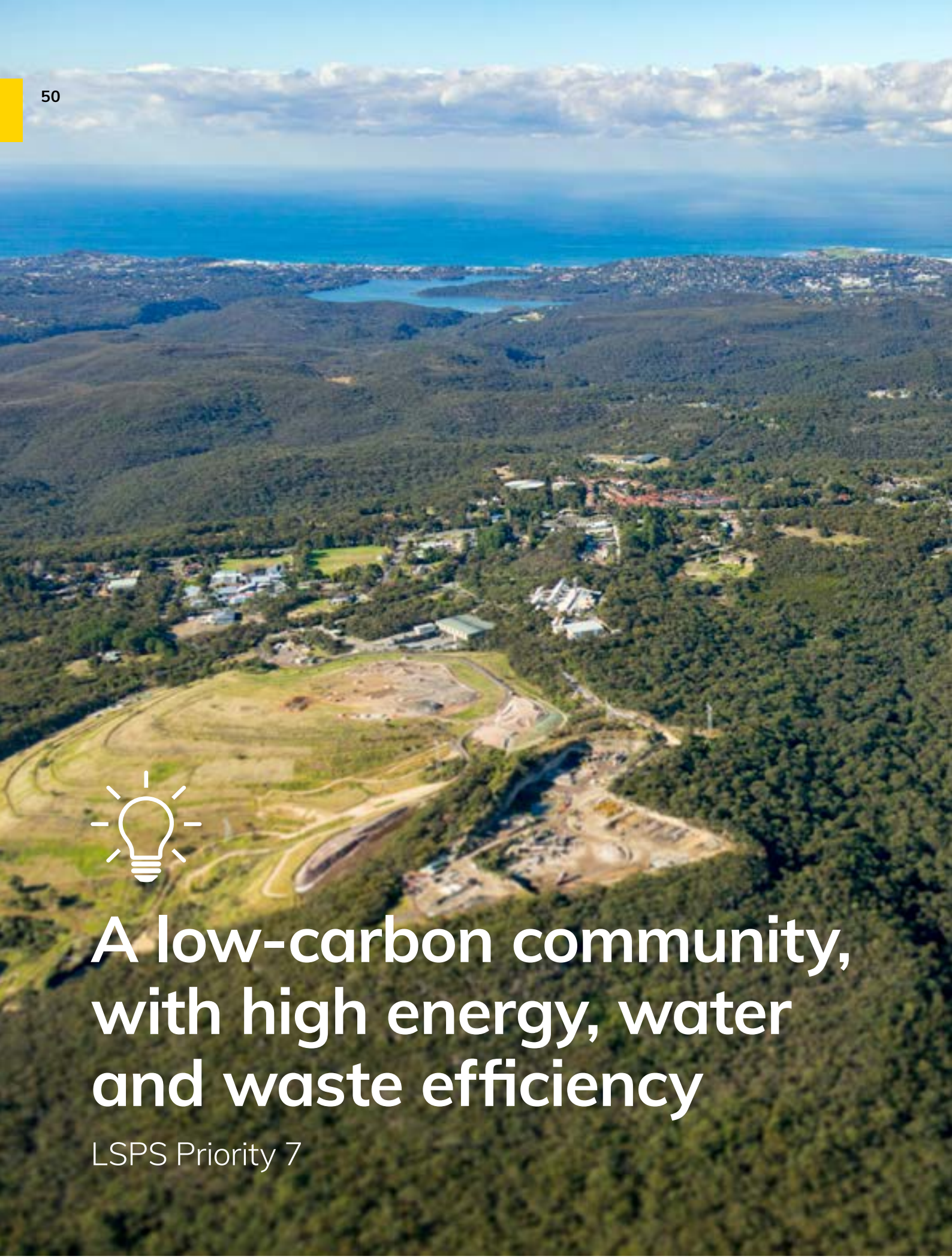


A low-carbon community, with high energy, water and waste efficiency

LSPS Priority 7

5.0 A low-carbon community, with high energy, water and waste efficiency

The vision for life on the Northern Beaches over the next twenty years inherently involves the movement towards a society with lower levels of consumption, emissions and waste generation. This vision also includes encouraging a circular economy, increased use of active and public transport opportunities, and enhanced sustainable built environment outcomes. The Towards 2040 principles for Priority 7 will guide future planning decisions. These principles include:

- Ensure new developments and retrofits demonstrate improved building standards and the achievement of a low-carbon development with high-efficiency in energy, water and waste.
- Reduce carbon emissions.
- Support precinct scale efficiency initiatives.
- Reduce the volume of waste to landfill and waste transport requirements.
- Maximise re-use and recycling to support a circular economy.
- Support smart technology and infrastructure.
- Increase the uptake of renewable energy.
- Increase alternative water supplies to decrease dependency on distributed potable water.

Living sustainably and efficiently in our environment is a core focus for Northern Beaches Council, business, community groups and households alike (NBC, 2020; NBC, 2017). Northern Beaches Council is committed to achieving net zero emissions across the community by 2050. Targets have also been set to maintain or reduce community water consumption by 2040.

In the 2016-17 baseline year, around two million tonnes of greenhouse gases were emitted by the Northern Beaches community from electricity, transport, waste and gas. Overall, over half these emissions were from electricity and about a third from transport. 63 per cent of emissions were from residential activities, and 37 per cent from non-residential activities.

Buildings are a major energy consumer and account for almost a quarter of Australia's carbon emissions (ASBEC, 2016). Land use planning plays a significant role in delivering a low carbon community in new developments and renewals. Building more efficient homes and workplaces are key to reducing carbon emissions and Council aspires for all new buildings being net zero emissions by 2030.

How the built environment functions and encourages sustainable community behaviours provides a key opportunity to support efficiency and sustainability goals.

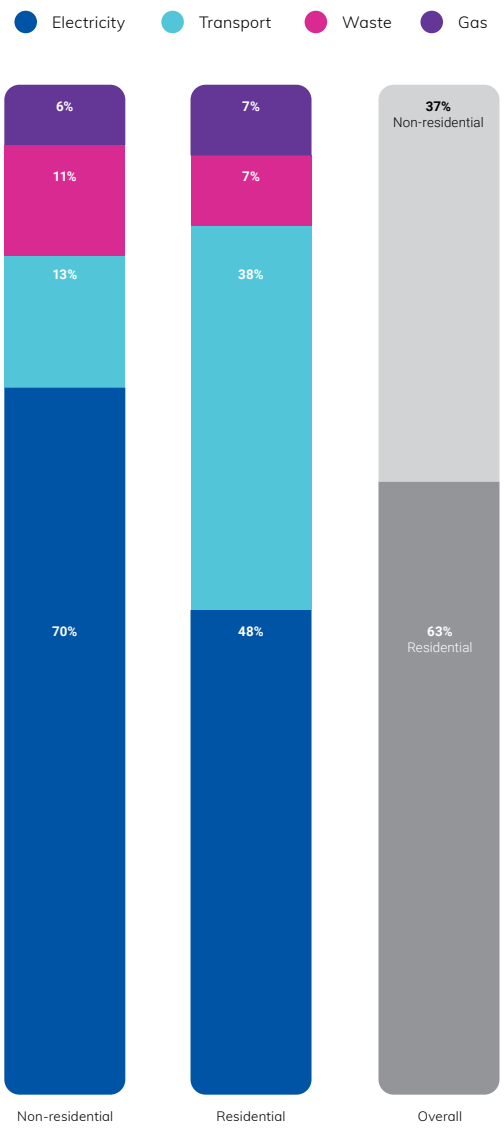
The contribution to emissions is higher from transport for the residential sector than non-residential. Of note, over 60 per cent of the region's journeys to work are in cars.

The community carbon emissions data clearly demonstrates that per capita emissions are lower in areas of higher density such as Manly, Dee Why and Narrabeen compared to suburbs of lower density. This is in part due to the emissions that result from increased use of private transport.

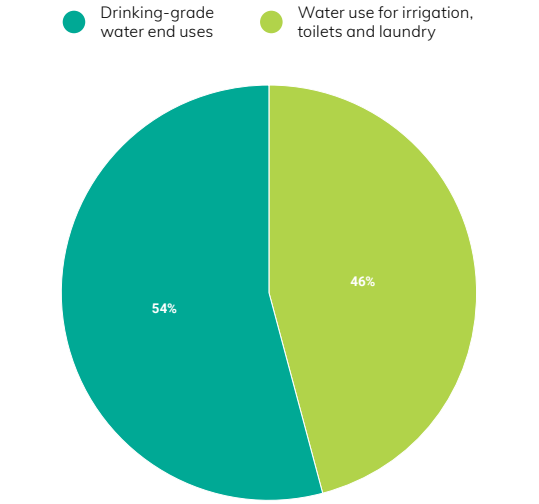
In 2016–17 the total potable water consumption for the LGA was more than 23ML. The residential sector is responsible for the majority of water consumption for the region. Further analysis determined that 46% of residential water use is for non-potable use including irrigation, toilets and laundry. This presents opportunities for reductions through water reuse measures such as rainwater tanks and recycled water system.

Council also has adopted commitments to divert 85% of waste from landfill and reducing the rate of waste generation per person by 2040. In 2016-17, the domestic waste service disposed of over 60,000 tonnes of waste to landfill corresponding to 227kg per person. This has reduced by over 30% in 19/20 due to improvements in the waste service.

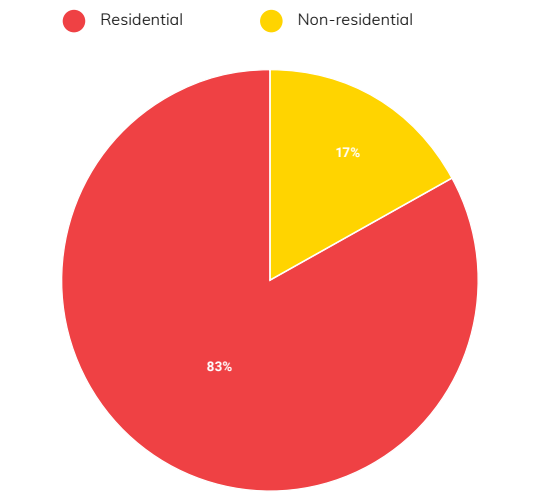
Carbon emissions



Potable water consumption in the Northern Beaches by the grade of end use



Potable water consumption by sector



Northern Beaches Council as a sustainability leader

- 2020 winner of the prestigious Keep Australia Beautiful 'Sustainable Cities Award'
- Silver partner of the NSW Government's Sustainability Advantage program.
- Lighting upgrades at buildings, car parks and sports fields, heating and cooling system upgrades.
- 900kw of solar power installations on Council buildings, including Cromer and Balgowlah depots.
- Low-energy LED residential streetlights that reduce carbon emissions by 3,000 tonnes a year.
- Smarter, greener, safer, cleaner waste collection service that reduces emissions.
- Cromer Park Water Harvesting Scheme, recapturing and treating water through a bio-retention system and UV filtration then using it for irrigation, capturing herbicides and fertilisers on site.
- Setting an ambitious target for half of all homes to be powered by solar by 2030.
- Made the switch to 100% renewable electricity from 1 January 2021.
- Installed 265kw of solar power on the Manly Andrew Boy Charlton Pool, one of the largest systems on the on Northern Beaches.

5.1 Challenges and Opportunities

5.1.1 Encouraging development efficiencies

As adopted in Northern Beaches community strategic plan 'We aspire to be leaders in managing resources sustainably and for the long term to ensure that development is balanced with our lifestyle and environment'. This includes ensuring that existing and future development improves efficiency in the areas of energy, water and waste. Designing a built environment with a zero-carbon emissions footprint is the challenge.

Local efforts that contribute to a net zero emissions region can be delivered through:

- a zero carbon focus;
- a water and waste-wise community;
- a sustainable built form;
- an efficient, compact settlement pattern; and
- a connected community with transport options.

In addition to local efforts, a state and national approach to achieving net zero emissions is also required that will involve both the government and non-government sectors. An example of this is the NSW Net Zero Plan Stage 1: 2020 – 2030 which is the foundation for NSW's action on climate change and goal to reach net zero emissions by 2050. It outlines the NSW Government's plan to grow the economy, create jobs and reduce emissions over the next decade.

Opportunities can be fostered through improvements to building standards and retrofitting requirements to increase building efficiency and reduce resource consumption. In this area, Council has been advocating for beyond BASIX, to increase building sustainability measures. Focusing on more compact settlements with diverse housing designs reduces reliance on private vehicles and supports active and public transport.

Facilitation of smarter infrastructure and technologies can support daily activities; support a transition to a circular economy that will maximise reuse, repair and recycling of products and materials. Capitalising on precinct-scale efficiencies aids sharing of consumption, harvesting and recycling across multiple buildings or land uses within defined areas of proximity.

The development of Frenchs Forest as a Green Star community is a key opportunity to consider the integration of each of these elements.

Redevelopment in existing strategic centres, whilst more challenging, is also a significant opportunity to transition our carbon emissions profile more holistically. This includes the consideration of sustainability and efficiency in every aspect from settlement pattern design to parking, landscaping, and building fit-out.

Within new developments and renewal of existing there are opportunities to encourage and support circular design to reduce carbon-intensive materials and increase recycling. This includes designing infrastructure, products and entire precincts so that they rely on fewer raw materials, are more durable and can be easily repaired and use more recycled content and recovered energy. We can design out waste by reducing resource consumption through using reclaimed/re-manufactured materials over new, selecting products based on the assessment of the embodied carbon content, sustainable manufacturing processes, ethical and sustainable supply chain, durability and end of life disposal. We can encourage and support the consideration of life-cycle of materials used in construction through consideration of different designs in buildings which enable efficient reuse and recycling and through digital record keeping of material in new buildings and infrastructure

How land use planning and built environment outcomes can contribute towards reduced car parking requirements, increased car share opportunities, more compact settlements and sustainable businesses and industries will remain at the forefront of planning and related processes on the Northern Beaches for the next twenty years, and beyond.

Environmental Planning Actions
LSPS Priority 7

A low-carbon community, with high energy, water and waste efficiency

The following environmental planning actions have been developed to deliver the LSPS planning priorities. These will also help to achieve the outcomes of the ECC Strategy.

LSPS Action	ECC Strategy	Environmental Planning Actions	Timeframe
Deliver Frenchs Forest strategic centre as a low-carbon, high-efficiency precinct and a Green Star Community. Identify opportunities for precinct-scale efficiencies, renewable energy projects, circular economy outcomes, compact settlements, smart technology and infrastructure and better building standards and retrofits in the environment study, employment study and local housing strategy. Develop LEP and DCP controls to improve energy, water and waste efficiencies in new developments in strategic centres, employment hubs and areas subject to urban intensification to provide an independent sustainability certificate such as the Green Star Rating Tool, Passive House or a recognised equivalent (threshold to be developed). Improve building standards for residential and non-residential buildings and relevant infrastructure, support the push for net zero carbon buildings, and monitor progress.	Seek out, support and encourage precinct scale solutions to reducing resource use. Support and encourage renovations, retrofits and refurbishments to lower energy and water use in our community, including driving conversion to renewable energy, especially solar panels. Help our community to understand the benefits of building sustainably. Improve local planning controls to ensure residential and non-residential buildings and infrastructure are sustainably built and designed. Encourage state and federal government to rapidly drive down emissions, water use and other pollution through actions such as better building standards for residential and non-residential buildings and relevant infrastructure: e.g. increasing BASIX and implementing standards for non-residential development.	7.1 Deliver precinct plans and place plans as net zero carbon and high efficiency through integrating sustainability initiatives. This could be achieved, for example, through ensuring the precinct incorporates high passive design performance, is electric and supports a diversity and integrated system of renewable energy supply, sustainable and resilient construction materials are designed into the precinct, lifecycle of materials is considered and waste is designed out to reduce resource consumption. Advocate to the NSW State Government to ensure the Design and Place SEPP delivers precincts with net zero operational emissions by 2030 and includes a pathway and targets to reducing embodied carbon emissions by 2050.	Ongoing
		7.2 Consistent with NSW Waste and Sustainable Materials Strategy 2041 ensure planning controls provide opportunities for complementary businesses to co-locate in the Strategic Centres (Frenchs Forest, Brookvale, Dee Why, Manly and Mona Vale) where they can beneficially re-use each other's by-products, reducing their waste and carbon footprints. Ensure sufficiently zoned land to enable the recycling, processing and disposal of waste generated within the LGA, and that existing waste facilities' land use is protected.	Ongoing
		7.3 Ensure active transport connections are provided, including wide footpaths, safe cycling options, bus stops, shelters, bike racks and signage to support active and public transport in strategic centres and planning precincts. Ensure planning controls are included for bicycle parking and end of trip facilities to encourage healthy active lifestyles and help reduce reliance on private motor vehicles.	Short Term
		7.4 Reduce greenhouse gas emissions by advocating to the NSW State Government to increase BASIX requirements for residential developments including adopting net zero targets for multi-residential developments as defined in 'Planning for net zero energy buildings' (City of Sydney et al, 2021). Adopt net zero targets in the new planning framework for office, hotel, mixed use and shopping centres in line with the 'Planning for net zero energy buildings' (City of Sydney et al, 2021). Encourage and promote leading sustainability ratings for development such as net zero buildings, Green Star Homes and Passive House.	Short Term
		7.5 Review, develop and implement planning controls in the new planning framework to ensure efficient operational waste management. For example, by requiring a waste management plan to show how the construction/demolition will minimise waste generation, maximise use of recycled content or reusable materials, and how the operation of the building will enable efficient and safe waste collection, stream separation, reduce consumption of energy, water and materials.	Short Term