MOSMAN

CLIMATE ACTION PLAN

MITIGATION STRATEGY

Mosman Climate Action Plan - Mitigation Strategy
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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.

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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.

Carolyn Corrigan
Mayor

MUNICIPAL CO

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

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.

30,000 residents

27% live alone

30% couples with children

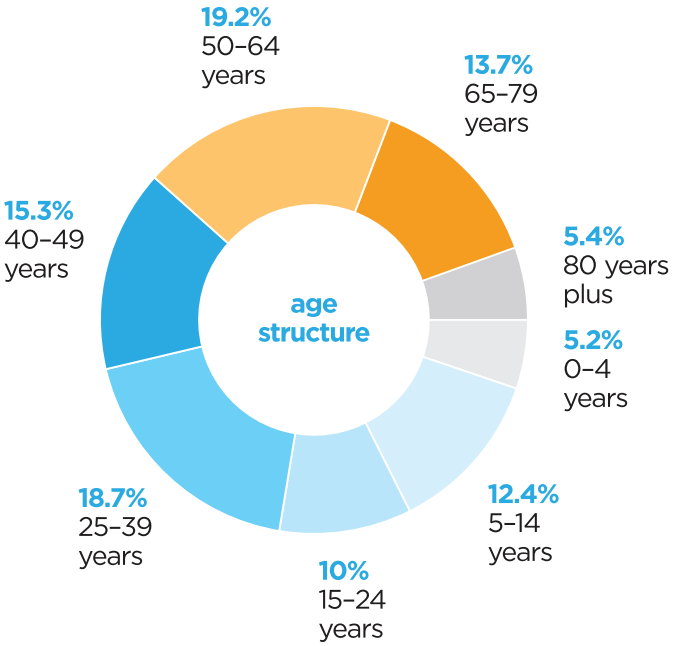
11% older couples without children

55% have lived here more than 5 years

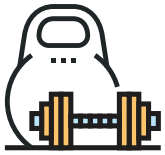
15% speak a language other than English at home

33% were born overseas

58% residents who identify with a religion



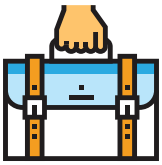
99%
residents who think their quality of life is 'good' to 'excellent'



32.8%
adults 16 years and over undertaking insufficient physical activity

86 years
life expectancy at birth

49%
residents aged 15 years and over with a university qualification



14,000
workers

62%
residents in the labour force

2,900
residents doing paid work locally

6,000
residents who do voluntary work

2,500
residents who provide unpaid care for the aged and disabled

31%
employed residents who catch public transport to work

25%
households with a mortgage

32%
households renting

34%
proportion of housing that is separate dwellings

40%
proportion of housing three or more storeys

86%
households with internet connection

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).

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.

Through Australia's NDCs the Commonwealth Government has pledged to meet the Paris Agreement through an economy-wide target to reduce greenhouse gas emissions by 26-28% by 2030, compared to 2005 levels. This is equivalent to a 50-52% reduction in per capita emissions and a 64-65% reduction in the emissions intensity of the economy.

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 35% cut in emissions by 2030 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

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.

Council Operations
Target: net zero by 2030

Mosman Community
Target: aspirational net zero by 2040

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*.

This articulates the Vision for Mosman:

A vibrant harbourside village where community, lifestyle and heritage are valued and where residents feel safe and connected.

It also outlines the strategic directions for Council's delivery program and operations. Particularly relevant to this strategy are:

Strategic Direction 3
An Attractive and Sustainable Environment
Strategies:

1. Protect and enhance Mosman's natural areas and local biodiversity
2. Use and encourage sustainable practices
3. Effectively manage parklands for community use

Strategic Direction 4
An Informed and Engaged Community
Strategies:

1. Actively involve the community in planning and delivering Mosman's future
2. Deliver community information that is accurate and readily available
3. Ensure the community knows how and why decisions are made

Council's aim is a stable, healthy, prosperous community that lives in cohesion with Mosman's dynamic and thriving natural environment, and for its practices and norms to ensure Mosman's eco-community is sustained for future generations.

To achieve these goals Council will build on its strong history of environmental stewardship and embed the Mosman Climate Action Plan - Mitigation Strategy into policy documents, operational manuals and procedures.

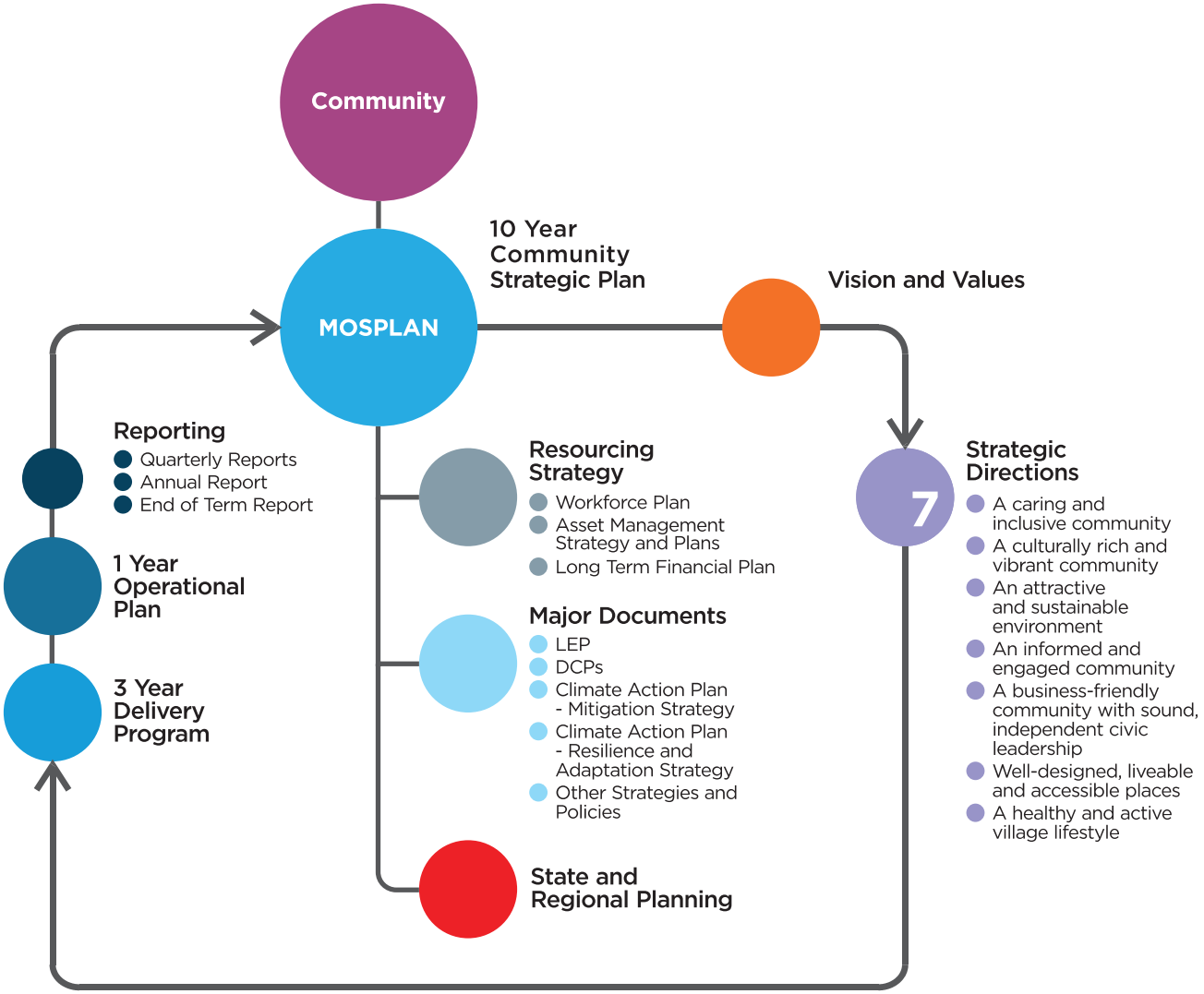


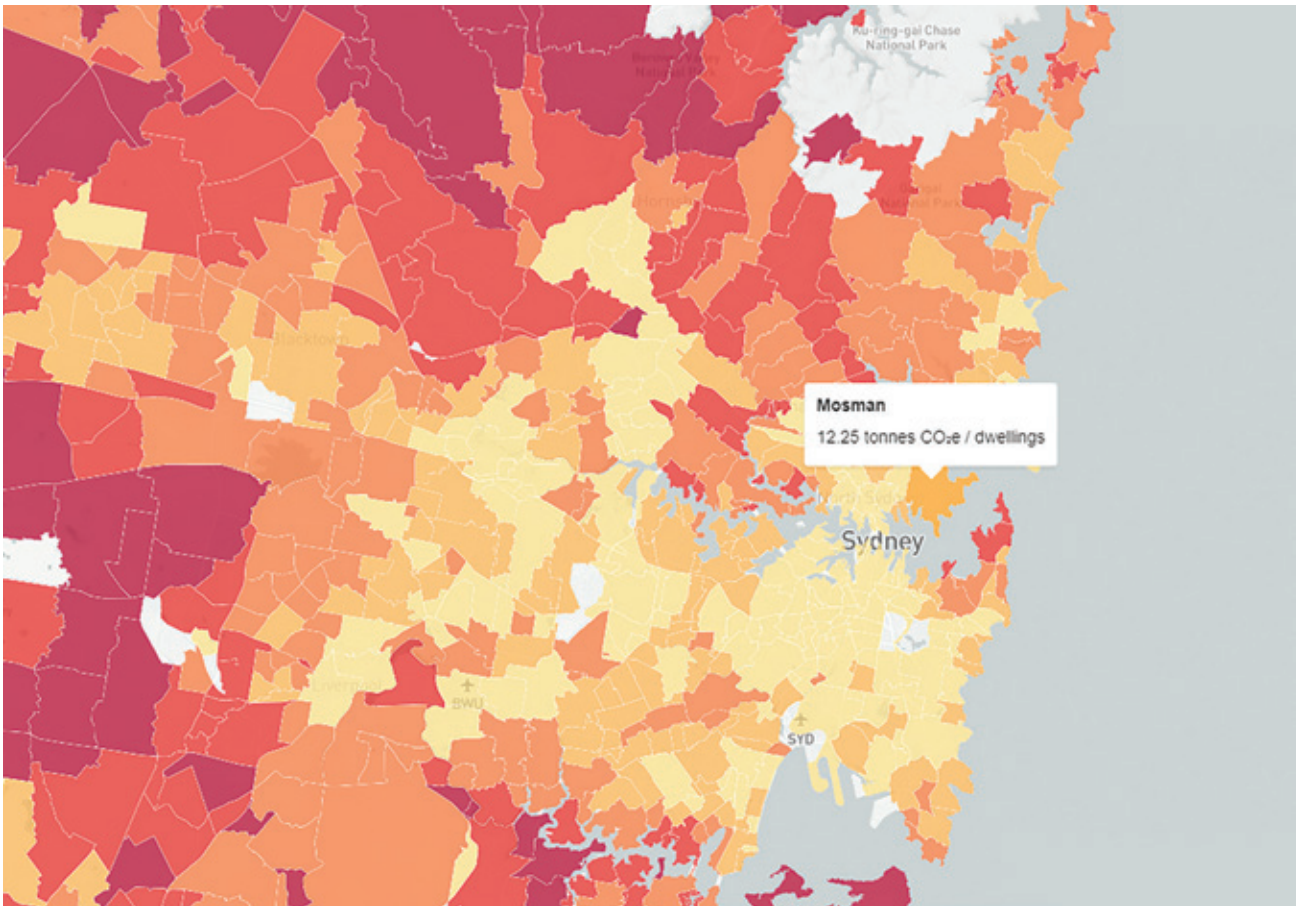
Figure 2 - Community Strategic Plan 2018-2028

LOCAL CONTEXT

The Mosman Local Government Area (LGA) generates approximately 188,760 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.

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



Legend for emissions graph - tonnes CO2-e/dwelling

- 0.01 to 8.84 tonnes
- 8.84 to 11.78 tonnes
- 11.78 to 14.20 tonnes
- 14.20 to 17.21 tonnes
- 17.21 tonnes and above

Figure 3 – Greater Sydney Residential Emissions Intensity by dwelling and suburb 2018-19. Source: Resilient Sydney

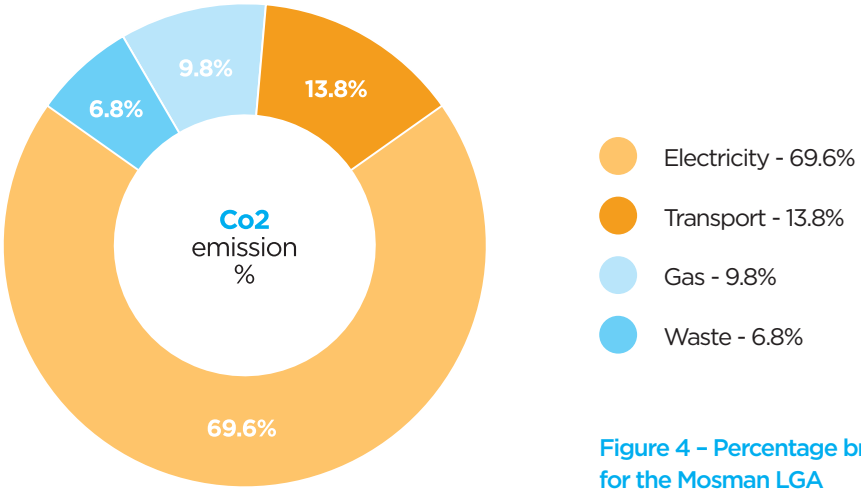


Figure 4 – Percentage breakdown of emissions for the Mosman LGA

Council Operations
Target: net zero by 2030

Current emissions

Council operations account for approximately 1.5% of emissions in the Mosman LGA, a total of 2,713 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 electricity emissions by 29%.

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.

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.

35% of energy requirements for Marie Bashir Sports Centre and Drill Hall are met by renewables.

Retrofitting of LED lighting in the Mosman Civic Centre, Barry O'Keefe Library and Mosman Art Gallery has reduced Council emissions by 216 tonnes (CO2-e)per annum.

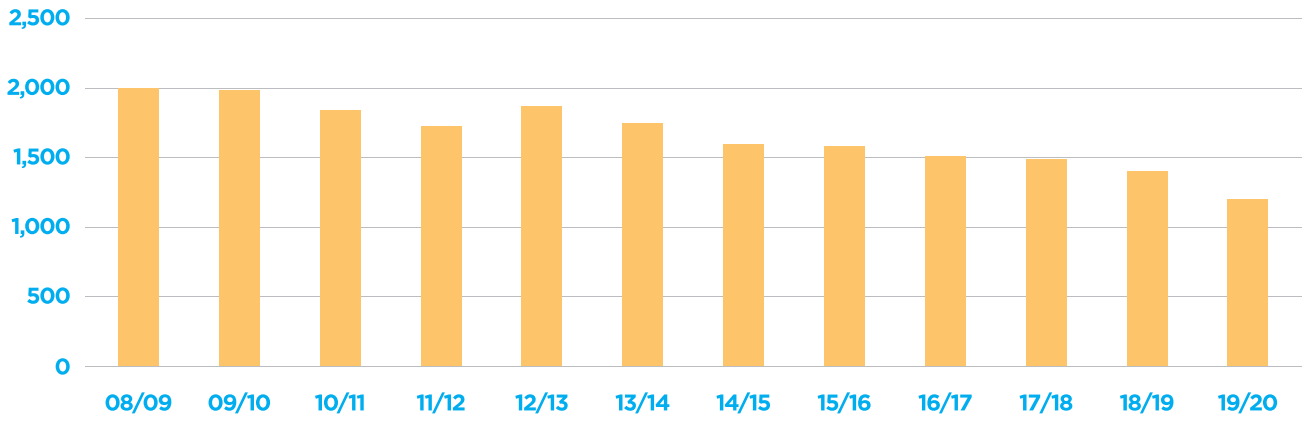


Figure 5 - Mosman Council GHG Emissions as per State of Environment reporting. CO2-e Tonnes during years 2000s.

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 2,713 tonnes of CO2-e. The actions shown in Table 1 represent a potential reduction in emissions of 1,758 tonnes of CO2-e.

Council is committed to providing its own renewable energy through rooftop solar PV on suitable building assets. It is also investigating battery storage. Residual emissions of 955 tonnes of CO2-e can be brought to zero by the purchase of renewable energy or offsetting. That is Council is not able to supply enough renewable energy on its assets to provide all of its electricity requirements.

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

Source	Tonnes CO2-e	Reduction action	Saving (potential) CO2-e	Residual emissions CO2-e
Electricity small sites (Scope 2)	302	Depot solar PV	62	37
		Drill Hall solar PV	58	
		Drill Hall LED lighting	2	
		Rawson Oval solar PV	43	
		Rawson Oval LED lighting	9	
		MBSC solar PV	61	
		MBSC LED lighting	21	
		Balmoral Oval LED floodlights	9	
Electricity large sites (Scope 2)	1,549	Vista St Carpark LED	25	786
		Civic Centre solar PV	109	
		Library solar PV	58	
		Alan Border LED floodlights	18	
Electricity large sites (Scope 3)		Park lights LED	8	
		Streetlights LED	545	
Gas (Scope 1)	47	Offset by purchasing carbon credits (ACCUs)	47	0
Waste * (Scope 1) Council generated waste*	660	80% of waste recycled	528	132
Transport (Scope 1) Car fleet	32	Offset by purchasing carbon credits (ACCUs)	32	0
Staff vehicles (Scope 3)	123	Offset by purchasing carbon credits (ACCUs)	123	0
Grand total	**2,713**		**1,758**	**955**

Table 1 - Council emission source and reduction pathway

* Council generated waste as measured at the 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 5%.

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 98.5% 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

Source	Tonnes CO2-e	Reduction action	Saving (potential) CO2-e	Residual emissions CO2-e
Electricity 131384 MWh	128,019	Residential solar PV		To be confirmed
		Business solar PV		
		Purchase offsets		
		Purchase renewable power		
		Energy efficiency		
Gas	18,195	Purchase offsets		To be confirmed
Waste	14,330	Community and business education		4,846
		Source separation for correct recycling - 40% recycling rate	4,794	
		35% reduction in landfill	4,690	
		Compost bins		
		Work farms		
Transport 20,007 cars in Mosman LGA	25,503	Hybrid vehicles		To be confirmed
		Electric vehicles		
		Active transport		
		Public transport		
		Car share		
		Purchase offsets		
Grand Total	**186,047**		**9,484**	**To be confirmed**

Table 2 - Community emission source and reduction pathway

Note: The emission tonnes for electricity and gas have been provided by local energy providers as supplied by Resilient Sydney 2018/19. The waste data is captured by Council and includes domestic waste - both for landfill and recycling (2019-20). It is noted that one tonne of food waste is equivalent to two tonnes of CO2-e and one tonne of non-putrescible landfill is equivalent to one tonne of CO2-e. Transport emissions are based on number of cars registered in the LGA. This data 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'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.

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.

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.

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iap2.org.au/wp-content/uploads/2020/01/2018_IAP2_Spectrum.pdf

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:

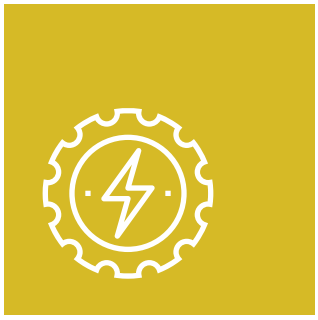
- Council's 'Living Mosman' program including maintenance of a Facebook page, distribution of a regular e-newsletter and capacity building workshops.
- Maintaining the informative 'Sustainable Living' section on Council's website: mosman.nsw.gov.au/environment/sustainable-living
- Annual Waste Less Recycle More programs and collections.
- 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

EzyMart
Vinnies
Google
USA Nails & Fashion
discount variety stores
SYLE ROAD DENTAL
DR IAN VERRURY
TAXI
ADIS
AUTOMATIC DOORS
PH: 1800 600 602
www.autodoors.com.au
•SALES
•SERVICE
•24 Hours Backup

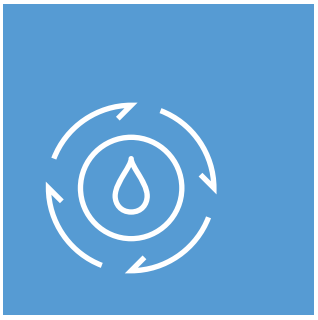
ACTION AREAS

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, current 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 CO_2 per year

By converting residential street lighting to LED Council can reduce CO_2 emissions by 196.7 tonnes per year

Mosman Council's current energy use is 68.9 kWh per capita

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.

Current Actions

- Retrofit main Council buildings with LED lights.
- Upgrade of solar panels and associated infrastructure at Marie Bashir Sports Centre.
- Solar panel scoping and feasibility assessment of all Council buildings.
- Quarterly monitoring of Council operation energy usage.
- Installation of photocopiers that only allow printing once a person is at machine.
- Installation of energy efficient air conditioning system in the Mosman Civic Centre.
- Continued roll out of the Solar My Schools program where Council facilitates solar panel installation at local schools by funding a feasibility study.
- Progressively replacing all lighting on public land and in amenity buildings with LED lights.
- Engaging with Ausgrid to accelerate the conversion of residential street, main and park lighting to LED lights.

Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
Mosman Council Works Depot Solar 55 kW	$80,000 $9,000 a year savings on electricity bill	77,234 kWh/year = 62 tonnes CO2-e	Funded	Emissions saved
Mosman Civic Centre Solar 99.5 kW	$90,000 $17,000 a year savings on electricity bill	135,497 kWh/year = 109 tonnes CO2-e	Funded	Emissions saved
Rawson Park Pavillion Solar 41kW	$45,000 $8,600 savings a year on electricity bill	53,942 kWh/year = 43 tonnes CO2-e	Funded	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	$16,500	26,201 kWh/year = 21 tonnes CO2-e	Funded	Emissions saved
Purchase renewable energy for Council large sites	To be confirmed	To be confirmed	Progressing	Emissions saved
Purchase renewable energy for Council small sites	To be confirmed	419,000 kWh/year = 339 tonnes CO2-e	To be confirmed	Emissions saved
If Council is unable to purchase 100% renewable energy, investigate offsetting	To be confirmed	To be confirmed	To be confirmed	Emissions saved
Vista Street car park LED lighting replacement	$50,000	32,000 kWh/year = 25 tonnes CO2-e	Funded	Emissions saved
Vista Street car park ventilation upgrade	$120,000	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	Funded	Emissions saved
Transition street lighting to LED	nil	545,000 kWh p.a. = 441 tonnes CO2-e	Funded	Emissions saved

Action	Estimated cost*	Emissions savings	Status	Indicator
Investigate gas usage at Mosman Art Gallery	nil	n/a	Not funded	Year Investigated
Keep abreast of new sustainable energy solutions	nil	n/a	Ongoing	n/a
Climate Clever app for homes and schools	$850	n/a	Funded	No. of subscriptions
Wattblock energy efficiency assessments for 10 strata blocks	$9,864	n/a	Funded	No. completed
Provide information on sources of emissions and how to reduce them (Your Energy Friend videos for website)	$2,475	n/a	Funded	No. completed
Provide information about benefits of solar PV and buying green power - providing technical and trustworthy information	nil	n/a	Funded	No. of residents
Provide information homeowners on energy efficiency: insulation, energy efficient appliances, heating/cooling, etc.	nil	n/a	Funded	No. of residents
Promote Zero Emissions Sydney North webinars	nil	n/a	Ongoing	No. of residents
Promote community mitigation initiatives via social media	nil	n/a	Ongoing	Facebook data
Energy efficient pool pump promotion	nil	n/a	Ongoing	No. of persons informed
Investigation and installation of battery storage for PV systems	$40,000 per PV system	To be confirmed	Funded	Emissions saved
Promote Council Mitigation Activities through various media platforms including brochure distribution	$1,000 per project	n/a	Funded	No. of residents
Work with community on climate action via Living Mosman newsletter and brochure development and distribution	nil	n/a	Ongoing	Campaign monitor data
Work with community on climate mitigation topics via Living Mosman webinars and events	nil	n/a	Ongoing	No. of attendees/ post-event survey data
Living Mosman program	nil	n/a	Ongoing	No. of persons subscribed
Liaise and generate discusson with local major land managers on mitigation projects – Department of Defence, Taronga Zoo, SHFT and NPWS	nil	n/a	Ongoing	projects initiated
Rawson Park Oval floodlights LED replacement	$49,000	11,500 kWh/year = 9.3 tonnes CO2-e	Funded	Emissions saved

Action	Estimated cost*	Emissions savings	Status	Indicator
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 = 58 tonnes CO2-e	Not funded Planning approval by Sydney Harbour Federation Trust required	Emissions saved
Allan Border Oval floodlights LED replacement	$85,000	23,000 kWh/year = 18 tonnes CO2-e	Not funded	Emissions saved
Middle Head Oval floodlights LED replacement	$100,000	To be confirmed	Not funded	Emissions saved
Balmoral Oval floodlights LED replacement	$100,000	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
Barry O'Keefe Library (Roof issues to be resolved) Solar 48 kW	$60,000	72,000 kWh/year = 58 tonnes CO2-e	Not funded	Emissions saved
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	Not funded	Number of buildings upgraded

* Excludes operational costs such as staff

Table 3 - Energy Use Future Actions

BIODIVERSITY AND TREES

One hectare of 30-year-old forest can absorb 200 tonnes of CO_2 per year

15 trees over 5 years old can absorb 1 tonne of CO_2 per year

The burning of 1 hectare of forest releases 25 tonnes of CO_2

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.

Current Actions

- Annual street and park tree planting program with at least 200 mature trees planted per year.
- Ongoing bushland restoration work across all bushland and unmade road bushland sites.
- Ensuring compliance for trees on private land through Council's Urban Forest Policy.
- Ensuring compliance with private development of Council's Biodiversity Corridor and Habitat Link map
- New street and park tree planting focusing on Heat Island areas around Spit and Military Roads.
- Bushland Restoration Contracts 2012-2022.
- 74% of bushland sites contain >90% native vegetation cover.
- Tree canopy cover currently 33.9% up from 32.5% in 2014.
- 7,000 native plants planted by Council on public lands per year.
- Ongoing support of Council's 48 active Bushcare volunteers.
- Active role in the Mosman, North Sydney and Willoughby Bush Fire Management Committee ensuring completion of hazard reduction burns where required.

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 per year
New street and park tree planting focusing on Heat Island areas around Spit and Military Roads	$30,000	n/a	Ongoing	No of plants in ground
Long term Bushland Restoration Contracts	$350,000/year	n/a	Ongoing	% of native vegetation cover >90%
Community events on climate action via Living Mosman newsletter and brochure development and distribution	nil	n/a	Ongoing	Campaign monitor data
Working with community on climate mitigation topics via Living Mosman webinars and events	nil	n/a	Ongoing	No. of attendees/ post-event survey data
Living Mosman program	nil	n/a	Ongoing	No. of persons subscribed
Ongoing support of Council's 48 registered Bushcare volunteers	$60,000/year	n/a	Ongoing	No. of active volunteers
Bush fire hazard reduction burns are completed where required	nil	n/a	Ongoing	No. of unplanned bushfire incidents
Renewal of Council's Flora and Fauna survey	$60,000	n/a	Funded	Complete
Protection of tree canopy on private land	nil	Ongoing - Compliance to Urban Forest Management Policy	Ongoing	No. of non-compliances
Protection of tree canopy on public land	nil	n/a	Ongoing	No. of non-compliances
Community awareness of benefits of trees and grass in their gardens	nil	n/a	Ongoing	No. of Living Mosman stories/ workshops

Action	Estimated cost*	Emissions savings	Status	Indicator
Medium priority - to be actioned within 4-5 years				
Street and park tree assets included in Council's Parks and Open Space Asset Management Plan	$20,000	n/a	Funded	Action completed
Low priority - to be actioned within 5-10 years				
Sea grass, limit future marina development, restore local mangroves	n/a	Area managed by NSW Transport	n/a	n/a
Intertidal ecology protection and expansion	n/a	Area managed by NSW Transport	n/a	n/a

* Excludes operational costs such as staff

Table 4 - Biodiversity and Trees Future Actions

WATER CYCLE

Over 2016-2019 Council's potable water use decreased by more than 10%

>75% of stormwater outlets have pollution collection devices

Council's current water use is 2.35 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.

Current Actions

- Greater than 75% of stormwater outlets have some type of litter collection filtration device.
- Installation of water refill stations across Council parks and sport fields.
- Continued use of stormwater re-use tanks under Mosman Drill Hall netball courts and Botanic Park to irrigate adjacent sport fields.
- SQID improvement works including maintenance/ cleaning schedule.
- Promoting the Sydney Water Waterfix program to residents.
- Installation of new automated irrigation systems and moisture sensors at Allan Border, Middle Head and George's Heights Ovals.
- Quarterly monitoring of Council's water use.
- Education and promotion of Sydney Water Level 1 water restrictions and other water saving actions and advice.
- Protection and enhancement of Council's natural water courses and adjacent sites.
- Continued use and monitoring of water quality of underground stormwater re-use tanks.

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 Waterfix program	nil	n/a	Ongoing	Reduction in community water use
Provide workshops for community on water efficiency via Living Mosman webinars and events	nil	n/a	Ongoing	No. of attendees/ post-event survey data
Smart irrigation Spit West Reserve	$90,000	n/a	Funded	Reduction in water consumption by Council
Smart irrigation Rawson Park Oval	$180,000	n/a	Funded	Reduction in water consumption by Council
Smart Irrigation Balmoral Oval	$180,000	n/a	Funded	Reduction in water consumption by Council
Smart Irrigation Rosherville Reserve	$90,000	n/a	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 of 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	Not funded	Reduction in water consumption by Council

* Excludes operational costs such as staff

Table 5 - Water Cycle Future Actions

WASTE

1.2 tonnes of CO2 is emitted into the atmosphere per tonne of landfilled mixed solid waste

Council currently recycles 38.5% of domestic waste

Approximately 40% of landfill waste weight is water

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, such as enhancing organic waste collection and processing.
- Lobby NSW and Australian Governments for better waste processing facilities and regulations. Position Council to take advantage of new technologies in waste management.
- Position Council to take advantage of new technologies in waste management.
- Circular Economy – aims to reuse and recycle all component parts of a product so the parts can re-enter the market rather than ending in landfill.

Current Actions

- Community education on waste matters
- Mattress recycling
- E-waste recycling
- Financial support and access for residents to NSROC Community Recycling Centre at Artarmon.
- Shareholder at Kimbriki Environmental Enterprises
- Compost Revolution member
- Bin stickers and monitoring of recycling bins for MUDs and SUD's
- Circular economy for Council's open space and footpath works e.g. mulch from tree removals is used on Council parks and old footpath material is reprocessed and used as base for new footpaths.
- 38.5% of domestic waste is recycled
- >90% of Council's domestic recycling material is processed locally into other products.
- Use of circular economy for waste products e.g. using recycled glass in bitumen Raglan West carpark.
- Member of NSROC Waste Alliance.

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	nil	528 tonnes CO2-e	Ongoing	Emissions saved
40% recycling of domestic waste	nil	4,794 tonnes CO2-e	Ongoing	% of domestic waste recycled
35% reduction of domestic waste to landfill through source separation, organics recycling and other recycling promotion. New State Government 20 year waste strategy	To be confirmed	2,345 tonnes CO2-e	Ongoing	Reduction in % of waste to landfill
Waste Less Recycle More Program – Programs focused on reducing landfill	Grant ($75,000)	n/a	Ongoing	No. of programs delivered
Council subsidised compost bins	$80 per bin	n/a	Ongoing	No. of bins purchased
Promotion of worm farms	nil	n/a	Funded	No. of worm farms purchased
Support of community gardens	$3,000	n/a	Ongoing	No. of Community Gardens
Recycling programs	$40,000	To be confirmed	Ongoing	No. of events held
Use of recycled asphalt on road upgrade works	nil	n/a	Ongoing	Reduction of waste to landfill
Softplastics trial	nil	n/a	Proposed	No. of tonnes of soft plastic collected
Medium priority - to be actioned within 4-5 years				
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	nil	629 tonnes CO2-e	Ongoing	Emissions reduction

* Excludes operational costs such as staff

Table 6 - Waste Future Actions

TRANSPORT

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

A return plane trip to Europe will generate 4.5 tonnes of CO2 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 and hydrogen 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 and renewable fuel vehicles.
- Promote the reduction of emissions and sustainable community mobility through the Active Transport Strategy including provision of adequate cycle lanes, bike parking and end-of-ride facilities.

Current Actions

- Spit East pedestrian and bike project upgrade.
- Car share policy update and support of industry.
- Council car fleet predominantly made up of small vehicles.
- B-Line bus route upgrades.
- Bike plan 2014-19 where 90% of works were completed.
- 16 designated car share spaces installed.
- Investigation of Electric Vehicle (EV) stations with one fast charger installed at Civic Centre carpark.
- Development of new Active Transport Plan for pedestrian and bicycle improvements
- Continued promotion of public transport and subsidised public transport for staff.

Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
EV charger installation	$10,000	n/a	Completed	No. of EV chargers installed
Staff encouraged to use public transport subsidy (currently 19 staff)	$48,000	Currently 57 tonnes CO2-e	Funded	No. of staff claiming the subsidy
Develop EV charger rollout program	nil	n/a	Ongoing	Program developed
Support of car share	nil	n/a	Ongoing	No. of persons using car share
Reduce number of cars owned by residents	nil	n/a	Ongoing	Car ownership numbers
Development of new Mosman Active Transport Strategy	$15,000	n/a	Progressing	Completed
Encourage public transport use	nil	n/a	Ongoing	No. of persons using public transport
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	32 tonnes CO2-e	Funded	Emissions intensity of Council fleet
Investigation of e-bike use for Council staff	nil	n/a	Ongoing	Reduction in cars in Council fleet

* Excludes operational costs such as staff

Table 7 - Transport Future Actions

BUILT ENVIRONMENT

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

Mosman has 35.7 persons per hectare

492 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.

Current Actions

- Planning for hazard adaptation, including:
  - Review of bushfire prone land maps
  - Biodiversity corridor mapping
  - Acid sulphate soils
  - Coastal Management SEPP
- Infrastructure SEPP – permits solar panels as exempt development.
- Duty planner enquiries – facilitates easiest approval pathway for solar panels (heritage buildings), rainwater tanks.
- 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.
- Mosman LEP 2012 includes matters such as 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.
- Mosman DCPs include a range of controls on sustainability, such as passive solar design.
- 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.

Future Actions

Action	Estimated cost*	Emissions savings	Status	Indicator
High priority - to be actioned within 1-3 years				
Work collaboratively with other councils on urban heat island mitigation measures	nil	n/a	Ongoing	
Review LEP to promote sustainability	nil	n/a	Ongoing	LEP review
EV charging stations for apartments – planning	nil	n/a	n/a	No. of charging stations installed
Revision of DCP to strengthen sustainability measures	nil	n/a	Funding	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 Building codes	nil	n/a	n/a	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

Table 8 - Built Environment Future Actions

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.

Capital Projects with identified Funding	High Priority 1-3 years	Medium Priority 3-5 years	Low Priority 6-10 Years
Energy Use	$450,000	-	-
Biodiversity and Trees	$90,000	$220,000	-
Water Cycle	-	$220,000	-
Waste	-	-	-
Transport	$25,000	-	-
Built Environment	-	-	-
Total	**$565,000**	**$440,000**	**-**

Table 10 - Council capital projects with identified funding and timeframe

Operational Projects with identified Funding	Reoccurring funding
Energy Use	$60,000
Biodiversity and Trees	$540,000
Water Cycle	$20,000
Waste	$60,000
Transport	$50,000
Built Environment	-
Total	**$730,000**

Table 11 - Council operational projects currently funded

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