adequate resources and staff to education and engagement activities and support specific groups with resource materials
- Lead by example and implement mitigation measures that can be replicated by residents and businesses.

Actions

This plan will build on Council's current community engagement efforts to support climate change action, in particular the recent establishment of its Climate Action Community Consultative Committee with six community representatives and delivery of approximately 65 sustainability related programs and initiatives including:

- Council's 'Mosman Sustainability' program including maintenance of a Facebook page, distribution of a regular e-newsletter and capacity building workshops.
- Maintaining the informative 'Sustainable Living' section on Council's website: mosman.nsw.gov.au/environment/sustainable-living
- Water and energy saving initiatives.
- Education campaigns to reduce use of single use plastic.
- Waste reduction and recycling initiatives.
- Business food waste initiative.
- Community garden support.
- Compost Revolution and subsidised compost bins.
- Promotion and subsidised subscription to the Climate Clever App for homes and schools.
- Solar installation information on website.

More information on these programs and initiatives is available on Council's website: mosman.nsw.gov.au

GO ELECTRIC. GO ANYWHERE

EVIE
GO ELECTRIC. GO ANYWHERE

**Mosman
COUNCIL**

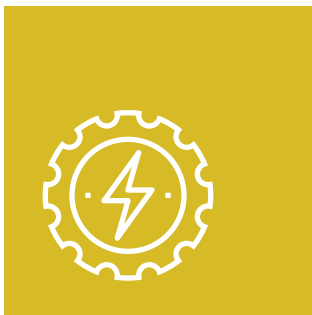


RTM



Action Areas

Mosman Council's mitigation strategy and action focuses on six key areas:



ENERGY USE



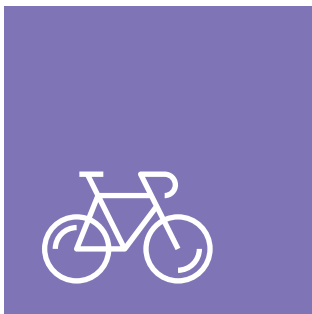
**BIODIVERSITY
AND TREES**



WATER CYCLE



WASTE



TRANSPORT



**BUILT
ENVIRONMENT**

This section outlines the objectives, completed, ongoing and future actions for each of these key areas. Results will be measured annually and recorded in Council's Pulse reporting system and reported through MOSPLAN.

Energy Use

A reverse cycle air conditioning unit operated for four hours a day will emit 3.32 tonnes of CO2-e per year

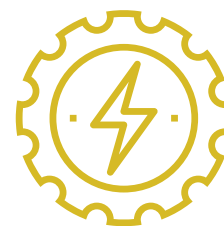
By converting street lighting to LED Council has reduce CO2-e emissions by 335 tonnes per year

Mosman Council's current electricity supply is sourced from 100% renewable energy

Objective

Implement and advocate energy efficiency and conservation to reduce energy consumption.

- Drive use of renewable energy and storage within Council and the community to lower power bills and increase energy independence and resilience.
- Drive transition of lighting and other energy sources to higher efficiency options within Council and community infrastructure.
- Supplement energy mitigation and solar generation with purchase of renewable power from the grid.



Completed, Ongoing and Future Actions

Table 3 - Energy Use Completed, Ongoing and Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
"Mosman Council Works Depot -11 kW, solar system and -14 kWh battery storage"	\$30,000	15,761 kWh/year = 13 tonnes CO2-e year	Completed	Emissions saved
"Mosman Civic Centre -70 kW, solar panels"	\$66,000	96,770 kWh/year = 79 tonnes CO2-e year	Completed	Emissions saved
"Marie Bashir Sports Centre -50 kW, solar system and -45 kWh battery storage"	\$84,000	48,300 kWh/year = 39.6 tonnes CO2-e year	Completed	Emissions saved
"Rawson Park Pavillion Solar 41kW "	\$45,000	53,942 kWh/year = 44 tonnes CO2-e	Postponed (restoration works pending)	Emissions saved
"Mosman Drill Hall LED lighting replacement"	\$13,000	2,116 kWh/year = 1.7 tonnes CO2-e	Funded	Emissions saved
"Marie Bashir Sports Centre LED lighting replacement "	\$67,500	26,201 kWh/year = 21.5 tonnes CO2-e	Completed	Emissions saved
Purchase renewable energy for all electricity sites excluding street lighting	Cost neutral	994,696 kWh/year = 816 tonnes CO2-e	Completed	Emissions saved
Purchase renewable energy for residential and main streetlighting	Cost neutral	894,000 kWh/year = 733 tonnes CO2-e	Completed	Emissions saved
LED lighting replacement residential and main streetlights	\$400,000	447,000 kWh/year = 335 tonnes CO2-e	Funded	Emissions saved
Vista Street car park LED lighting replacement	\$66,200	40,244 kWh/year = 33 tonnes CO2-e	Completed	Emissions saved
"Vista Street car park ventilation upgrade "	\$210,000	15,000 kWh/year = 12 tonnes CO2-e	Funded	Emissions saved
Replacing park lights with LED at Balmoral	\$80,000	10,000 kWh/year = 8 tonnes CO2-e	In progress	Emissions saved
Investigate gas usage, ceiling insulation and energy efficiency at Mosman Art Gallery	\$50,000	n/a	Completed	Emissions saved

Action	Estimated cost*	Emissions savings	Status	Indicator
Keep abreast of new sustainable energy solutions	nil	n/a	Ongoing	n/a
Air conditioning upgrade at Library	\$350,000	30,000 kWh/year = 24 tonnes CO2-e	Funded	Emissions saved
Wattblock energy efficiency assessments for 10 strata blocks	\$9,864	n/a	Ongoing 32 completed	No. completed
Provide information on sources of emissions and how to reduce them (Your Energy Friend videos for website)	\$2,475	n/a	Completed (promoted on Council website, social media pages and through Mosman Sustainability programs and workshops)	No. completed
Provide information about benefits of solar PV and buying green power - providing technical and trustworthy information	nil	n/a	Ongoing (promoted on Council website, outreach by Zero Emissions Sydney North, Mosman Sustainability workshops)	No. of residents
Provide information to homeowners on energy efficiency: insulation, energy efficient appliances, heating/cooling, etc.	nil	n/a	Ongoing (promoted on Council website, social media pages and through Mosman Sustainability workshops)	No. of residents
Promote Zero Emissions Sydney North webinars and other activities	nil	n/a	Ongoing	No. of residents
Promote community mitigation initiatives via social media	nil	n/a	Ongoing 2,100 followers on Facebook	Facebook data
Energy efficient pool pump promotion	nil	n/a	Ongoing (promoted on Council website)	No. of persons informed
Promote Council Mitigation Activities through various media platforms	nil	n/a	Ongoing	No. of residents
Work with community on climate action via Mosman Sustainability newsletter and brochure development and distribution	nil	n/a	Ongoing	Campaign monitor data
Work with community on climate mitigation topics via Mosman Sustainability webinars and events	nil	n/a	Ongoing	No. of attendees/post-event survey data
Mosman Sustainability program	nil	n/a	Ongoing	No. of persons subscribed
Liaise and generate discussion with local major land managers on mitigation projects - Department of Defence, Taronga Zoo, SHFT and NPWS	nil	n/a	Ongoing	projects initiated
Balmoral Oval floodlights LED replacement	\$120,000	11,500 kWh/year = 9.4 tonnes CO2-e	In progress	Emissions saved

Action	Estimated cost*	Emissions savings	Status	Indicator
Liaise and generate discussion with local major land managers on mitigation projects - Department of Defence, Taronga Zoo, SHFT and NPWS	nil	n/a	Ongoing	projects initiated
Promote electrification to remove reliance on gas to community	nil	Unknown	Ongoing	Reduction in gas usage for community
Medium priority - to be actioned within 4-5 years				
Mosman Drill Hall Solar 48kW	"\$60,000 \$11,000 savings a year on electricity bill "	72,000 kWh/year = 59 tonnes CO2-e	Not funded	Emissions saved
Georges Heights amenity building solar 11.62kW system	\$30,000	16,976 kWh/year = 13 tonnes CO2-e	In progress	Emissions saved
Allan Border Oval floodlights LED replacement	\$120,000	23,000 kWh/year = 19 tonnes CO2-e	Not funded	Emissions saved
Middle Head Oval floodlights LED replacement	\$200,000	To be confirmed	Not funded	Emissions saved
Rawson Oval floodlights LED replacement	\$140,000	To be confirmed	Not Funded	Emissions saved
Investigate inclusion of emissions profile and/or sustainability in guidelines for tenders	nil	n/a	Not funded	n/a
Low priority - to be actioned within 5-10 years				
Assess Council buildings insulation, prioritising older, less energy efficient buildings for retrofitting.	To be confirmed	To be confirmed	Ongoing (assessment of energy use in Art Gallery and Depot completed)	Number of buildings upgraded

* Excludes operational costs such as staff

Note: Mosman Sustainability formally known as the Living Mosman program

Biodiversity and Trees

One hectare of 30-year-old forest can absorb
10 tonnes of CO₂-e per year

15 trees over 5 years old can absorb 1 tonne of
CO₂-e per year

The burning of 1 hectare of forest releases 25
tonnes of CO₂-e

Objective

Protect and enhance the biodiversity and urban tree canopy to build resilience and preserve Mosman's environmental character.

- Increase revegetation and urban greening, as well as undertake ecosystem restoration to maintain unique biodiversity, clean air and water.
- Preserve and increase vegetation to provide carbon sequestration, and improve and retain soil condition.



Completed, Ongoing and Future Actions

Table 4 - Biodiversity and Trees Completed, Ongoing and Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
Plant native tree corridors through existing habitat link and park and street areas	\$30,000/year	n/a	Ongoing	200 per year
Bee/pollinator friendly planting/ native vegetation	\$10,000/year	n/a	Ongoing	5000 tubestock plants planted per year
New street and park tree planting focusing on Heat Island areas around Spit and Military Roads	\$120,000	n/a	In progress	No of plants in ground
Long term Bushland Restoration Contracts	\$400,000/year	n/a	Ongoing. 80.5% of native vegetation cover >90% for bushland sites	% of native vegetation cover >90%
Ongoing support of Council's 55 registered Bushcare volunteers	\$60,000/year	n/a	Ongoing	No. of active volunteers
Member of the Mosman, North Sydney and Willoughby Bush Fire Management Committee	nil	n/a	Ongoing	"No. of unplanned bushfire incidents No. of completed hazard reduction burns"
Renewal of Council's Flora and Fauna survey	\$35,000	n/a	Completed January 2022	No loss of flora and fauna species
Protection of tree canopy on private land	nil	n/a	Ongoing	No. of non-compliances
Protection of tree canopy on public land	nil	n/a	Ongoing	No. of non-compliances
Measure percentage canopy cover for Mosman LGA	nil	n/a	Ongoing. Currently at 34%	% Percentage of canopy cover.
Seagrass restoration at selected sites	\$30,000	n/a	In progress	Area planted
Living Seawall Installation Spit East	nil	n/a	Completed	Completed funded through Mosman Environment Trust





Action	Estimated cost*	Emissions savings	Status	Indicator
Low priority - to be actioned within 5-10 years				
Limit future marina development, improve moorings, restore local mangroves	\$35,000	Area managed by NSW Transport	In progress	Ecology level maintained
Habitat Stepping Stones program - connecting existing wildlife corridors	\$850	n/a	Ongoing	No. of registrations

* Excludes operational costs such as staff

Water Cycle

Over 2018-2022 Council's potable water use decreased by more than 30%

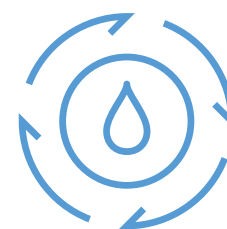
>75% of stormwater outlets have pollution collection devices

Council's current water use is 1.55 kilolitres per capita

Objective

Implement and advocate for water efficient programs to reduce dependency on potable water.

- Identify and implement opportunities for utilising water efficient technologies and recycled water.



Completed, Ongoing and Future Actions

Table 5 - Water Cycle Completed, Ongoing and Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
Promote waterwise within community engagement and education	nil	n/a	Ongoing	Reduction in community water use
Promote Sydney Water programs	nil	n/a	Ongoing	Reduction in community water use
Smart irrigation Spit West Reserve	\$90,000	n/a	Not funded	Reduction in water consumption by Council
Smart irrigation Rawson Oval	\$180,000	n/a	Completed	Reduction in water consumption by Council
Smart Irrigation Balmoral Oval	\$180,000	n/a	Completed	Reduction in water consumption by Council
Smart Irrigation Rosherville Reserve	\$90,000	n/a	Not funded	Reduction in water consumption by Council
Ensure compliance through the DA process to BASIX for water storage	nil	n/a	Ongoing	Reduction in community water use
Investigate water storage tanks on Council Assets	\$3,000	n/a	Not funded	Reduction in water consumption by Council
Investigation of stormwater collection sites within Mosman	\$15,000	n/a	Ongoing (collection system included in Allan Border Pavilion upgrade)	Reduction in water consumption by Council
>75% of stormwater outlets have some type of litter collection filtration device	n/a	n/a	Completed	Reduction of litter and organics entering waterways

Action	Estimated cost*	Emissions savings	Status	Indicator
Installation of water refill stations across Council parks and sport fields	\$9,000 per unit	n/a	Ongoing	Reduce single use plastic from water bottles
Continued use of stormwater re-use tanks under Mosman Drill Hall netball courts and Botanic Park to irrigate adjacent sport fields	n/a	n/a	Completed	Reduction in water consumption by Council and community
SQID improvement works including maintenance/ cleaning schedule	\$190,000 per year	n/a	Ongoing	Tonnes of material removed
Quarterly monitoring of Council's water use	n/a	n/a	Ongoing	Reduction in water consumption by Council
Protection and enhancement of Council's natural water courses and adjacent sites	n/a	n/a	Ongoing. Works are part of bushland restoration contract works, Clifton Gardens	No. protected sites

* Excludes operational costs such as staff



Waste

Currently 0.4 tonnes of CO₂-e is emitted into the atmosphere per tonne of landfilled mixed solid waste managed by Council

Council currently recycles 39.5% of domestic waste

Approximately 2,767 CO₂-e is being generated by domestic waste

Objective

Encourage and facilitate diversion of waste from landfill, circular economy and recycling.

- Integrate circular economy principles across Council to close the loop on resource use, ensuring suitable end markets.
- Lobby NSW and Federal Governments for better waste processing facilities and regulations.
- Position Council to take advantage of new technologies in waste management.



Completed, Ongoing and Future Actions

Table 6 - Waste Completed, Ongoing and Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
80% recycling of waste generated by Council at its depot	Cost saving	300 tonnes CO2-e	652 tonnes of waste generated through Council depot with 93% recycled	Emissions saved
Recycling of domestic waste, garden organics, paper, comingled	\$550,000/year	1,628 tonnes CO2-e	4,070 tonnes recycled"	Emissions saved
Through NSROC lobby State Government for better waste processing options	nil	n/a	Ongoing	No. of correspondence
Through NSROC Waste Alliance review domestic waste disposal contracts to achieve 80% processing, explore energy from waste etc	To be confirmed	To be confirmed	Ongoing	No. of correspondence
Financial support and access for residents to NSROC Community Recycling Centre at Artarmon	\$60,000 per annum	n/a	Ongoing	Waste diverted from landfill
Investigate recycling of bulky goods	To be confirmed	221 tonnes CO2-e	Currently 553 tonnes of bulky goods going to landfill	Emissions saved
Circular economy programs – programs focused on reducing landfill e.g. mulch from tree removals is used on Council parks and old footpath material is reprocessed and used as base for new footpaths.	nil	n/a	Ongoing	Continuation of activities
Minimum 15% recycled waste in new roads and footpaths	n/a	n/a	Ongoing	Projects completed
Council subsidised compost bins	\$80 per bin	n/a	Ongoing	No. of bins purchased

Action	Estimated cost*	Emissions savings	Status	Indicator
Promotion of worm farms	nil	n/a	Ongoing	No. of worm farms purchased
Support of community gardens	\$3,000	n/a	Ongoing	No. of Community Gardens
Recycling programs - Circular economy mattresses soft plastics	\$100,000	To be confirmed	Ongoing. Biannual mattress recycling program, Recycle Smart program	No. of events/ programs held
E-waste recycling	\$15,000 per event	n/a	Ongoing	Two events held per year
Community education on waste avoidance	nil	n/a	Ongoing	No. of events held
Shareholder at Kimbriki Environmental Enterprises	nil	n/a	Ongoing	Reduction of waste to landfill. Ensuring local recycling solutions
Medium priority - to be actioned within 4-5 years				
Food organics source separation	\$2 million per annum	517 tonnes CO2-e	Currently 6460 tonnes going to landfill. Estimated 40% are organics and capture rate of 50%. 1292 tonnes of food organics captured	Emission saved

* Excludes operational costs such as staff



Transport

A fuel powered average sized car will emit 3 tonnes of CO₂-e per year

A return plane trip to Europe will generate 4.5 tonnes of CO₂-e emissions

For every car share vehicle it is estimated that 10 cars are removed from the road

Objective

Encourage use of public transport, improve bicycle and pedestrian infrastructure, and facilitate the use of car share, and electric vehicles.

- Accelerate, and advocate for, sustainable transport to future proof Mosman and connect communities and regions.
- Facilitate transport with low emissions through car share, electric vehicle charging stations.
- Promote the reduction of emissions and sustainable community mobility through the Walking and Cycling Strategy including provision of adequate cycle lanes, bike parking and end-of-ride facilities.



Completed, Ongoing and Future Actions

Table 7 - Transport Completed, Ongoing and Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
EV charger installation – one fast charger installed at Civic Centre car park and two installed at Raglan Street car park	\$10,000 each	Currently 40,248 kWh delivered = 28 tonnes CO ₂ -e	3 x 50kW chargers installed	No. of EV chargers installed
Staff encouraged to use public transport subsidy (currently 27 staff)	\$48,000	Currently 57 tonnes CO ₂ -e	Funded	No. of staff claiming the subsidy
Support of car share - 16 designated car share spaces and multiple floating share cars	nil	n/a	Ongoing	"No. of persons using car share Currently 1,512"
Reduce number of cars owned by residents	nil	n/a	Ongoing - 17,778 registered vehicles (excluding motorbikes and trailers) in Council LGA	Reduction in registered vehicles in LGA
Development of new Mosman Active Transport Strategy - Walking and Cycling Strategy 2023-2028	\$15,000	n/a	Completed	No. of actions completed within strategy
Encourage public transport use	nil	n/a	Ongoing	No. of promotions completed
Encourage active transport use	nil	n/a	Ongoing	No. of persons using active transport
Council car fleet is 100% EV, Hybrid or Hydrogen by 2030	\$100,000	30 tonnes CO ₂ -e	Ongoing - one EV fleet car purchased/ one petrol car removed from fleet, staff electric bike	Emissions intensity of Council fleet
E-bike use for Council staff	nil	n/a	Completed - staff trained and one Council e-bike in use	Reduction in cars in Council fleet

* Excludes operational costs such as staff

Built Environment

6% of properties in Mosman are subject to the 10/50 Vegetation Clearing Entitlement Scheme

Mosman has 32.5 persons per hectare

970 properties have solar PV

Objective

Undertake sustainable development of Council facilities, and engage and educate the community on the benefits of a sustainably built environment.

- Roll out energy efficiency measures within Council and the community to create jobs, reduce energy costs and create more comfortable homes and workplaces.
- Plan and adapt coastal and marine infrastructure where necessary for sea level rise.
- Develop a community resilience plan for drought, heat island, storms, bush fire and water security.
- Advocate to the NSW Government on regulations for building requirements to shift towards better design, insulation, and low carbon materials.



Completed, Ongoing and Future Actions

Table 8 - Built Environment Completed, Ongoing and Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
Review LEP to promote sustainability e.g. landscape area requirements; dominance of landscape over built form, foreshore building line to protect buildings from potential sea level rise. Zoning of land protects biodiversity.	nil	n/a	Ongoing	LEP review
EV charging stations for apartments - planning	nil	n/a	Ongoing	No. of charging stations installed
Revision of DCP to strengthen sustainability measures	nil	n/a	Ongoing	Changes made
Review NSW Government Design and Place SEPP to ensure it meets its stated objectives	nil	n/a	Ongoing	Design and Place SEPP reviewed
Advocate for review of State Planning Policies	nil	n/a	Ongoing	Changes made
Planning for hazard adaptation, including: review of bushfire prone land maps, biodiversity corridor mapping, Acid sulphate soils, Coastal Management SEPP, flooding	nil	n/a	Ongoing	Changes made
Infrastructure SEPP - permits solar panels as exempt development	nil	n/a	n/a	Changes made
Duty planner enquiries - facilitates easiest approval pathway for solar panels (heritage buildings), rainwater tanks	nil	n/a	Ongoing	Changes made





Action	Estimated cost*	Emissions savings	Status	Indicator
NSW Government BASIX scheme - aims to reduce water consumption and greenhouse gas emissions by 40% compared to pre-BASIX buildings for developments above \$50,000.	nil	n/a	Ongoing	Changes made
Completion of Local Strategic Planning Statement (LSPS) that includes planning priorities and actions on sustainability and climate change consistent with the greater Sydney Commission's strategic plans for metropolitan Sydney and the North District Plan.	nil	n/a	Ongoing	Changes made
Investigate development guidelines to facilitate transition to electric vehicles	To be confirmed	n/a	In progress	Changes made
Medium priority - to be actioned within 4-5 years				
Change building regulations to reduce number of car parks	nil	n/a	n/a	Changes made

* Excludes operational costs such as staff

Funding and Governance

Oversight and resourcing for the delivery of this plan will be provided by Mosman Council.

Performance against this plan will be measured via quarterly reports to Council in line with current MOSPLAN reporting. The Council will also be informed in regard to progress by the Mosman Climate Action Community Consultative Committee.

The plan will also have links to other corporate documents including:

- MOSPLAN – Mosman Community Strategic Plan
- The Mosman Council Asset Management Strategy and related Asset Management Plans
- The Mosman Council Signage Style Design Guide
- The Mosman Council Public Domain Manual

Funding of projects will be subject to Council's annual budget process. This includes Council's review of projects against Council priorities and strategies at that time. Some projects have been highlighted in Council's Draft 10-year Capital Works Program in the various Asset Management Plans. In addition, some works have been accounted for in Council's existing Operational Budget.

These 10-year programs are based on Council's Long Term Financial Plan which is regularly updated and should only be treated as a guide to funding allocations.

Some specific projects may be subject to a detailed cost benefit analysis. This would include a quadruple bottom line assessment evaluating economic, social, environmental and governance impacts.

Council will seek opportunities to progress each project identified including active pursuit of grant funding. Opportunities for renewal projects to include a sustainability approach will also be examined. For example, pursuing the opportunity to install a solar system when undertaking renewal roof works on an existing facility.

The table below details the current draft funding identified for Climate Change projects in Council's existing Operational Budget and draft 10-year Capital Works Program. It should be noted that many projects are renewal projects or existing operational works that have a sustainability element. For example, included below is Council's expenditure of Bushland Contracts. This is an existing service of the Council to the community but also provides a sustainable outcome. These figures will be further refined as part of the Plan's development.

Table 10 - Council capital projects with identified funding and timeframe

Capital Projects with identified Funding	High Priority 1-3 years	Medium Priority 3-5 years	Low Priority 6-10 Years
Energy Use	\$350,000	\$100,000	-
Biodiversity and Trees	\$190,000	\$120,000	-
Water Cycle	\$100,000	\$50,000	-
Waste	\$100,000	-	-
Transport	\$100,000	\$50,000	-
Built Environment	-	-	-
Total	\$740,000	\$320,000	-

Table 11 - Council operational projects currently funded

Operational Projects with identified Funding	Reoccurring funding
Energy Use	\$500,000
Biodiversity and Trees	\$750,000
Water Cycle	\$150,000
Waste	\$200,000
Transport	\$50,000
Built Environment	-
Total	\$1,650,000

The tables above do not include staff costs and projects that require further investigated using the quadruple bottom-line assessment process.

CLIMATE
ACTION PLAN
MITIGATION STRATEGY

Mosman
COUNCIL

