

2017

STATE OF THE ENVIRONMENT REPORT



Randwick City Council

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Randwick Overview and Trends

State of the Environment 2017

This State of the Environment report aligns reporting issues with those identified specifically in the Looking after our environment theme of 20-year Randwick City Plan. The following is an overview of the results in this report.

Issue	Randwick City Plan Strategic Directions	Council response	Data reliability	Overall Trend*
Toward environmental sustainability	10a: Council's programs and partnerships foster sustainable behavioural changes and outcomes	●	●	●
Environmental risks and impacts	10b: Policies and programs are developed and implemented in response to environmental risks and their potential impacts	●	●	●
Land use planning, biodiversity and natural heritage	10c: Bushland, open spaces and biodiversity are protected and enhanced for future generations	●	●	●
Resource recovery	10d: Waste is managed sustainably to ensure highest level of resource recovery	●	●	●
Water cycle management	10e: A total water cycle management approach including water conservation, re-use and water quality improvements is adopted	●	●	●
Energy and greenhouse gas emissions	10f: Energy conservation and efficiency programs are implemented	●	●	●

***Overall trend is influenced by factors beyond Council's control.**

For each of the strategic environmental directions in the Randwick City Plan, this report provides an assessment in the form of traffic light symbols. Each direction is assessed on three areas:

- the overall trend for the environmental objective;
- the reliability of the data available to assess the objective; and
- how is Randwick responding in relation to each of the environmental directions.

The traffic light colours are defined as:

- Overall result is positive and/or trend is in positive direction
- Trend is difficult to determine / some further work or time required
- Trend is in negative direction / improvement required

There are no red lights represented in the State of the Environment 2017 report.

*Overall trend is influenced by factors beyond Council's control.

About Randwick's 2017 State of the Environment report

This State of the Environment (SoE) report is prepared in accordance with Section 428A of the Local Government Act 1993 and prepared in conjunction with the Office of Local Government's Integrated Planning and Reporting Guidelines.

Council is required to prepare a SoE report at the end of each term of the Council. The term of this SoE report covers the five-year period from 2012 to 2017.

The purpose of this SoE report is to address environmental issues aligned with the strategic environmental directions identified in the 20-year Randwick City Plan. For each issue this report shall:

- identify why the issue is important;
- report on and update trends for each environmental indicator; and
- provide detail how Council is responding.

The Randwick City Plan identifies six strategic environmental directions adopted by Council within Outcome 10: A healthy environment. These are listed in the table below alongside the environmental indicators used in this report to assist in evaluating the state of the Randwick environment.

Issue	Randwick City Plan Strategic Directions	Environmental indicator
Toward environmental sustainability	10a: Council's programs and partnerships foster sustainable behavioural changes and outcomes	Population growth Ecological footprint Community survey
Environmental risks and impacts	10b: Policies and programs are developed and implemented in response to environmental risks and their potential impacts	Environmental risk framework
Land use planning, biodiversity and natural heritage	10c: Bushland, open spaces and biodiversity are protected and enhanced for future generations	Land use Bush regeneration
Resource recovery	10d: Waste is managed sustainably to ensure highest level of resource recovery	Household waste generation and diversion from landfill for Randwick
Water cycle management	10e: A total water cycle management approach including water conservation, re-use and water quality improvements is adopted	Water use Beach water quality
Energy and greenhouse gas emissions	10f: Energy conservation and efficiency programs are implemented	Energy use Greenhouse gas emissions Renewable energy generation

For each issue an assessment is reported in the form of traffic lights, indicating:

- the overall trend for the environmental issue reported;
- the reliability of the data used to assess the issue; and
- how Randwick is responding in relation to each of the strategic directions.

An overall summary of the 2017 Randwick SoE has been provided at the front of this report which indicates there are currently no red lights across the report. In part this reflects the impact from actions and positive solutions taken by Council and the Randwick community.

1. Toward environmental sustainability

10a: Council's programs and partnerships foster sustainable behavioural changes and outcomes

1.1 Environmental Sustainability ●

The more people living on planet earth, the greater the environmental impact these individuals will have through their use of natural resources. They will impact on the environment through the water they consume; the energy they use to power their homes, businesses and industry; the fossil fuels used for motor vehicles, trucks and planes; the area of land taken up for houses, farms, roads and industry; and the amount of waste and rubbish created and disposed of in landfills or discharged into our atmosphere, rivers and oceans.

The concept of being environmentally sustainable means there will still be similar or matching resources as currently available for future generations.

As a country, Australia would appear to be abundant in the amount of resources we have to clothe, feed and house our relatively small population of 23.4 million people. This abundance shows in the high standard of living and quality of life enjoyed generally by Australians. But when measured in terms of our level of resource consumption, there are signs that as a nation and on a per person basis, we are consuming well in excess of what is considered sustainable into the future.

One way of checking whether this level of consumption is sustainable over time is by calculating the 'ecological footprint' of our cities. Ecological footprint analysis is one type of methodology used as a way of gauging whether our consumption is in balance with the way in which our natural processes, such as our water, forests, fish and atmosphere replenish themselves over time. Ecological footprint analysis provides a strong indicator as to whether our 'take' on the environment is larger than the resources available, measured as the amount of land it takes to provide the level of resources consumed on a per person basis.

1.2 What does the data show? ●

Population growth

The most recent census shows over the five years between 2011 and 2016, Randwick's population increase of 9.0 per cent was slightly higher than the increases for NSW (8.1 per cent) but similar to that for the Greater Sydney Region (8.9 per cent).

Location	2011 Population	2016 Population	Change in population
Randwick	128,989	140,660	9.0%
Greater Sydney	4,429,034	4,823,991	8.9%
NSW	6,917,658	7,480,228	8.1%
Australia	21,507,719	23,401,892	8.8%

Source: ABS Census 2016 - place of usual residence

Under the dwelling and population projections established by the NSW Government¹, approximately 14,600 additional dwellings are expected to be constructed in Randwick by 2036.

The most recent calculation of our own ecological footprint shows that Randwick residents, as with most Australians, consume the equivalent of three to four 'earths' of natural resources each year. This indicates that to support the current requirements of our modern day lifestyle, a significant level of overconsumption will continue to occur.

While this overconsumption of resources is high, the ecological footprint for Randwick appears to be stabilising at 5.22 hectares per person. This compares to the consumption trend for Australia of 9.32 hectares per person².

In part, higher density living and our close proximity to the Sydney Central Business District (CBD) with good public transport links, may contribute to Randwick's lower ecological footprint relative to that for Australia as a whole.

¹Source: NSW Department of Planning and Environment, New South Wales State and Local Government Area Household Projections and Implied Dwelling Requirements 2016-2036.

²Source: Net Balance report for Randwick City Council, 2014.

Community views

To assist in understanding our community views and actions on local environmental issues, Council has carried out regular surveys of its residents every three years over the past 12 years. The survey, “Who Cares About the Environment” and its results have contributed to the development of Council’s environmental and sustainability initiatives, projects and programs.

The most recent survey results confirm that the environment continues to be an important issue for residents, with the most important environmental issues being pollution of our beaches and oceans, over-population and development and traffic congestion³.

The Who Cares About the Environment survey indicates that the predominant environmental actions being taken by Randwick residents include:

- 95 per cent are re-using items for environmental reasons (vs 91 per cent from 2014 survey);
- 93 per cent are reducing the amount of food thrown out by their household (vs 89 per cent from 2014 survey);
- 92 per cent are reducing their energy consumption (not just for environmental reasons) (vs 82 per cent from 2014 survey);
- 88 per cent are reducing water consumption for environmental reasons (vs 90 per cent from 2014 survey);
- 82 per cent are avoiding the use of plastic bags (vs 80 per cent from 2014 survey);
- 80 per cent are avoiding products with lots of packaging (vs 68 per cent from 2014 survey);
- 41 per cent are composting or using a worm farm (vs 42 per cent from 2014 survey); and
- 48 per cent are growing their own food (vs 58 per cent from 2014 survey).

³ Source: Who Cares About the Environment in Randwick City, 2017.

1.3 How is Randwick City Council responding? ●

Council’s role in supporting environmental sustainability has been primarily through a range of projects and programs delivered under the umbrella of Randwick’s Sustaining our City Program. The Sustaining our City program is funded through a levy originally introduced in July 2004 for five years, calculated at six per cent of the Council’s overall rates income. Since then the levy has been extended twice at the same rate, for consecutive five year periods, in July 2009 and June 2014.

Within this rolling Sustaining our City Program, five key activity areas have been developed by Council. These include:

- Coastal protection
- Conserving resources
- Tackling greenhouse
- Protecting Biodiversity
- Community engagement.

Council’s sustainability programs and activities are focused on helping the wider community take their own actions, often as small, incremental steps over time that nevertheless contribute to measurable and positive outcomes for the environment. In addition these actions may save money and/or contribute to increased social wellbeing.

Randwick Council continues to work proactively with local residents, businesses, schools and staff to assist the community to increase their understanding and involvement in taking steps to live a more sustainable lifestyle.

Some of the key programs and activities delivered by Council over the past five years include:

- ongoing upgrades to the Coastal Walkway and other trails;
- construction of major stormwater storage, treatment and re-use infrastructure, which now saves around 300 million litres of drinking water per annum across Council sites and operations;
- installation of energy saving measures increasing renewable energy generation by 200 kilowatts (kW) of renewable energy at more than 12 Council and community sites;
- development of Council’s sustainability education ‘hub’ at Randwick Community Centre with its vast array of sustainability features and ongoing

delivery of the Barrett House Sustainability Demonstration project with neighbouring Waverley and Woollahra Councils;

- providing ongoing support for local schools to install rainwater tanks, bicycle racks, school food gardens and native habitat areas within school grounds;
- conducting sustainable living, leadership, permaculture gardening, composting, energy and water saving courses, free to residents, teachers and students;
- delivering the Marine and Coastal Discovery Program three times each year;
- conducting the annual Eco-living Fair, one of the largest and longest-running environmental festivals in the Sydney metropolitan region;
- promoting Earth Hour Festivals and Market Days involving local cafes, restaurants, business owners and not-for-profit organisations;
- hosting an Interfaith Festival which brings together different faith, cultural and language groups to celebrate all things environmental;
- delivering annual sustainable schools learning exchange with Randwick's sister city Temora, in the Riverina region of NSW; and
- supporting regular events such as Clean Up Australia, National Garage Sale Trail, Sustainable House Day, World Environment Day, Bike Week and National Recycling Week.

In addition, Council has developed successful environmental partnerships with a range of businesses, not-for-profit, community and other organisations. These include a sustainability Agreement with the University of NSW (UNSW) and the 3 Council Regional Environment Program with Waverley and Woollahra Councils.

Key programs undertaken within the 3 Council partnership include:

- Low Carbon Future Plan;
- Electric vehicle charging stations;
- Solar My School;
- Reduce Your Footprint website;
- Barrett House Sustainability Demonstration project;
- Compost Revolution; and
- Business Water Audits Program.

Additional resources

Over the past five years, Council has been able to utilise its environmental levy to attract in excess of \$5 million in externally funded grants from Commonwealth and State Government programs. These grants have enabled additional resources to be spent on sustainability projects across Randwick City.

Community volunteers also support Council's sustainability initiatives such as Permabee and the Eco Heroes Club. Around 850 volunteers have participated in these programs over the past five years.

The success of the Compost Revolution program across Randwick and its neighbouring Councils has resulted in Compost Revolution now being adopted by around 30 other local Councils in both NSW and Victoria.

2. Environmental risks and impacts

10b: Policies and programs are developed and implemented in response to environmental risks and their potential impacts

2.1 Environmental risks and impacts ●

Making decisions without considering the environmental risks can result in serious consequences over the long term.

Examples of past activities that are still having an environmental impact today include the discharge of industrial emissions into the atmosphere or water, or waste disposal practices. Poor management practices and a lack of consideration around the risks associated with these discharges or dumping of waste material are still being dealt with decades later in the form of contaminated soil or land.

Managing environmental risk requires the adoption of the 'precautionary' principle. Prior to making a decision that may damage the environment in the future you need to undertake adequate research, analyse all relevant and available information and data and apply it to the decision making process.

2.2 What does the data show? ●

Many of the environmental risks that councils are called upon to strategically manage to minimise the potential impacts over the long term, have legislative or regulatory frameworks. Frequently there is insufficient information or scientific data at the local level to enable appropriate assessment of the environmental risks that Council and its community considers important.

There remains some gaps in information or scientific data at the local level on a number of the environmental risks Randwick Council is responding to. These gaps often make it necessary for Council to establish its own reliable and credible data, sometimes in conjunction with State or Commonwealth Governments or their agencies (e.g. floodplain management) and sometimes on its own (e.g. land contamination). In some instances there are also state or commonwealth legal or regulatory frameworks that Council is required to comply with.

The basis for long term strategic management and decision-making around the wide spectrum of environmental risks administered by local government often requires updating and improving the level of on-ground data over time. With improving technology, Council has enhanced the way ongoing monitoring information is presented or incorporated into data layers within our GIS mapping systems. A good example is the in-depth data and understanding Council has on management risks related to flooding (see Council website for further information).

Table 1 below shows key risk areas for Council, their respective governing frameworks and the key strategic approaches adopted by Council to manage the risk and potential impacts.

Council takes its environmental management responsibilities very seriously. A significant part of Council's strategic approach focuses on factoring risk management into all of the decisions made across the full range of Council activities.

Table 1: Environmental risk areas managed by Council

Issue	Legislative, regulatory or other governing frameworks	Relevant action / response of Randwick City Council
Land use planning	Environmental Planning and Assessment Act (1979)	Implementation of our Local Environment Plan
Contaminated sites	NSW Contaminated Land Management Act 1997 - State Environmental Planning Policy No. 55 - Remediation of Land and related Guidelines	Investigation and implementation plan for 14 former landfill sites in Randwick
Threatened species and biodiversity conservation	NSW Biodiversity Conservation Act 2016 Commonwealth Environment Protection and Biodiversity Conservation Act (1999)	Specific recovery plans for Eastern Suburbs Banksia Scrub, <i>Acacia terminalis</i> ssp <i>terminalis</i> (Sunshine Wattle), Grey Headed Flying Fox and Green and Golden Bell Frog
Floodplain management	NSW Government Floodplain Guidelines	Floodplain studies completed or underway A Flooding Development Control Policy adopted in 2012 to inform inclusion of flood controls in the Local Environment Plan
Climate Change Adaptation and Mitigation	Clean Energy Future Legislation National Climate Change Adaptation Program Helping NSW Local Government Adapt - A Guide to Climate Change Risk Assessment for NSW Local Governments	Climate Change Risk Mitigation and Adaptation Road Map
Environmental Sustainability	Local Government Act, 1993 Principles of Ecologically Sustainable Development National Strategy for Ecologically Sustainable Development (1992)	Environmental Levy funding Council's Sustaining our City program and initiatives

2.3 How is Randwick City Council responding? ●

Land use Planning

Refer Section 3 in this report.

Contaminated sites

Many of Randwick's current parks and reserves were historically used by the authorities of the day as sites for the disposal of various types of building rubble and other waste material. Although a common practice at the time, these actions have left a potential problem which requires certain processes and procedures to be followed by Local and State Governments.

Under the NSW Government's Contaminated Land Management Act (1997), lands that contain contaminants are required to be remediated so that they are safe for the site's current or approved use.

Council has undertaken proactive investigations into such sites, such as former landfills, with the initial aim to ensure that the types of material disposed pose no threat to park users or to the wider environment.

An implementation plan and timetable for remediation has been prepared across sites identified for remediation and cleanup.

Since the last comprehensive SoE report in 2012, areas in Heffron Park and Chifley Reserve have been remediated with processes in place to monitor these sites.

Council is also working with the land owners to address other contaminated site issues and continues to chair an interagency group with the Commonwealth Government as it progressively remediates the 180 hectare Malabar Headland site.

Threatened species and biodiversity conservation

More than 500 native plant species and 300 animal species have been recorded within the open spaces and bushland areas of Randwick City. This represents 25 per cent of all species indigenous to the Sydney Basin, which remains one of the main centres of plant diversity in Australia. Protecting the habitat for these species is a significant responsibility for Randwick and its community.

Under the NSW Government's Biodiversity Conservation Act 2016 and the Commonwealth's

Environmental Protection and Biodiversity Conservation Act (1999), Council's responsibilities include the management of certain species as listed by an independent NSW Scientific Committee.

These species include the endangered ecological community made up of Eastern Suburbs Banksia Scrub (ESBS), the Sunshine Wattle (*Acacia terminalis* ssp. *terminalis*), the Grey Headed Flying Fox and the Green and Golden Bell Frog. Randwick City has the largest remaining area of ESBS and administers and implements the NSW Government's Recovery Plans for these important species of flora and fauna.

Council is also required to implement Threat Abatement Plans under this legislative framework to minimise the damage caused by pest plants and animals including the very aggressive noxious weed, Bitou Bush.

Council is progressively studying all catchments within the City applying the NSW Government framework. This framework generally follows a four stage approach which is:

1. collect and assemble the necessary scientific and community data;
2. identify the extent and nature of potential flooding through a Flood Study;
3. develop a Floodplain Risk Study and Management Plan which sets out the options for controlling or responding to potential flooding; and then
4. implement various options best applicable within each catchment.

The adoption of Council's Flooding Advice and Flood Related Development Control Policy in 2012 ensures residents and other applicants can receive information on the completed studies and relevant flood controls applicable in each of the study areas.

Floodplain management

Table 2: Current status of Flood Studies and Floodplain Risk Studies for Randwick sub-catchments

Catchment	Flood Study	Floodplain Risk Study and Management Plan	Implementation
Green Square- West Kensington (in conjunction with City of Sydney)	Completed	Adopted Feb 2012	Underway
Kensington – Centennial Park	Completed	Adopted Jun 2013	Underway
Coogee Bay	Completed	Adopted Dec 2016	Underway
Maroubra Bay	Completed	Adopted Feb 2017	Underway
Birds Gully and Bunnerong Road	Underway	na	na

Climate Change Adaptation and Mitigation

Council has previously prepared a Climate Change Risk Mitigation and Adaptation Management Plan (2009). This initial assessment indicated the risks of future impacts of Climate Change in Randwick are more likely to result in increased storm damage to infrastructure or property, or flooding following extreme storm events, and less likely from coastal impacts such as sea level rise. Other outcomes predicted include decreased water availability and heat stress across the community.

A number of Council programs are providing key strategic responses to climate change. These include:

- Randwick's strategic planning framework through the Local Environment Plan (LEP)

- Flood studies and flood management plans
- Renewable Energy Master Plan
- Energy and Greenhouse Management and Action Plan
- Biodiversity Strategy
- Water Savings Plan (under review).

Much of Council's community engagement and education around sustainability and environmental protection is aimed at increasing our community's awareness, action and resilience to Climate Change.

Environmental Sustainability

Refer Section 1 of this of this report.

3. Land Use Planning, Biodiversity and Natural Heritage

10c: Bushland, open spaces and biodiversity are protected and enhanced for future generations

3.1 Land Use Planning, Biodiversity and Natural Heritage ●

Council recognises that careful management of our assets, the natural environment, our public domain and built environment is necessary to enhance our community's quality of life. People choose to live in and visit our City for a number of reasons with much of their choice influenced by the range of physical and environmental attributes including the diversity and social mix of our City, coastal location, proximity to the Sydney CBD, the range of housing opportunities, access to world class health care and educational facilities, high quality of parks, beaches and open spaces, and the variety of local shops, cafes and restaurants.

Land use planning undertaken by Council aims to set the direction for housing growth, sustainable transport, recreation needs and opportunities, commercial and industrial activities, protecting our heritage, and our biodiversity. Our parks and open spaces - including our remnant bushland - play a vital role in Randwick's liveability, and creating and supporting the biodiversity and natural ecosystem. The challenge is to achieve a balanced and sustainable level of development across the mix of land uses.

3.2 What does the data show? ●

Randwick City represents a fairly unique urban and coastal environment. Our population lives within 37.42 square kilometres, much of which is bound by around 29 kilometres of coastline along the Pacific Ocean and historic Botany Bay. Within these boundaries there are ten popular swimming beaches and 246 hectares of remnant bushland equivalent to around 6.5 per cent of the City.

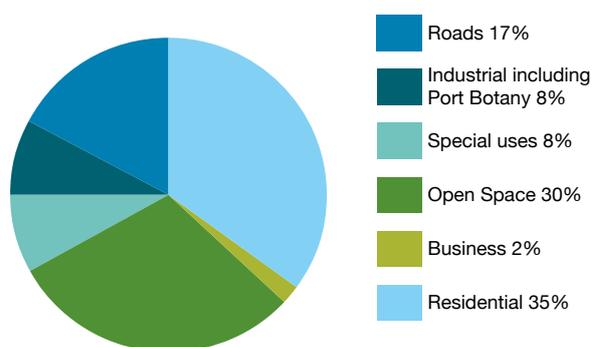
There has been little change in the land uses across Randwick over the past few decades and since the last comprehensive SoE report in 2012. In general:

- 35 per cent (1,309 hectares) of the City is residential land
- 30.5 per cent (1,141 hectares) is 'open space', parkland and sporting fields

- 17.2 per cent (645 hectares) is roads
- 7.9 per cent (294 hectares) is 'special use' which incorporates the UNSW, the Randwick Hospitals Complex, Long Bay Jail, defence land, and cemetery
- 7.8 per cent (293 hectares) industrial (including certain areas of Port Botany)
- 1.6 per cent (61 hectares) is represented as business.

The following figure shows land use in Randwick City.

Figure 1: Proportion of different land use types across Randwick Local Government Area*



3.3 How is Randwick City Council responding? ●

The LEP 2012 prescribes land uses within Randwick City. The LEP contains requirements to maintain and protect the various open space areas used for recreational purposes and containing native vegetation or providing important habitat for native fauna.

The LEP 2012 continues to strengthen previous land zonings across the City, ensuring they align with existing and desired uses and activities. The LEP 2012 identifies 30 hectares under 5 separate zonings relevant to environmental protection including: National Parks and Nature Reserves; Public and Private Recreational Open Space; Environmental Conservation; and Primary Production (market garden areas in the south of the City).

K2K Planning Strategy for Kingsford and Kensington Town Centres

Council has prepared a draft Planning Strategy for the Kensington and Kingsford Town Centres to ensure proposed higher density developments are along the town centres with good public transport links. The light rail is a catalyst for urban renewal through a more efficient public transport system. For more information on light rail refer to section 6 of this report.

Both town centres are facing considerable re-development impact so Council's effort in this strategy is to ensure the future commercial centres enhance our public places and spaces. The resulting draft K2K Planning Strategy sets out the vision, strategies and implementation actions to guide the sustainable growth and physical development of the Kensington and Kingsford commercial centres.

Randwick Junction Strategy

Council is currently preparing a strategy for Randwick town centre to enable the area to integrate with the light rail terminus.

Biodiversity

Council's Biodiversity Strategy was approved by Council in 2015 and identifies six priority activity areas or goals. These include:

- monitoring and maintaining baseline information on biodiversity in Randwick
- providing accurate biodiversity advice and reporting to stakeholders
- protecting biodiversity in accordance with statutory and strategic responsibilities
- protecting, restoring, maintaining and enhancing biodiversity through approved on-ground works
- protecting genetic biodiversity via propagation of local provenance plants at Council's Community Nursery
- engaging and informing our community on biodiversity issues.

Many of the biodiversity challenges facing Randwick in its urban setting overlap with other environmental management issues such as the dumping of litter; encroaching on sensitive or fragile vegetation by dogs and cats; stormwater run-off containing paints, fertilisers, or detergents; and the loss of vegetation 'buffers' through development or ongoing vegetation removal.

Under LEP 2012, there are 30 hectares of Environmental Conservation zoning including bushland remnants along the southern corridor adjacent to Bunnerong Road, and an area around Little Bay where small fragments of the threatened Eastern Suburbs Banksia Scrub remain.

Around 3.6 hectares of Eastern Suburbs Banksia Scrub is found in the Randwick Environmental Park. In 2015, Council prepared a Plan of Management (PoM) for this significant public area which is also home to the endangered Sunshine Wattle.

More residents are becoming aware of the conservation values of the Randwick Environment Park. This bushland and wetland area provides valuable habitat for native birds, lizards, frogs and mammals with more than 90 species of indigenous plants identified to date in the Park.

Revegetation initiatives

Council works closely with volunteers to protect and maintain more than 20 important areas of native vegetation.

The Native Havens program of providing advice and assistance to schools and residents living in close proximity to our areas of significant vegetation has recently been reinvigorated.

Native Haven projects are aimed at strengthening local and indigenous plants' resistance and capacity to reinforce Randwick's remaining green corridors. Where possible these efforts foster links between these areas and native garden areas in backyards and schools, to strengthen existing green corridors and vegetation fragments that contribute to the habitat for native plants and animals. Since its re-commencement, six local schools have participated in the Native Havens Program.

Even while providing this type of restoration and protection, single events like fires, flooding, illegal vegetation removal or tree poisoning places further stress and pressure on plant and animal species whose preservation Council staff are working to ensure for future generations. Much of the work of restoring these natural areas involves the time-consuming and labour intensive task of removing weeds and pest animals to allow the natural regeneration of indigenous plant species. Table 3 provides detail on hours spent on these activities.

Table 3: Number of hours of bush regeneration, weed control and revegetation work in Randwick

	2012/13	2013/14	2014/15	2015/16	2016/17
Contractor hours contributed	13,596	13,904	13,994	14,355	14,466
Community volunteer hours contributed	1,390	1,211	1,576	1,606	1,826

On average, community volunteers across Randwick City contribute approximately 1,500 hours of support each year to remove weeds, and to plant out native and indigenous species into our most sensitive and fragile areas of vegetation. Over the years these efforts are also supplemented by school students and corporate volunteers who provide additional weeding and planting groups at various sites across Randwick.

Revegetation with indigenous species occurs in areas that are highly disturbed and where there is no potential for natural regeneration. In many cases these efforts represent both mandatory and responsible practices of Council.

Randwick's bushland conservation efforts are further supported by Council's highly specialised indigenous Community Nursery. The Nursery's major focus is the propagation and distribution of native and indigenous plants, with approximately 80,000 smaller tubestock propagated and sold each year. As well as providing one of the most important plant propagation operations of locally collected seed and cuttings in the Sydney Metropolitan Area, between 15,000 and 20,000 other species of plants are sold from the Community Nursery, supporting the revegetation and landscaping efforts of contractors, householders, schools and many others. Approximately 5,500 native plants are given out to residents at community events including National Tree Day, Eco-living Fair and Mayoral donations to schools and community groups.

Council has an extensive park and street planting program, planting out around 2,500 established street trees and around 51,000 trees and shrubs in Council parks and reserves over the period of this report. Our environmental levy supports funding of our street tree planting program.

Marine and coastal conservation

With 29 kilometres of coastline and marine waters, it is important to understand Council's conservation efforts extend into the protection of marine and coastal biodiversity. Council supports the efforts of state government agencies to protect plant and animal species along the rock platforms and beaches, some of which are protected in aquatic reserves.

One aquatic reserve extends from Bronte Beach to Dolphins Point at the northern end of Coogee Beach.

This four kilometre stretch of coastline takes in Clovelly and Gordons Bay, including an underwater snorkel trail, and aims to protect marine species within approximately 43 hectares of coastal and marine waters. Protection takes in marine invertebrates, with additional protection of the blue groper (*Achoerodus viridis*) found within the waters of these two bays. Further information is available from the NSW Department of Primary Industries.

More than 40 different pollutant traps have also been progressively installed across the Randwick drainage network, particularly at low-lying coastal locations, to reduce litter and material impacting local beaches and adjacent coastal waters (Refer Section 4 for further information).

To increase community understanding around marine and coastal protection, Council conducts a school holiday Marine and Coastal Activities Program. This program reaches more than 1,000 residents and beachgoers each year. Various marine experts guide participants in a range of activities in, on and under the water and along our coastal foreshores.

This program of activities has become so popular that it is held three times a year, in autumn, spring and summer, enabling a wider range of children, their families and other beachgoers to discover firsthand the wonders of our coastal reserves and marine waters.

4. Resource recovery

10d: Waste is managed sustainably to ensure highest level of resource recovery

4.1 Resource Recovery ●

There is an increasing understanding and concern around the level of waste being generated across the wider Australian community.

The NSW Government's Waste and Resource Recovery Strategy aims to increase resource recovery and divert waste material from landfill. This NSW Government strategy has funding available to assist local councils' work toward meeting the NSW Government's 2021 waste avoidance and recycling targets. These targets are:

- 70 per cent diversion of municipal solid waste from landfill

- 70 per cent diversion of commercial and industrial waste from landfill
- 80 per cent diversion of construction and demolition waste from landfill
- 40 per cent less litter (from a 2012 baseline year)
- 30 per cent reduction in illegal dumping (from a 2011 baseline year) and
- establishing 86 drop-off facilities across NSW to accept designated 'problem wastes'.

4.3 What does the data show? ●

Council is currently diverting around 58 per cent of its waste from landfill (up from 42 per cent in our 2012 comprehensive SoE report). Since then the NSW Government has set a new target of 70 per cent waste diversion by 2021.

Table 4: Annual tonnages of household and organic waste material and recycling across Randwick

Household waste material (tonnes)	2012/13	2013/14	2014/15	2015/16	2016/17
Household waste	27,266	26,852	28,158	28,662	27,323
Dry recyclables	12,159	11,877	12,713	11,882	11,183
Organic 'green' waste	6,863	6,132	6,735	7,207	6,939
Bulky waste /clean-ups	4,050	3,907	4,696	4,596	4,439
Total	49,500	50,338	48,768	52,302	52,347
Waste diverted from landfill	50%	55%	60%	58%	58%

4.2 How is Randwick City Council responding? ●

Council provides each household with three separate bins for the collection of rubbish, recycled and garden organics as well as four bulky waste collection services each year to take away unwanted household materials. Table 4 shows the tonnages of waste collected and recycled by Council.

The Perry Street Recycling Centre operated by Council enables residents to drop off specific other items for recycling and recovery. Table 5 shows the amount and type of material dropped off at the Centre by Randwick residents. These other items include:

- electronic (e-waste) specifically televisions, computers and their accessories

- polystyrene packaging
- bulk metals including whitegoods
- thin plastics and plastic bags, and more recently
- problem wastes including paints, light globes, oils, batteries and more.

Randwick Council has been working extensively on facilitating stronger recovery rates across the various waste streams, through kerbside collection, substantially improving drop-off facilities provided at the Perry Street Recycling Centre, and other community programs that cover public place recycling and reducing litter across our parks and beaches. Through preparation of its own Waste Management, Resource Recovery and Waste Education Strategies, Council has demonstrated a long leadership in reliable and innovative programs to recover waste and reduce the amount of waste materials going into landfill.

Alternative Waste Treatment

While the volumes of Randwick's main waste streams (rubbish, recycling, garden organics and bulky waste items) remain much the same from year to year, the recovery of waste material has increased by approximately 14 per cent over the past five years. The main factor contributing appears to be Council's approval to process much of the red-lid rubbish material through an Alternative Waste Treatment (AWT) facility.

The AWT utilised by Randwick enables some 50 to 60 per cent of the waste material processed to be recovered or re-used compared to the disposal of all material into a traditional landfill. As landfills around metropolitan Sydney become more scarce and expensive, the use of AWT facilities to dispose of Councils' waste is likely to become relatively more affordable. Furthermore advancements in technologies used by AWT facilities is likely to increase the range of waste materials that can be processed and recovered.

Continuing initiatives to assist householders improve their level of recycling and composting remain. Red-lid rubbish bins have been found to contain around 17 per cent of items which can be recycled and 42 per cent of organic material (mostly food) capable of recovery as well.

Perry Street Recycling Centre

In 2012, Randwick became the first Council in NSW to partner with the Commonwealth on the product stewardship arrangements covering the recycling and recovery of unwanted televisions, computers and their accessories. Previously one-off annual collections by Council had collected around 26 tonnes of electronic waste. Since the partnership with Techcollect for recovery of electronic waste delivered by residents to our Perry Street Recycling Centre, more than 655 tonnes of unwanted television and computer equipment has been recovered.

At the same time, Randwick's Perry Street Recycling Centre became the first local government recipient of a NSW Environmental Protection Authority (EPA) grant enabling the drop-off, processing and recovery of polystyrene packaging in NSW. Since recycling of polystyrene commenced at the centre, 13 tonnes have been recovered for re-use in plastic and insulation materials.

Other waste items of significance recovered from Randwick households include plastic packaging ('thin' plastics and plastic bags) which can be dropped off at our Perry Street Recycling Centre. While the tonnage is relatively low, the collection to date amounts to the equivalent of approximately 5 million plastic bags.

Table 5: Selected waste items recovered from the Perry Street Recycling Centre

Household waste material (tonnes)	2012/13	2013/14	2014/15	2015/16	2016/17
Electronic (e)-waste	91.26	199.40	122.00	144.89	97.88
Polystyrene	1.65	2.33	2.67	4.49	n/a*
'Thin' plastics and plastic bags	-	-	-	2.00	5.00
Mattresses	120.75	184.77	99.72	91.80	138.20

Compost Revolution program

An additional program responding to householder's organic food waste leftovers, known as Compost Revolution, has been running since 2010 as part of a collaborative project with neighbouring Waverley and Woollahra Councils. The program enables residents across the 3 Council areas to obtain discounted compost bins or worm farms as well as technical support and advice to encourage them to avoid placing organic food waste into their red-lidded rubbish bins.

Up to June 30, 2017, the Compost Revolution program has resulted in approximately 4,611 tonnes of food

waste being diverted from rubbish bins across the 3 Council area, with savings of approximately 920 tonnes of greenhouse gas emissions. The Randwick component of this total is close to half, with 2,099 tonnes of organic material composted, resulting in an equivalent reduction in greenhouse gas emissions of 484 tonnes. Table 6 shows the results of the Compost Revolution program for Randwick over the last 5 years. The success of the Compost Revolution program across Randwick and its neighbouring Councils has resulted in Compost Revolution now being adopted by around 30 other local Councils in both NSW and Victoria.

Table 6: Compost Revolution program results for Randwick

Year	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Tonnes of food waste diverted	163	338	358	354	358	471
Approx \$ savings in disposal costs	\$36,000	\$74,000	\$79,000	\$78,000	\$79,000	\$104,400
Estimated CO2-equiv savings (tonnes)	307	636	673	666	673	886

Fridge Buyback results

In keeping with Council's approach to improving its management of waste and increasing recovery of waste materials, Randwick has implemented other resource recovery programs including a whitegoods recovery initiative known as 'fridge buyback'. Under this program, unwanted second refrigerators are collected from households. This initiative across Randwick produced the following local results:

- more than 900 second hand fridges collected from Randwick residents;
- recycling of approximately 82 tonnes of metals;
- an estimated cost savings (in terms of energy bills) over the life of the collection scheme of approximately \$276,000; and
- a reduction in greenhouse gas emissions of 7,247 tonnes.

Funding for the fridge buyback program expired in 2016.

Regional Illegal Dumping (RID) squad

In 2016, Randwick partnered with other eastern and southern metropolitan Councils, supporting the Regional Illegal Dumping (RID) squad funded via a grant from the NSW Environment Protection Authority. This initiative saw RID squad officers following up incidents where the owners of illegally dumped material can be investigated, fined or ordered to remove dumped material.

The first major fine was applied successfully early in 2017 costing the owner of the material \$4,000. This trial of RID squad involvement across the eastern suburbs has been extended by an additional 12 months with the NSW EPA and participating councils monitoring the success of this approach in each of their areas.

Litter Campaigns

Over the 2016 and 2017 summer periods, Council received funding to develop and deliver an innovative campaign aimed at reducing beach litter, initially at Coogee beach but including Maroubra beach in the 2017 campaign. Litter counts were carried out ahead of the weekends where staff surveyed and spoke to individuals visiting the beach parks over the busiest times of summer. More than 4,500 beachgoers and visitors took part in the campaign pledging to dispose of their rubbish correctly or recycle where possible.

Food waste collection and processing trial

In 2013 a trial collection of food waste commenced amongst approximately 4,000 householders living in apartments or units (multi-unit dwellings) in Randwick City. The trial was conducted to establish processes and develop educational materials suited to communicating to a diverse target group across different areas of Randwick City. Audits of red-lid rubbish bins regularly establish that up to half the rubbish material placed into red-lid bins is food waste capable of being recovered for either composting or turning into biogas and the production of green electricity. By the end of June 2017, 136 tonnes of food waste has been collected, processed and turned into biogas at EarthPower, a food waste processing facility approved by the NSW EPA for that purpose.

Household Chemical Collections

Each year Council utilises an industry led initiative known as ChemCollect to encourage householders to dispose of unwanted chemicals, paints and oils. This chemical collection scheme is operated by industry specialists and allows householders to bring their unwanted chemical items for safe storage, collection, recovery or disposal. With two collections held across Randwick each year, the greatest percentage of unwanted items in this category is paints. Table 7 provides details on the amounts collected.

Table 7: Household Chemical Collection results for Randwick

Year	2012	2013	2014	2015	2016
Tonnes of chemicals collected	163	338	358	354	358

Gross Pollutant Traps (GPTs)

To ensure beach areas across Randwick City are less impacted from the runoff occurring from our street drainage systems (kerbs, gutters and drains), Council has been progressively installing gross pollutant traps (GPTs) to trap rubbish within the drainage network. GPTs work by allowing water from the drainage network to run through but larger solid material (garden material and street litter) are captured preventing this material from running through the drainage system and to our popular swimming beaches.

Data collected over the past three years establishes that up to 20 per cent of material is litter items, much of it plastic and drink containers, and around half is organic garden material such as branches and leaves (see Table 8). Ongoing improvements to our GPT monitoring and collection system are currently being investigated.

Table 8: Waste and other material captured in Randwick's GPTs

Year	Vegetation	Silt / Sediment	Litter
2015	45%	39%	16%
2016	42%	44%	14%
2017	40%	43%	18%

Table 9: Proportion of waste and other material captured in Randwick's GPTs

Year	Sum of Vegetation (m ³)	Sum of Silt /Sediment (m ³)	Sum of Litter (m ³)
2015	125.9	106.8	44.7
2016	148.4	153.9	48.7
2017	84.3	90.1	37.3

5. Water cycle management

10e: A total water cycle management approach including water conservation, re-use and water quality improvements is adopted

5.1 Water management? ●

Water is a precious resource relied upon by all living things, and perhaps taken for granted until communities experience times of drought, bushfires or extended periods of hot summer weather. Australia is the one of the driest continents in the world, yet we are one of the highest consumers per person of this valuable resource.

Our popular swimming beaches attract substantial numbers of visitors each summer, comprising both residents and visitors to the City, making beach water quality an important environmental issue for Council and various Government agencies responsible for water monitoring and regulating discharges to the marine environment.

5.2 What does the data show? ●

Water consumption by Council includes water used for amenities, cleaning and washing of hard surfaces, and most significantly to irrigate public parks and playing fields used all year round by sporting and recreational user groups.

Since the commencement of the Sustaining our City program, the previous reliance on drinking or potable water from the Sydney Water network has been progressively transformed with major Council investment in new water storage, treatment and re-use systems. Much of the potable water utilised for irrigation is now replaced or augmented with treated borewater, rainwater, stormwater or other wastewater. As measured by the on-site meters installed at each of these sites, Council has utilised in excess of 1,500,000 kL (approximately 1.5 GL) from recycled and bore water sources since 2012/13, creating savings equivalent to more than \$2.5 million.

The figure and table below displays the total consumption for our main Council sites, and the amount of bore and recycled water harvested by Randwick City Council for irrigation and cleaning purposes.

Table 10: Water consumption and re-use per year in kilolitres (kL) across Randwick's main sites and sources

Financial Year	Administration Centre and Town Hall	Des Renford Leisure Centre	Other	Mains Network Total	Recycled Water	Bore Water	Total Consumption
2012/13	4,794	29,165	116,232	150,191	96,617	315,390	562,198
2013/14	4,567	30,909	123,783	159,259	97,882	211,160	468,301
2014/15	4,543	36,396	117,301	158,240	96,733	199,208	454,181
2015/16	3,999	34,720	144,236	182,955	79,122	212,107	474,184
2016/17	3,988	34,970	152,568	191,526	73,332	175,310	440,168
Per cent change 2012/13 to 2016/17	-17%	20%	31%	28%	-24%	-44%	-22%

Figure 2: Annual water consumption by site (network consumption) and bore and recycled water harvesting in megalitres

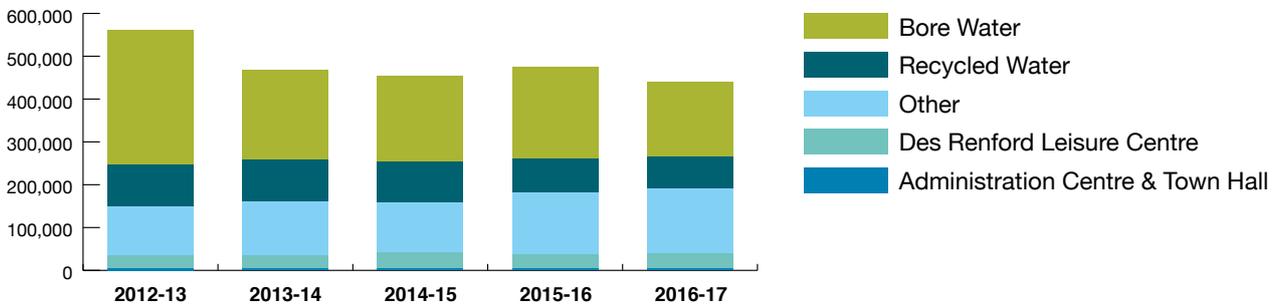
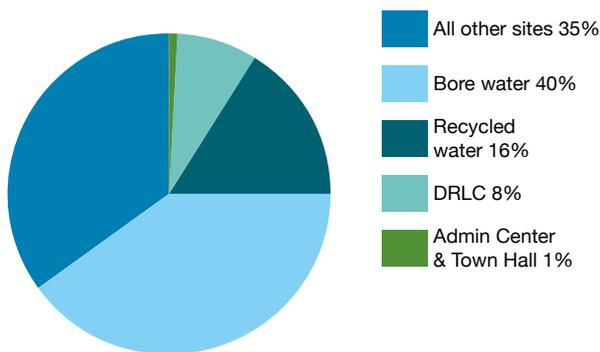


Figure 3: Proportion of Randwick City Council water consumption in 2016/17 by site (network consumption) and bore and recycled water harvesting



Comprehensive water metering of Council’s alternative water sources (borewater, stormwater, other wastewater) enables reliable and accurate data on water consumption provided from these alternative sources. Including our metered consumption of the Sydney Water network, Council’s total water consumption between 2012/13 and 2016/17 has decreased by 22 per cent. The savings each year are equivalent to the water contained in more than 180 Olympic-sized swimming pools.

There is always seasonal fluctuations due to weather conditions, however the investment in alternative water treatment and re-use systems continues to demonstrate positive results in reducing our reliance on potable water from the Sydney Water network.

Community water use

According to Sydney Water data, the total water consumption for Randwick City in 2015/16 was 13.7 GL. As this data does not currently differentiate between the water used for commercial and industrial purposes or those for households and units, it is difficult to accurately understand individual household water use. However, the average water consumption for units and households in Randwick is approximately 240 kilolitres per property per year (or 660 litres per property per day). These average water consumption figures per household have fluctuated since 2011/12 due to factors related to the weather, including warmer temperatures, rainfall and population increases.

Beach water quality

The water quality of our beaches has been monitored by the NSW Government’s Beachwatch and Harbourwatch program for well over a decade. The latest State of the Beaches report by the Office of Environment and Heritage (2016/17) shows that of the eleven beaches and bays monitored within Randwick City, nine have a beach water suitability of Good or Very Good with only Malabar Beach and Yarra Bay showing as Poor. The results are shown in table 12.

Table 12: Water quality rating of Randwick beaches (based on NSW EPA Beachwatch results)

	2012/13	2013/14	2014/15	2015/16	2016/17
Clovelly Beach	Good	Very Good	Very Good	Very Good	Very Good
Gordons Bay		Good	Good	Good	Good
Coogee Beach	Good	Good	Good	Poor	Good
Maroubra Beach	Very Good	Good	Very Good	Very Good	Very Good
South Maroubra Beach		Good	Good	Good	Good
South Maroubra Rockpool		Good	Good	Good	Good
Malabar Beach	Good	Good	Good	Poor	Poor
Little Bay	Good	Good	Good	Good	Good
Yarra Bay	Good	Good	Good	Poor	Poor
Frenchmans Bay	Good	Good	Good	Good	Good
Congwong Bay	Very Good	Very Good	Very Good	Very Good	Good

5.3 How is Randwick City Council responding? ●

Water conservation

Through investment in alternative water harvesting, storage, treatment and re-use across many of our Council buildings, parks and playing fields there has been a positive result in our water savings and less of a reliance for some sites on potable water from the Sydney Water network. Not only has Council been able to achieve its previous water reduction target of 20 per cent, there are cost savings equivalent to more than \$2.5 million if this water had been drawn from the normal potable water supplies.

Over the past five years an additional five sites had stormwater harvesting and re-use projects completed taking the total number of Council sites utilising stormwater, borewater and rainwater to approximately 30 sites.

Local businesses water audit

Commencing in 2009 and extended a number of times until mid-2015, Randwick Council (in conjunction with neighbouring Waverley and

Woollahra Councils) provided water saving audits for local businesses in each of the Council areas. This Business Water Audit program was supported financially and technically by Sydney Water enabling participating local businesses - particularly those with high water bills - to receive an on-site water audit and assistance in implementing solutions aimed at achieving overall water consumption from these local businesses.

Of the 250 local businesses participating in this program across the eastern suburbs, they achieved water savings of approximately 670,000 litres per day and approximately \$800,000 off their water charges each year. Sydney Water ended the funding support for this program in June 2015.

68 local businesses in Randwick participated in the business water audits program. By the program's completion in mid-2015, these businesses were saving 330,000 litres of water per day with total cost savings of \$400,000 each year from their water bills (includes service charges and water consumption).

6. Energy and Greenhouse gas emissions

10f: Energy conservation and efficiency programs are implemented

6.1 Energy and Greenhouse gas emissions ●

There appears to be an increasing awareness of energy issues driven by community and scientific concern around climate change - and the escalating prices of power – largely driven by our high reliance on energy derived from coal fired power stations. Perhaps reflecting this knowledge and raised concerns, more and more households are installing solar panels and battery storage technologies to conserve energy and reduce their energy costs.

With the aging nature of our power infrastructure, there are decision makers at the corporate and government level trying to establish where new investment in electricity networks should be made.

The burning of fossil fuels for both our electricity generation and transportation produce many unwanted by-products which impact upon our air quality. These by-products - in the form of 'common' air pollutants - have been well documented and regulated over many decades in Australia. There are human health, social and environmental costs associated with not just the burning of fossil fuels, but a continuing reliance on the combustion of wood or coal for heating or cooking purposes. The other key air pollutants from these activities are also contributing to the well documented changes to our climate system and its related impacts on human economic and social activities as well as across natural ecosystems.

6.2 What does the data show? ●

Regional Air Quality

The overall air quality in Australian cities is monitored and reported widely to determine potential air pollution levels and corresponding impacts on human health (reported as the Air Quality Index or AQI). Air quality monitoring is carried out in the Sydney Metropolitan Region on a regular basis by the NSW EPA. Based on the current data, air quality has improved significantly over past decades with many of the most dangerous air pollutants substantially reduced. National air quality standards for four of

six major air pollutants (lead, carbon monoxide, sulphur dioxide and nitrogen dioxide) are consistently met. The monitoring and reporting of industrial emissions via the National Pollutant Inventory by the Commonwealth Government is one of the current regulatory frameworks for progressing equivalent improved management of industrial emissions to the atmosphere.

Local government in Australia is not generally responsible for the management of wider air quality issues but tends to manage local air quality issues related to smoke from local sources or odour from local businesses (licenced industrial premises are usually regulated by the NSW EPA). Local councils' contribution is often concentrated on the organisations' contribution to energy consumption and greenhouse gas emissions; ways to reduce this contribution; and investigating opportunities to influence the corresponding energy consumption and greenhouse gas generating activities of their local community.

Air Quality Index results for Sydney Metropolitan Region (days exceeding an AQI greater than the standard of 66 days per year)

Financial Year	Days of AQI > 66
2012/13	26
2013/14	34
2014/15	23
2015/16	30
2016/17	16

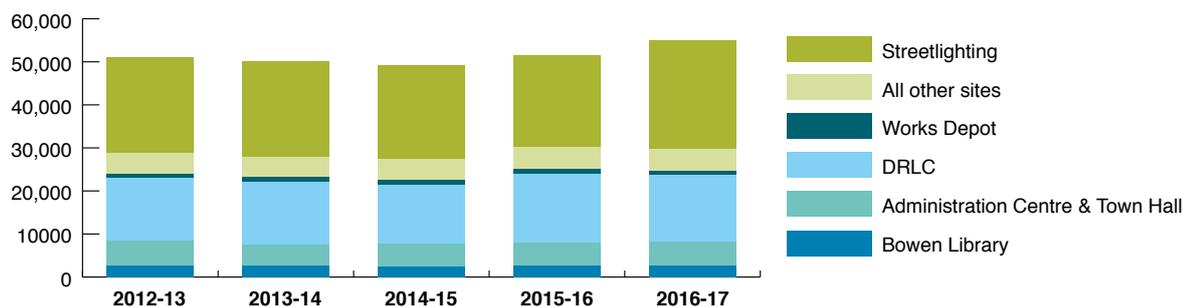
Council's Energy consumption

Energy audits of Council's operations, conducted over more than a decade, have confirmed that there are four main Council buildings that consume approximately 80 per cent of the organisation's overall energy (excludes streetlighting). These four main sites are the Administration Building; the recently expanded Des Renford Leisure Centre (DRLC); Lionel Bowen Library and Community Centre and the Works Depot. Energy consumption at all Council sites is detailed in table 13.

Table 13: Energy consumption per year by Council site (Gigajoules, GJ)

Financial Year	Bowen Library	Administration Centre & Town Hall	DRLC	Works Depot	All Other Sites	Streetlighting	Total (exc Streetlighting)	Total (inc Streetlighting)
2012/13	2,697	5,671	14,562	1,097	4,705	22,263	2,8732	50,995
2013/14	2,585	5,031	14,573	1,066	4,550	22,263	27,804	50,067
2014/15	2,542	5,323	13,505	1,090	5,095	21,622	27,555	49,177
2015/16	2,702	5,142	16,093	1,099	5,161	21,235	30,198	51,433
2016/17	2,667	5,356	15,539	1,085	5,132	25,110	29,779	54,889
Change 2012/13 to 2016/17	-1%	-6%	7%	-1%	9%	13%	4%	8%

Figure 4: Annual energy consumption by site



Excluding streetlighting, Council's energy consumption has increased marginally over the reporting period (four per cent).

Energy consumption results in corresponding levels of greenhouse gas emissions. Council's emissions from all sources have remained fairly static over the report period at close to 14,000 tonnes of CO₂ equivalent (CO₂-e) each year (refer Table 14). Council purchases GreenPower for our four largest consuming sites which reduces this amount by a further 200 tonnes of CO₂-e each year.

Despite the substantial increase in greenhouse gas emissions from increased gas usage at the expanded DRLC, greenhouse gas emissions in total have increased marginally over the reporting period by approximately four per cent overall. Streetlighting accounts for almost half of Council's energy consumption and level of greenhouse gas emissions.

Table 14: Greenhouse gas emissions by source for Randwick City Council (tCO2-e)

Financial Year	Electricity	Transport	Gas	Street Lighting	Total
2012/13	4,832	2,010	457	6,432	13,731
2013/14	5,107	2,054	388	6,555	14,104
2014/15	4,942	2,081	344	5,946	13,313
2015/16	4,782	2,104	727	5,663	13,276
2016/17	4,738	2,052	753	6,696	14,240
Change 2012/13 to 2016/17	-2%	2%	65%	4%	4%

Figure 5: Annual greenhouse gas emissions by source, with totals including and excluding streetlighting

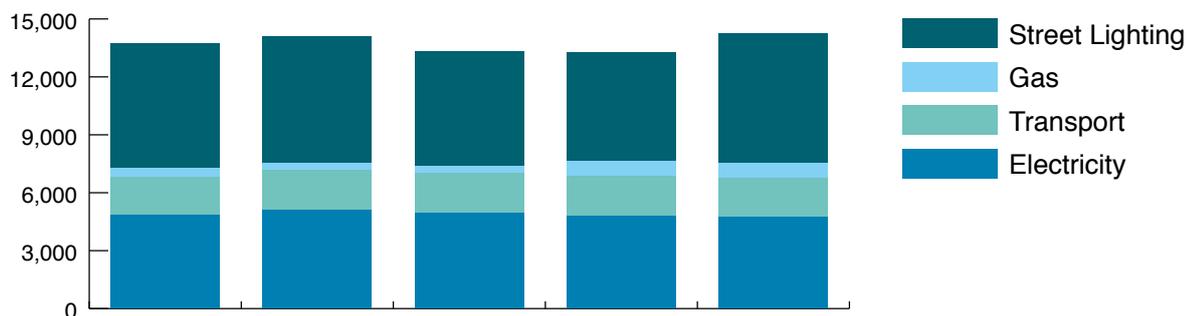
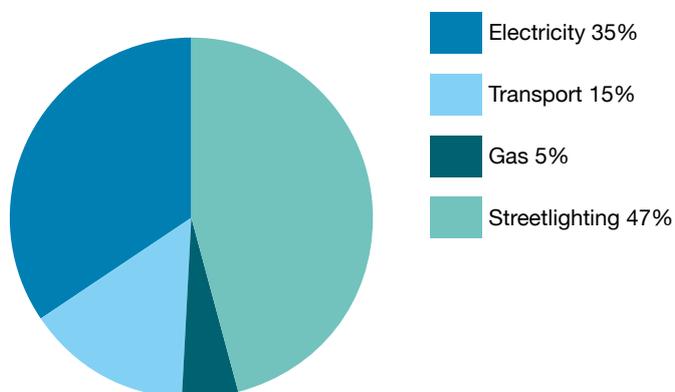


Figure 6: Proportion of emissions in 2016/17 by source, including streetlighting



Household Energy Consumption

Based on Ausgrid data, current household energy consumption from residents in 2015/16 is 4.8 MWh per household each year. This is a reduction of approximately eight per cent in comparison to 2011/12 which was 5.2 MWh per household over the year. Ausgrid data for financial year 2016/17 was not available at time of publication of this report.

Over the past five years, there has been a substantial increase of solar energy generated and exported to the

electricity grid from Randwick households. According to the Clean Energy Regulator, there are currently more than 1,880 solar installations on rooftops in the Randwick City, covering approximately eight per cent of dwellings. These installations make up a total installed capacity of more than six megawatts (MW). This trend is also evident in the Ausgrid data, which shows that solar energy exported to grid from residential systems has increased by 162 per cent between 2011/12 and 2015/16 (2,461 MWh per year to 3,999 MWh per year).

6.3 How is Randwick City Council responding? ●

Energy Efficiency

With continuous energy audits carried out every three years of our main energy consuming buildings since 2008, Council has prepared and adopted a specific Energy and Greenhouse Management and Action Plan which guides the level of funding and projects implemented to reduce energy consumption. This is aimed at reducing both energy consumption and emissions of greenhouse gases from Council operations.

A number of energy saving measures have been installed and are planned with a focus on the top four consuming Council sites.

Renewable Energy

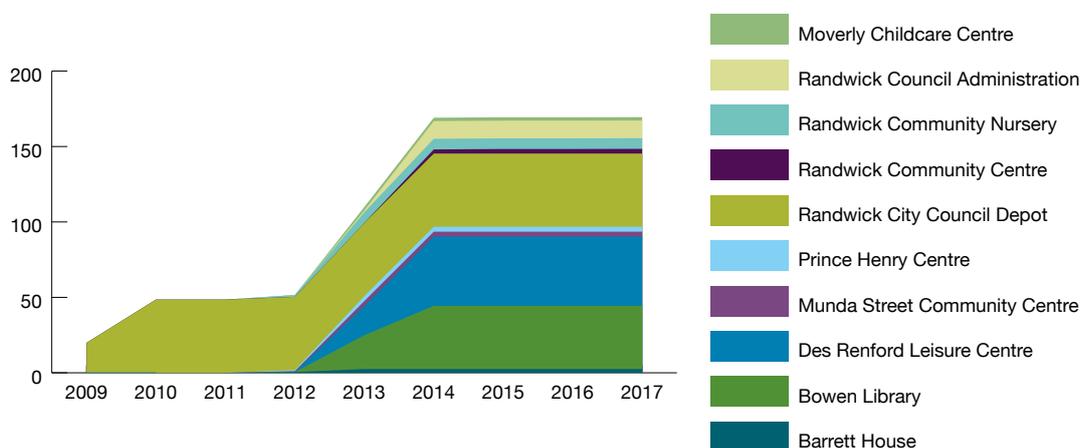
Council has now installed just over 200 kilowatts of renewable energy, mostly in the form of solar photovoltaic (PV) panels on Council and community buildings, and a 2.4 kilowatt small scale wind turbine installed at Randwick Community Centre.

In preparation of establishing a strategy for increased investment in renewable energy, Council adopted a Renewable Energy Master Plan late in 2015.

Table 15: Renewable energy generation capacity across Randwick City Council sites (excludes community buildings)

	Renewable generation capacity MWh
2012/13	51.6
2013/14	110.0
2014/15	166.4
2015/16	166.4
2016/17	166.4
Change 2012/13 to 2016/17	223%

Figure 7: Annual renewable energy generation by site by capacity



Street lighting energy efficiency

With total streetlighting costs in the order of \$2 million per annum, Randwick's more than 12,000 streetlights provide an enormous opportunity for council to achieve both savings in energy cost and consumption and in greenhouse emission reductions. A draft Public Lighting Strategy is being prepared to establish a program for Council and Ausgrid (the owner and operator of all these streetlights) to progressively change them to energy efficient LED streetlights while ensuring full compliance with all Australian safety standards for the lighting of roads, footpaths, and parks. Some thousands of these streetlights have already been changed over as they became due for replacement.

On completion of the formal agreement between Ausgrid and via a process conducted on behalf of member Councils in the South Sydney Regional Organisation of Councils (SSROC), a further 5,000 additional streetlights in Randwick will be changed over to energy efficient LED in a mutually agreed, accelerated program. The savings in greenhouse gas emissions and costs will be as much as 80 per cent from current lighting costs and performance.

Our Energy Future

Randwick Council has recently agreed to partner with nine other local SSROC councils to connect their householders with an energy saving program known as Our Energy Future.

Our Energy Future is giving householders access to a range of energy saving specialists and installers aimed at assisting them to reduce energy consumption and greenhouse gas emissions. This service enables detailed home energy assessments and reliable contractors, selected to provide free quotes and quality solar and energy saving products for residents and for businesses. The tenderer for these new services across the participating SSROC councils has been delivering a similar program successfully to Victorian councils for many years.

Solar My Schools

A recent program developed through the 3 Council Regional Environmental Program between Randwick and neighbouring Waverley and Woollahra Councils is the Solar My Schools initiative. Solar My Schools is supporting the large scale installation of solar into schools across the region by providing technical support and information throughout the journey for each school interested in renewable energy. In less than a year, more than 30 out of almost 70 schools across the region are now involved, taking advice and testing the feasibility of data and information provided to place solar panels on their school buildings.

Approximately 12 schools are in the process of taking the support provided and installing solar panels on to their own roof areas, with one school completing a 99 kilowatt solar array on one of their new recreational buildings. A number of other local councils are enquiring whether the program can be offered in their own regions under similar licencing arrangements as provided in the 3 Council's other popular program - Compost Revolution.

Sustainable transport

Electric vehicle charging stations

The 3 Council Regional Environment Program has completed a major tendering process to evaluate sites for the installation of electric vehicle charging stations.

It is expected two or three installations per local government area will be provided ahead of new release electric vehicles, due on the Australian market over the coming 12 months.

CBD to South East Light Rail (CSELR)

The Sydney CBD and South East Light Rail is a state government initiated project currently under construction and scheduled for completion in 2019. The project will introduce a light rail service along a 12 kilometre route extending from Circular Quay to Randwick City.

The route from the CBD follows Anzac Parade with one section proceeding to the Randwick Junction town centre and another servicing Kensington and Kingsford.

With the introduction of the light rail, Council recognised the need for a support plan to ensure the project is seamlessly integrated with the surrounding public domain and to achieve the best possible outcomes for the community. Key actions of the support plan include:

- creation of new urban spaces and public domain improvements;
- parking reconfiguration in side streets to offset loss of on-street parking on Anzac Parade, Alison Road and High Street;
- traffic calming works to minimise impact of the changed traffic arrangements brought about by the introduction of light rail;
- new east/west cycle ways connecting the light rail stops;
- upgrade and redesign Council's stormwater drainage network to align with the light rail development; and
- purchase of land in Kingsford for the provision of integrated public parking spaces.

Car Sharing

Council supports car sharing across Randwick City. Figures show there are currently almost 5,100 members utilising around 94 car share vehicles with an average hiring rate across the City of more than 700 trips per day.

Table 16: Car Sharing Initiative

Year	GoGet members	Average Hires per Day
2013	1,828	616
2014	2,764	763
2015	3,857	793
2016	4,913	732

7. Conclusion

Randwick Council's investment in infrastructure and community programs to support sustainability outcomes has been substantial and ongoing over the reporting period.

In excess of 15,000 people, equivalent to approximately 10 per cent of the Randwick population are interacting annually with the very comprehensive range of sustainability events, activities, workshops and courses being organised for them each year by Council. Whether residents, family members, business owners or students, this involvement is contributing substantially to the social fabric of the community, the environmental resilience of the wider society and many positive opportunities to engage, participate and learn how to strengthen their own family, work and neighbourhood networks to create a more liveable and vital Randwick City.

There has been significant investment and improvements in physical infrastructure such as the Coastal Walkway, active transport networks, stormwater harvesting, renewable energy projects, habitats for sensitive flora and fauna and school and community food gardens.

The data is starting to tell us that this investment is providing important returns in tangible and less tangible benefits, financially, environmentally and socially. Council is being recognised amongst local government as a leader in sustainability programs and for the initiatives that Council has carried out which achieve measurable and positive outcomes for its community and the wider natural and built environment.

This State of the Environment report aligns reporting issues with those identified specifically in the Looking after our environment theme of the 20-year Randwick City Plan. This streamlines the various reporting requirements carried out by Council and provides greater transparency and accountability for the programs initiated by Council to achieve progress in managing our environment for current and future generations.

Future initiatives include:

- Continuing investment in energy efficiency, and water efficiency and conservation efforts by Council to meet agreed targets;
- Supporting practical and achievable resource recovery outcomes to ensure progress toward and delivery of agreed waste diversion targets
- Ongoing support to achieve agreed Biodiversity Strategy outcomes to maximise efforts aimed at increasing protection and conservation of Randwick's native and indigenous flora and fauna;
- Further efforts to conserve marine and coastal values relating to biodiversity, vegetation and water quality;
- Supporting initiatives to progress upgrades or improvements to the Coastal Walkway;
- Supporting initiatives for active transportation options across the City including cycling, walking and public transport;
- Increased integration of strategic sustainability approaches across different areas of Council for example, purchasing of goods, fleet operation and delivery of events; and
- Ongoing nurturing and development of stronger partnerships and programs to support and extend Council's leadership in sustainability to initiatives across different sectors of the community e.g. householders, local businesses and schools.

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