
State of the Environment Report

2017-21



Randwick City Council
a sense of community





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Randwick Overview and Trends – SoE 2021







A summary is provided for each of the environmental objectives in the form of traffic light symbols. Each objective is summarised across three areas:

- The overall trend in the objective or issue in the past 4 years
- The reliability and availability of the data used to assess each objective
- The adequacy of Randwick City Council's response to the environmental objective

The colours are defined as follows:

-  Overall results are positive and/or trend is in positive direction
-  Some further work or time is required and/or the trend is difficult to determine
-  Stronger improvement is required and/or trend is in negative direction

There are currently no red lights represented in the SoE 2021 report. This largely reflects the short and long term approach Council is taking in response to the environmental objectives reported.

| OBJECTIVE | CITY PLAN DIRECTION | OVERALL TREND | DATA RELIABILITY | COUNCIL RESPONSE |
|---|---------------------|---|---|---|
| Toward environmental sustainability | 10(a) |  |  |  |
| Environmental risks and impacts | 10(b) |  |  |  |
| Land use planning, biodiversity and natural heritage | 10(c) |  |  |  |
| Resource Recovery | 10(d) |  |  |  |
| Water Cycle Management | 10(e) |  |  |  |
| Energy and greenhouse gas emissions | 10(f) |  |  |  |

About Randwick's 2021 State of the Environment (SoE) report

This State of the Environment report is prepared in accordance with Section 428A of the Local Government Act 1993 and prepared in conjunction with the Integrated Planning and Reporting Guidelines as described under Section 406 of the same Act. It should be noted that Council's previous comprehensive State of the Environment (SoE) report in 2017 was impacted by a NSW Government decision on amalgamations. That comprehensive report was pushed to 2017 so the current comprehensive SoE report is scheduled for 2021. There are indications that any further SoE reporting for local Councils in NSW will be impacted by adjustments in the statutory reporting requirements. This is likely to see the discontinuation of this form of reporting.

The core purpose of this SoE report is to address the key environmental objectives identified in Council's 20-year community strategic plan ('City Plan'). For each environmental objective, the report shall:

- Establish relevant environmental indicators;
- Report on and update trends for each environmental indicator; and
- Identify all major environmental impacts on the agreed environmental objectives.

The objectives of Randwick's 2021 comprehensive SoE report align directly with the 6 environmental objectives (10a to 10f) adopted by Council within Outcome 10, 'A Healthy Environment', of Council's 20-year City Plan. A brief review by Net Balance for Council in 2014

also established the alignment of our indicators with corresponding indicators and the approach set out for reporting under the Global Reporting Initiative (GRI).

Future statutory reporting based around a probable review of Council's 20-year City Plan is likely to adjust accountability of Council's environmental outcomes to the strategic approaches or actions set out in Randwick's 2021 Environment Strategy.

The environmental indicators which are primarily reported in this comprehensive SoE report include:

- 10a Population density
Ecological Footprint discussion
- 10b Environmental risk areas, related frameworks and responses by Randwick
- 10c Land use areas within the Randwick Local Government Area
Outputs of bush regeneration, weed control and revegetation in Randwick
- 10d Household waste generation and diversion from landfill for Randwick
- 10e Water use and savings for Council's top water consuming sites
Householder water use for Randwick
Water quality rating of Randwick beaches
- 10f Energy use and savings for Council's top energy consuming sites
Greenhouse gas emissions by source for Randwick Council
Householder energy use for Randwick.



Previous alignment of Randwick's City Plan with the Millennium Sustainable Development Goals launched in 2016 has been adjusted to the more recent Sustainable Development Goals to ensure consistency with the current set of international goals. Randwick Council has also been an integral contributor to the 2018 Resilient Sydney Strategy developed by City of Sydney in conjunction with all metropolitan Councils.

The approach for reporting on each SoE objective is consistently checked for relevancy by reflecting on:




- Why the objective or issue is important;
- What can be ascertained from the data available for each objective, and
- How is Randwick City Council responding in relation to each of the environmental objectives.

An overall summary of the Randwick 2021 State of the Environment report is provided ahead of this page reflected in the form of traffic light symbols for each of the environmental objectives represented in Outcome 10, A Healthy Environment in our 20-year City Plan. The summary for each of these objectives is displayed in the form of three different sets of traffic lights. These 3 sets of traffic lights signal:

- The overall trend in the objective or issue over the past 5 years

- The reliability and availability of the data used to assess each objective or issue
- The adequacy of Randwick City Council's response to the environmental objective

The colours are defined as follows:

-  Overall results are positive and/or trend is in positive direction
-  Some further work or time is required and/or the trend is difficult to determine
-  Stronger improvement is required and/or trend is in negative direction

As seen in the summary page and in the corresponding traffic light symbols reflected throughout Randwick's 2021 SoE report, there are currently no red traffic light signals. This largely reflects the short, medium and long term investments that have been made in respect of issues considered in this report and both strategic accountabilities as well as more reliable and accurate data available that monitors strategic and on-ground accountabilities.

The results of this examination in its summary form and robust explanations against each of the content objectives in this SoE report transparently represent a pattern of strong and sound results for Randwick by its Council and its community.



1. Toward Environmental Sustainability

City Plan Direction 10(a): Council's programs and partnerships foster sustainable behavioural changes and outcomes.

1.1. Why is Environmental Sustainability important?

As generally understood and reported in previous SoE reports, an increasing human population can usually be expected to increase the pressure on local and global environmental settings through its 'drawdown' on the environment, that is, human consumption of natural resources and the generation of wastes or emissions from those patterns of natural resource consumption. From power stations producing our energy from coal; land practices producing our crops and raising livestock; dams storing and distributing our water for washing and drinking; and the use of fuels in our internal combustion engine vehicles for work and recreation. Emissions or wastes in the form of different gases discharging into the atmosphere, from car exhausts or chimney stacks; water running down our street kerbs or sewage systems discharging to oceans; litter items in our parks or solid wastes delivered into landfills or other spaces which in turn can leach materials into soils or waterways.

Some of the impacts of these consumption patterns are measured and reported as total volumes for a city or organisation, or on a per person basis. Trends are then considered over time with the severity of impact considered in terms of natural replenishment or processing systems of nature. In some situations, natural replenishment or processing can alleviate impacts, but impacts may be of greater concern, if consumption levels are found to exceed or impede natural replenishment capacities e.g. tree removal versus tree planting. The differences between total volumes compared with per person consumption can be illustrated by dam levels at a certain time and how those dam levels can also be reflected by per person consumption levels. Another example might be in terms of greenhouse gas emissions to the atmosphere and emission levels on a per person basis. The considerations in impact can be reflected in either the replenishment capability of the natural resource being consumed and the capacity of natural systems to process or deal with those wastes or emissions generated.



The main purpose of reports like our State of the Environment (SoE) report is to summarise information on our patterns of consumption and the range of impacts these patterns of consumption are creating as well as efforts underway to minimise these impacts. This information is intended to enable communities and decision-makers to gauge the findings for themselves and consider whether efforts underway are sufficient or need strengthening. Previous SoE reports have referred to this approach as the Condition of the resource, Pressures on the use of those resources, and then Responses made to the range of pressures occurring (i.e. Condition, Pressure, Response).

An overarching assumption behind the preparation of SoE reports is the importance and responsibility that current generations have in ensuring there will be similar or equivalent levels of these natural resources available for the generations that follow us.

Current research indicates quite clearly that on a global scale, Australians, as with many developed nations, continue to show high levels of consumption of the natural resources used to clothe, feed, house and transport our human populations. These practices are resulting in a correspondingly high volume of wastes, emissions, etc. Unlike other larger developed nations, Australia's relatively small population of a little over 26 million people, (up by approximately 2.5 million people since Randwick's 2017 SoE report) shows a high level of resource consumption and waste especially when measured on a per person basis. In fact, despite Australia's lower population for a country, it's per person consumption of natural resources and generation of wastes and emissions are amongst the highest in the world.



Various data sources confirm Australia's consumption of resources like drinking water and generation of wastes measured on a per person, or per capita basis, are in the top 5 or 6 of all countries across the globe. When it comes to emissions of greenhouse gases, Australia has one of the highest per person emissions levels in the world.

Another way of measuring these consumption levels is using an 'Ecological Footprint' calculation. This can apply to a nation, a State or Territory, local government area or for each individual. This method considers the land area required for a given population, measured in terms of standardised 'global hectares' consumed per person, as a comparison against the total land area available. This total land area is described as the 'biocapacity' of the country, state, etc. So, if global hectares consumed exceed the land area providing the biocapacity of the human needs then this level of excessive consumption is said to be in 'deficit'. Using this type of measurement or analysis can be useful as it provides another insight into human consumption of resources over time.

Considering this form of analysis, Australia, which of course includes those of us living in Randwick, shows a sharp over-consumption in terms of 'biocapacity'. Even looking at the variations in some of the calculation methodology, results indicate that Australians are consuming the equivalent of 3 to 5 Planets of natural resources each year. Some nations have even higher Ecological Footprints. In recognition of these excessive consumption calculations, a number of jurisdictions around the world have instituted programs such as a One Planet Economy and organisation of Global Overshoot Day.

1.2. What does the data show? 😊

Population pressures

Available data from Australian Bureau of Statistics and NSW Government population projections indicate a slowed annual population change in the years 2016 to 2020-21 with the average annual growth rate at 0.7 per cent. Randwick's current population is estimated at around 156,619 residents living in more than 58,300 households of which multi-unit living represents a high 70 per cent.

Total household numbers have barely changed over the same timeframe and dwelling projections since 2016 have reduced slightly. Randwick's population increase, like Australia's at the broader level, is largely influenced by new arrivals and not natural changes i.e. through increased births, the influence of COVID on migration numbers to Australia appears to have also impacted projected population estimates for Sydney and its regions, especially over the short term. Current projections of population are expecting an increase of just over 20,000 additional residents, taking the population to an estimated 179,400 people by 2041 (ABS Census data).

Despite these recent influences, the density of people and housing within the Randwick LGA is high at approximately 4,300 residents per square kilometre. This is much higher than levels across Greater Sydney (refer to following table).

Population comparisons – Randwick to NSW and Australia

| LOCATION | 2011 | 2016 | 2021 | COMPARISON OF POPULATION DENSITY (2021) |
|---------------------------|-------------|------------|----------------|---|
| Randwick+ | 137,792 | 148,922 | 156,619 (2020) | 4310/km ² |
| Sydney Metropolitan Area* | 4,029,000 | 5,250,000 | 6,251,000 | 400/km ² |
| NSW* | 7,210,000 | 7,700,000 | 8,196,000 | 8.64/km ² |
| Australia* | 22,352, 617 | 24,168,303 | 26,289,000 | 3.14/km ² |

+ Based on ABS Census data
* For consistency, based on Population Australia data estimates





Community views

To assist in understanding community views and actions on local environmental issues, Council has carried out regular surveys of its residents every 3 years since 2005. The results of the “Who Cares About the Environment” surveys have contributed to the ongoing knowledge and direction of Randwick’s environmental and sustainability initiatives, projects and programs.

The 2021 Who Cares About the Environment survey results established that 55 per cent of Randwick residents rated environment, sustainability and Climate Change as both the most important and second most important issue in Randwick City. More than 86 per cent of residents stated they were concerned ‘a great deal’ or a ‘fair amount’ in regard to environmental problems.

In response to these concerns, the key environmental actions that are ‘often’ taken by Randwick residents are:

- 81% are avoiding the use of plastic bags (up from 51% in 2017 survey);
- 67% of residents are re-using items for environmental reasons (up from 64% in 2017 survey);
- 66% are reducing the amount of food thrown out (same as in 2017 survey);
- 64% are reducing their energy consumption (decreased from 71% in 2017 survey);

- 63% are reducing water consumption for environmental reasons (just up from 61% in 2017 survey);
- 52% are avoiding products with lots of packaging (up from 44% in 2017 survey);
- 49% are taking active steps to reduce fuel consumption and vehicle pollution (down from 53% in 2017 survey);
- 47% are composting or using a worm farm (up substantially from 27% in 2017 survey); and
- 24% are growing their own food (same as 2017 survey).

1.3. How is Randwick Council responding on this issue? 😊

Over this comprehensive SoE reporting timeframe, Council’s main approach to understanding, planning and responding to its wider community on broader environmental issues has focused on establishing an overarching strategic approach in addition to the continuing practical implementation of on-ground measures and actions.

In 2019, Randwick Council prepared a Local Strategic Planning Statement (LSPS) as part of the NSW Government’s planning framework administered through

the Greater Sydney Commission. Randwick’s LSPS, or Vision 2040 as it was named, was completed via an extensive community consultation process in accordance with clause 3.9 of the Environmental Planning and Assessment Act 1979 (the EP&A Act). The LSPS is intended to support land use planning and decision making over the next 20 years and brings together and builds upon strategic planning work already undertaken that informs Council plans, strategies and studies including the Randwick City Plan, Local Environmental Plan, Development Control Plan and other related documents (refer to pages 15-17 for more information).

To further inform and guide Council’s planning frameworks, seven new Informing Strategies were identified and have been progressively developed by Council teams over the past two years of the comprehensive reporting period. The seven Informing Strategies include:

- Housing Strategy
- Environment Strategy
- Recreation and Open Space Strategy
- Integrated Transport Strategy
- Arts and Culture Strategy
- Economic Strategy
- Inclusive Randwick Strategy

These Informing Strategies are intended to identify priorities for Council’s implementation over a 10 year timeframe and provide greater opportunity and accountability for projects supporting our 20-year City Plan and more recently completed LSPS. The most relevant to our current SoE report is the new 2021 Environment Strategy.

Council’s community environmental priorities are now fully transparent and accountable in Randwick’s new 2021 Environment Strategy. Four themes are represented in this particular strategy underpinned by 5 overarching principles and committing Council to 6 specific targets or objectives. Thirty-three separate approaches or actions are represented as part of this strategy, each articulating a measurable outcome within a particular timeframe, in most cases against a clear baseline.

There remains an important alignment or synergy between the programs and priorities delivered over past years through Council’s Sustaining our City program and those priority themes adopted in our new Environment Strategy. Community partnerships, engagement and education are now enshrined in the overarching principles while the themes reflect the key issues and programs for Randwick, that is, Coastal; Biodiversity; Resource Conservation; and Climate Change. (See Table below).

| ENVIRONMENT STRATEGY: THEMES OR OUTCOMES | OBJECTIVES |
|--|--|
| Biodiversity | Objective 1 – Increase by 60%, the number of native and indigenous plantings across Randwick City by 2030 from a 2018 baseline; |
| Climate Change | Objective 2 – Achieve a 60% reduction in greenhouse gas emissions (CO2-equivalent) across Randwick City by 2030 from a 2018 baseline, while acknowledging the significance and importance of aspiring to a 100% greenhouse gas emissions reduction target for the same timeframe; |
| Conserving Resources | Objective 3 – Increase residential recycling to 70% across Randwick City and divert 75% of waste from landfill by 2025; Objective 4 – Reduce the consumption of energy and water across Randwick City per capita by 30% by 2030; |
| Coastal | Objective 5 – 100% of Randwick’s beaches achieve a “Good” or “Very Good” result as monitored and reported in the NSW Government’s Beachwatch water quality program. Objective 6 – Ensure community satisfaction of the coastal experience is retained above 80% in surveys conducted from 2020 onwards. |

2. Environmental risks and impacts are strategically managed 😊

City Plan Direction 10(b): Policies and programs are developed and implemented in response to environmental risks and their potential impacts

2.1. Why is Environmental Risk Management important?

Council takes a responsible approach to managing environmental risk. Risk management is factored into decisions made across the full range of Council activities. One example of past activities that are still having an impact environmentally today relates to the historical discharge of industrial emissions into the atmosphere and water, or where and how industrial or municipal wastes have been discarded. 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.

One agreed way of talking about environmental risk management is the ‘precautionary’ principle - ensuring you act on all the available information there is before making decisions that may damage the environment into the future or for future populations.

2.2. What does the data show? 😊

The table opposite shows key risk areas that Council is involved in, their respective governing frameworks and the key strategic approaches under way by Council to manage the risk and potential impacts.

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 also 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 managing risks related to flooding (see Council's website for further information).



Environmental risk areas managed by Council

| ISSUE | LEGISLATIVE, REGULATORY OR OTHER GOVERNING FRAMEWORKS | RELEVANT ACTION / RESPONSE OF RANDWICK TO DATE | RELEVANT SECTION OF STATE OF ENVIRONMENT REPORT AND 20 YEAR CITY PLAN |
|--|--|--|---|
| Land use planning | Environmental Planning and Assessment Act (1979) | Implementation of our Local Environment Plan | SoE section 3 City Plan 10(c) |
| Contaminated sites | NSW Contaminated Land Management Act 1997 State Environmental Planning Policy No. 55 – Remediation of Land and related Guidelines | Investigation, planning and remediation (as required) for former landfill sites via Council's Contaminated Land Policy (1999) | SoE section 2 City Plan 10(b) |
| Threatened species and biodiversity conservation | NSW Threatened Species Conservation Act (1995) Commonwealth Environment Protection & Biodiversity Conservation Act (1999) | Specific recovery plans for Eastern Suburbs Banksia Scrub, Acacia terminalis ssp terminalis (Sunshine Wattle), Grey Headed Flying Fox and Green and Golden Bell Frog | SoE section 2 and 3 City Plan 10(c) |
| 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 LEP. | SoE section 2 City Plan 10(b) |
| Climate Change | Climate Solution Fund, Commonwealth Government; NSW Government Climate Change Framework; Randwick Environment Strategy | 60 per cent City-wide greenhouse gas reduction target by 2030; 100 per cent renewables and zero emissions for Council operations by 2030 | SoE sections 2 and 5 City Plan 10(b) and (f) |
| Environmental Sustainability | Local Govt 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 via a Special Rate Variation | SoE section 1 City Plan Outcome 10 |

Much of the environmental risk is managed via legislative and statutory requirements established and operated by the NSW Government. In particular, the Protection of the Environment Operations Act 1997 (POEO Act) in relation to regulation of industry and NSW Contaminated

Land Management Act 1997. Randwick Council has statutory responsibilities to manage certain functions of these and other NSW Government legislation including the Local Government Amendment Act 2019.

2.3. How is Randwick Council responding on this issue? 😊

Management of potentially contaminated public land

Many of the parks and reserves found in Randwick had historic uses that saw authorities of the day disposing of various types of building rubble and other waste material within the park area. 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 as improvements are undertaken over current times.

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. Since 2005, Council has carried out investigations of former landfill sites within

the local government area to assess their status and identify areas requiring a level of remediation or clean up. An implementation plan and timetable for remediation has been prepared across identified sites with a number continuing to be monitored.

Within the comprehensive reporting timeframe, several specific remediation projects have been carried out including:

- Jack Vanny Reserve, involving asbestos remediation with capping and landscaping.
- Purcell Park, involving remediation of site and including playground upgrade, underground stormwater harvesting and re-use and landscaping; and
- Partial remediation of Pioneers Park as part of field and adjacent facilities upgrade.



Threatened species and biodiversity conservation

More than 500 indigenous plant species and 300 animal species have been recorded within the open spaces and bushland areas of Randwick City, creating a significant responsibility for Randwick and its community (see Land Use Planning and Biodiversity in section 3 below). 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.

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 the independent NSW Scientific Committee. To date these species include the Endangered Ecological Community - Eastern Suburbs Banksia Scrub (ESBS), the Sunshine Wattle (*Acacia terminalis* ssp. *Eastern Sydney*), the Grey-headed Flying-fox and the Green and Golden Bell Frog. Randwick City has one of the largest remaining areas of ESBS and administers and implements the NSW Government's Saving our Species strategies for these significant species.

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 highly invasive weed, Bitou bush.

Floodplain management

Randwick is progressively studying all catchments (see Table below) within the Local Government Area applying the NSW Government framework which generally follows a four stage approach, that is:

1. collecting and assembling the necessary scientific data and community information;
2. identifying the extent and nature of potential flooding through a Flood Study;
3. developing a Floodplain Risk Study and Management Plan which sets out the options for controlling or responding to potential flooding; and
4. implementing the best applicable options within each catchment in response to the risks identified.

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

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

| CATCHMENT | FLOOD STUDY (MODELLING EXISTING CONDITIONS) | FLOODPLAIN RISK MANAGEMENT STUDY AND PLAN (UNDERSTANDING RISKS AND HAZARDS FROM BEHAVIOUR AND PLAN FLOOD MITIGATION) | IMPLEMENTATION OF MITIGATION WORKS / MEASURES |
|---|---|--|---|
| Kensington – Centennial Park | completed 2013 | adopted June 2013 revised 2019 (due to light rail infrastructure) | planning controls implemented |
| Birds Gully and Bunnerong Road | completed 2018 | underway | planning controls implemented |
| Clovelly Catchment | draft completed 2021(also included in Waverley LGA Flood Study) | - | interim planning controls implemented |
| Lurline Bay, Matraville and Yarra Bay catchment | draft completed 2021 | - | interim planning controls implemented |

Responding to Climate Change

Council's new 2021 Environment Strategy includes Climate Change as one of the four key outcomes for responses by Council. These strategic approaches include:

- Increasing the number of trees planted, retained and maintained to provide shade, habitat and heat reduction benefits; and increase plantings annually to achieve the Greater Sydney Commission target of 40 per cent tree canopy cover across Council managed land by 2040.
- Increasing residential and school participation in food waste avoidance and food growing initiatives.
- Mandating that all future plans of Council will detail their impacts on Climate Change.
- Implementing an accelerated street lighting replacement program to reduce greenhouse gas emissions and energy use across streetlights by 30 per cent per annum.
- Continuing implementation of programs by Australian Energy Foundation to increase rooftop solar installations by 20 per cent for Randwick householders and businesses including those in single and multi-unit dwellings.
- Implementing residential and business participation in energy saving or similar programs.
- Facilitating solar installations of energy saving measures across clubs and schools across Randwick City via the Solar my Schools initiative and its extension, Solar my Club.
- Partnering with small businesses to achieve a 20 per cent reduction in their greenhouse gas emissions.
- Procuring 100 per cent of Council's electricity through power purchase agreements (PPA) and increasing rooftop solar and batteries on new and existing council infrastructure.

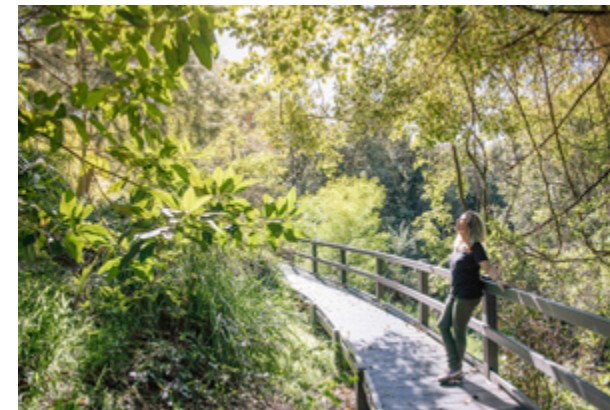


3. Land Use Planning, Biodiversity and Natural Heritage ☺

City Plan Direction 10(c): Bushland, open spaces and biodiversity are protected and enhanced for future generations.

3.1. Why are Land-use Planning, Biodiversity and Natural Heritage important?

People choose to live and visit Randwick City for various 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 facilities, high quality of parks, beaches and open spaces, proximity to university 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 services on which we all rely. The challenge is to achieve a balanced and sustainable level of development across the mix of land uses. This is not only supported by the new Environmental Strategy but also the new Open Space and Recreation Strategy, as well as other related Informing Strategies (see section 1).

3.2. What does the data show? ☺

Randwick City represents a fairly unique urban and coastal environment. Our population lives within approximately 37 square kilometres, much of which is bound by around 29 kilometres of coastal waters comprising the Pacific Ocean and Botany Bay. Within these boundaries there are 9 popular swimming beaches, as well as approximately 240 hectares of remnant bushland, equivalent to approximately 6.5 per cent of the City.

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

- 42 per cent (1,545 hectares) of the City is residential land
- 29 per cent (1,049 hectares) is 'open space', parkland and sporting fields
- 10 per cent (370 hectares) is roads
- 9 per cent (322 hectares) light industrial (including certain areas of Port Botany)
- 8 per cent (306 hectares) is described as 'special activity' which incorporates the University of New South Wales, the hospitals complex, Long Bay correctional complex, defence land, and cemetery
- 2 per cent (75 hectares) is represented as business.



3.3. How is Randwick Council responding on this issue? 😊

Randwick LEP 2012 (RLEP) is the principal legal document guiding planning decisions in Randwick City. It prescribes a range of land use zones, development controls and environmental, social and economic provisions. Key aims of the RLEP include the protection, promotion and enhancement of our natural and built environment.

The Randwick Development Control Plan 2013 (RDCP) supplements the statutory controls within the RLEP with detailed design guidance for new development covering landscaping, heritage, ecologically sustainable development, water management, recycling, traffic, transport and parking, foreshore scenic protection areas as well as specific controls dealing with site planning, amenity, building design and performance.

Local Strategic Planning Statement

In March 2020, Council finalised the Local Strategic Planning Statement (LSPS) which outlines our community's 20-year vision for the LGA, directing how future growth and change will be managed and setting out actions based on identified priorities. The LSPS vision establishes Council's commitment to our urban and natural environment, resilience to Climate Change and how we will address our social and economic responsibilities. Council will implement actions and monitor progress under each of the four planning priorities within the LSPS (liveability, productivity, sustainability and infrastructure & collaboration). Council's sustainability priorities include providing high quality open spaces and recreation facilities, implementing the green grid, increasing tree canopy cover, protecting bushland and biodiversity, reducing consumption of energy and water, managing waste and improving our coastal environment and waterways.

Housing Strategy

The Randwick Housing Strategy, approved by the Department of Planning, Industry and Environment in June 2021 establishes the strategic framework for residential growth across Randwick City to 2040. It aligns with the Randwick LSPS and the NSW Government and Greater Sydney Commission (GSC) strategic plans and directions set out in the Greater Sydney Region Plan (A Metropolis of Three Cities) and the Eastern City District Plan. The Strategy outlines priorities for a balanced and staged approach to housing growth, achieving diverse housing opportunities, identifying growth in and around strategic centres close to transport, jobs and services, strengthening good design expectations and sustainable housing, preserving and enhancing local character and delivering appropriate infrastructure.

Randwick Junction Strategy

The draft Randwick Junction Strategy sets the vision, strategies and actions to guide sustainable growth in the town centre and recommends planning changes aimed at balancing the significant heritage qualities and its local character with the need to plan for expected demand for employment, floorspace and economic activity. The centre forms part of the wider Randwick Strategic Centre which contains the cluster of the University/Hospitals campus (with construction currently underway for major new hospital and research facilities) and will play a key role in supporting the growth and function of the precinct.

Exhibited for public comment in late 2020, the Strategy identifies improvements to the town centre's public domain and public spaces, through site links and activation of select laneways for enhanced and safer public access. The light rail to Randwick Junction has improved public transport accessibility, and together with planned streetscape and cycling improvements, will be a catalyst for a shift in travel away from private vehicles towards sustainable and active transport. Planning, design and transport investigations for the Centre are progressing.

Kensington and Kingsford (K2K) Planning Proposal and DCP

Detailed planning and design controls for new development within the Kensington and Kingsford centres were finalised in 2020. These controls were based on the earlier place Strategy (the K2K Planning Strategy) which focussed on sustainability, urban design excellence and public domain revitalisation.

Council's K2K Strategy aligns planned growth with the major public transport infrastructure improvements along Anzac Parade (light rail) and proximity to business services, employment, education and recreation facilities. Prioritising public transport, walking and cycling aims to create sustainable travel behaviour and positive health and well-being outcomes for the community. High quality design and higher sustainability commitments on key opportunity node sites identified within the K2K corridor are incentivised through a competitive architectural process. Infrastructure contributions implemented alongside the K2K planning controls will enable Council to progressively deliver a range of public domain improvements including plazas, footpaths, cycleways, open space and water sensitive urban design.



Local Character

In early 2019, Council undertook a comprehensive community consultation program branded 'Vision 2040: Shaping Randwick's Future', to ask our residents about the characteristics of their local area; how places feel, what they value in their area, and the desired future character for their area. Community feedback and additional technical data, research and analysis has been utilised to identify eleven Local Character Areas (LCAs) across Randwick City. As a result, draft Local Character Statements have been developed for each of these areas. Character areas were developed by examining three locational indicators: environmental attributes including tree canopy, open spaces and the public realm; social attributes addressing housing, heritage and local vibe; and economic attributes encompassing town centres, infrastructure and services.

Once finalised and adopted, these Local Character Areas will inform Council's strategies, plans and policies. This means future development, works and improvements to buildings, spaces and facilities will need to have regard to the desired future character of each area.

Heritage

Council's heritage is legally protected and managed under the RLEP through heritage listing of over 400 individual items and 20 heritage conservation areas. The RLEP contains specific heritage clauses that require a proposed development to consider the impacts on the heritage significance of a heritage item or the heritage conservation area in which it is located. In 2020, Council engaged consultants to undertake a review of potential new residential heritage items and conservation areas for inclusion in the RLEP. Proposed new listings will be placed on public exhibition following completion of detailed statements of heritage significance.

The Randwick LGA has 65 recorded Aboriginal Sites and one protected Aboriginal Resting Place within the Kamay Botany Bay National Park listed on the State Heritage Inventory. Council's Local Strategic Planning Statement (LSPS) adopted in March 2020 identifies priorities to safeguard and celebrate our indigenous heritage including the preparation of an Aboriginal Cultural Heritage Study to investigate opportunities to interpret and celebrate our rich history of Aboriginal Culture.

Biodiversity

- Council’s Biodiversity Strategy 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 material including unwanted plants, encroaching on sensitive or fragile vegetation by dogs and cats, stormwater run-off containing paints, fertilizers, or detergents and the loss of vegetation ‘buffers’ or smaller ‘fragments’ of ‘green’ space or landscaping through development or ongoing vegetation removal.

Revegetation initiatives

Council’s Bushland staff work closely with volunteers to protect and maintain more than 15 important areas of native vegetation, primarily as Bushcare or Parkcare sites. In addition to supporting these volunteers, staff work with bush regeneration contractors on important ecological conservation programs at over 30 sites across the City. Bushland staff have been involving community members and local schools adjacent to these conservation areas in our Native Havens program.

The works carried out by staff, volunteers and contractors are essential in the continuing protection of these natural areas to support significant species and the habitats they rely upon. This includes a strategic approach to mitigating threats such as controlling pest plants and animals. Threats which impact bushland can stem from adjacent residential areas through the presence of, for example, introduced plants and domesticated animals. Native Havens is about supporting residents and schools with advice on planting appropriate species that can extend or expand ideal habitat into backyards, school yards, parks or to a lesser extent playing fields. Planting the right species has the potential to make the necessary provisions for sustaining the city’s local biodiversity. This will go a long way to protecting fragile insect, lizard and small bird populations for the future.

Single events like fires, flooding, illegal vegetation removal or tree poisoning places additional 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.

Plant with Us

A recent program supporting Council’s Environment Strategy outcomes as well as contributing to improved shade, habitat and heat mitigation has commenced with funding from the NSW Government’s Greening our

City Program. Plant with Us is a program that combines community and contractor planting to increase numbers of native and indigenous trees and groundcovers planted across the City, starting initially in the southern areas of Randwick.

Although placed on hold with the re-emergence of health order restrictions, the first four plantings have already seen more than 400 trees and approximately 3,000 grasses, groundcovers and shrubs planted with the assistance of hundreds of volunteers, both young and old. Plant with Us aims to plant an additional 1,890 trees in our streets and parks as well as approximately 12,000 smaller native and indigenous plantings over the next 18 months.

Randwick Community Nursery

Our 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 between 70,000 and 80,000 smaller tubestock varieties propagated and sold each year. Randwick’s Community Nursery is highly respected for its contribution to local seed collection and propagation of these seeds and cuttings to support and contribute to local planting initiatives and specialised planting by landscapers, residents and schools across the City. A new extension to greenhouse growing areas is expected to boost the number of plants and tubestock available from the Community Nursery.

Bushland volunteer and contract contributions (in hours) 2017-2021

| FINANCIAL YEAR | BUSH REGENERATOR (CONTRACT) HRS | BUSHCARE VOLUNTEER HRS | TOTAL |
|----------------|---------------------------------|------------------------|--------|
| 2020-2021 | 16,008 | 2,717 | 18,725 |
| 2019-2020 | 16,617 | 1,385 | 18,002 |
| 2018-2019 | 16,956 | 1,780 | 18,736 |
| 2017-2018 | 14,820 | 1,404 | 16,224 |

Native Haven involvement by residents and schools (2017-2021)

| FINANCIAL YEAR | SCHOOLS | RESIDENTS |
|----------------|---------|-----------|
| 2020-2021 | 1 | 5 |
| 2019-2020 | 2 | 7 |
| 2018-2019 | 3 | 7 |
| 2017-2018 | 6 | 25 |



Marine and coastal conservation

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 the Coogee to Bronte Aquatic Reserve. This is a 4 kilometre stretch of coastline taking in the popular swimming areas of Clovelly and Gordons Bay, including the underwater snorkel trail at Gordons Bay. There are approximately 43 hectares of marine waters supporting protection and nursery development of marine species including the very well-known blue groper (*Achoerodus viridis*) as well as many other marine invertebrates. Further information is available from the NSW Department of Primary Industries (DPI).

To increase community understanding and capacity on 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 in a hands-on program to discover their coast and beaches with specialist contractors and marine experts guiding participants in a range of activities, in, on and under the water and along our coastal foreshores.



There are currently more than 40 different pollutant traps which have been progressively installed across the Randwick drainage network, for the purpose of reducing street litter run-off and other material washed down our streets from impacting local beaches and adjacent coastal waters (see section 4 for further information).



4. Resource Recovery 😊

City Plan Direction 10(d): Waste is managed sustainably to ensure the highest level of resource recovery.

4.1. Why is Resource Recovery important?

There is an increasing understanding and concern around the level of waste being generated across the wider Australian community. While our standard of living is high for a well-developed nation, we are drawing heavily on our natural resources, almost certainly at a rate faster than the resources can be adequately replenished over the long term (also see Section 1 of this report).

The NSW Government’s Waste and Resource Recovery (WaRR) Strategy aims to increase resource recovery and divert waste material from landfill. This NSW Government strategy covers the years 2014 to 2021 and has funding available to assist Local Councils work toward meeting the NSW Government’s 2021 waste avoidance and recycling targets. These targets are:

- Increasing recycling to:
- 70% for municipal waste
 - 70% for commercial and industrial waste
 - 80% for construction and demolition waste
- Increasing waste diverted from landfill to 75%:
- 40% less litter (from a 2012 baseline year)
 - 30% reduction in illegal dumping (from a 2011 baseline year) and
 - Establishing 86 drop-off facilities across NSW to accept designated ‘problem wastes’.

4.2. What does the data show? 😊

Council provides each household with 3 separate bins for the collection of rubbish, recyclables and garden organics, with the green-lidded garden organics now accepting food organics waste items as well. The last financial year saw the roll-out and replacement of each of the three coloured bins for all residents and businesses in anticipation of a new 10-year contract with waste service provider Cleanaway which, as mentioned above, broadened green waste to include both food and garden organics recovery (referred to as FOGO).

In addition to these weekly or fortnightly waste collection services, householders are provided one scheduled ‘bulky’ waste collection and five additional booked ‘bulky’ waste collections each year. This change is intended to discourage illegal dumping of material by enabling a frequent opportunity for householders to have



their unwanted household materials taken away. See table below for annual tonnages of household wastes collected.

Council’s level of waste diverted from landfill has been lower in the past two years due to the NSW EPA revoking the Mixed Waste Organics Output (MWOO) Exemption Order in late 2018. This means that MWOO recovered at Alternative Waste Treatment facilities can no longer be used as compost for land application and is now disposed of in landfill.

4.3. How is Randwick Council responding on this issue? 😊

Randwick Council has invested heavily in programs to increase recovery of materials from across the different waste streams. This investment has been greatly enhanced with funding and support from NSW Government agencies and grants provided to Council. Despite this investment, waste issues, recycling and litter continue to dominate community concerns as shown in Council’s 3-yearly Who Cares About the Environment attitudes and actions survey of residents (see Section 1).

Following a number of years trialling a food organics collection and recovery process from a small number of multi-unit dwellings, Council brought forward its planned roll-out of this service to all residents across the City. This was timed carefully with the preparation and tender for a new waste contract for Council services. To ensure full monitoring and reporting capabilities would be enabled with the commencement of the new waste collection and recycling contract, including FOGO, Council provided all residents with new red, yellow and green-lidded bins.



New services including FOGO, commenced early in 2021. In a short time the amount of organics collected has increased by 60 per cent. A corresponding reduction of approximately 26 per cent of materials collected in red-lidded rubbish bins has occurred. These early results are very positive as they contribute to both the recovery of waste materials and reducing greenhouse gas emissions. However, further education efforts are continuing to improve the proportion of food organics being directed to the green-lidded bins as part of the expanded FOGO service.

Education is also ongoing to reduce the continuing practice of plastic bags being used to place recyclable items into the yellow-lidded recycling bin. Plastic bags are a high cause of ‘contamination’ of recycling content, in some cases causing truckloads of recycled material to be sent to landfill instead.

Perry Street Recycling Centre

Randwick Council’s Perry Street Recycling Centre also provides residents a facility for the drop-off of a wide range of additional items for recycling and recovery by approved waste service and recovery companies (see Table below). These additional items, promoted on Randwick’s website include:

- electronic (e-waste) full range of electrical items and appliances and their accessories
- polystyrene packaging
- bulk metals including whitegoods
- soft plastics including ‘thin’ plastics and plastic bags,
- clothing including all wearable clothing items and accessories, shoes, belts and handbags
- ‘problem wastes’ including paints, light globes, oils, batteries and chemicals (this improvement to the Recycling Centre was funded by a grant from the NSW Environment Protection Authority).



Annual tonnages of household garbage, green waste/FOGO (food and garden organics) and recycling across Randwick

| HOUSEHOLD WASTE MATERIAL (TONNES) | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|-------------------------------------|---------|---------|---------|---------|
| Household waste | 24,606 | 24,338 | 27,472 | 25,421 |
| Dry recyclables | 11,226 | 10,085 | 10,235 | 9,900 |
| Green waste/FOGO | 6,134 | 6,781 | 6,886 | 9,244 |
| Bulky waste /clean-ups | 5,736 | 5,542 | 5,542 | 5,918 |
| % of waste ‘diverted’ from landfill | 62% | 60% | 47% | 52% |

Some results of recovery programs of materials dropped off to Perry Street Recycling Centre

| FINANCIAL YEAR | E-WASTE (REGULATED) | POLYSTYRENE | SOFT PLASTICS | MATTRESSES |
|----------------|---------------------|-------------|-----------------|------------|
| 2017-18 | 118,594 kg | 4,076 kg | 8,580 kg | No data |
| 2018-19 | 113,028 kg | 4,159 kg | 9,072 kg (est.) | No data |
| 2019-20 | 115,097 kg | 6,762 kg | 19,552 kg | 8,611 |
| 2020-21 | 92,594 kg | 6,244 kg | 31,330 kg | 10,485 |

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 compost un-used food or leftovers and so avoid placing this valuable resource into their red-lidded rubbish bin.

Up to June 30, 2021, the Compost Revolution program has distributed just over 5,100 compost bins and worm farms to residents across the eastern suburbs with more than 2,800 of these distributed to residents living in Randwick City. Audited volumes of material being composted in those units for the same time period are in the order of 5,600 tonnes of organic material being

diverted from landfill with 2,800 tonnes being diverted from Randwick householders. The 3-Council Compost Revolution program continues being adopted by around 20 other local Councils in NSW and Victoria.



Annual tonnages of household and organic waste material and recycling across Randwick

| | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|--|---------|---------|---------|---------|
| No of compost bins / worm farms provided | 996 | 644 | 731 | 448 |
| Tonnes of food waste diverted | 619 | 670 | 737 | 769 |



Gross Pollutant Traps (GPTs)

Gross Pollutant Traps or GPTs, serve a very important function, especially in the urban catchments leading down to our popular swimming beaches. Placed at a junction close to where our street drainage network takes water run-off to our lowest end of the catchment, most frequently our coastal and marine waters, GPTs are like large underground rubbish bins, placed to capture excess solid material including leaves and twiggy material, sediment material and rubbish washed down our streets.

Council has been installing these forms of ‘rubbish bins’ within the drainage network. They work by allowing water to run through the GPT with the larger solid material (garden material and street litter) filtered and captured

preventing these larger items continuing on to our beach areas. GPTs are limited in the size of materials they can ‘screen’ out from washing into beach areas; however, they still significantly improve the water quality of our beaches.

Observational data collected over the years establishes that for Randwick GPTs, approximately 10 per cent of material is litter items, much of it plastic and drink containers, another 50 per cent or so occurring as organic garden material, branches, leaves etc with the remainder of material represented as soil and sediment (see Table below). Randwick’s 2021 Environment Strategy indicates one new GPT will be installed annually over the timeframe of the Strategy.

Waste and street items material captured in Randwick’s Gross Pollutant Traps, 2019-2021

| MATERIAL CAPTURED | 2019 | 2020 | 2021 |
|-----------------------------|-------|-------|------|
| SUM OF VEGETATION (M³) | 241.5 | 176.0 | 97.0 |
| VEGETATION (%) | 50% | 50% | 50% |
| SUM OF SILT / SEDIMENT (M³) | 193.2 | 140.8 | 77.6 |
| SILT / SEDIMENT (%) | 40% | 40% | 40% |
| SUM OF LITTER (M³) | 48.3 | 35.2 | 19.4 |
| LITTER (%) | 10% | 10% | 10% |



5. Water and Water Quality 😊

City Plan Direction 10(e): A total water cycle management approach is adopted including water conservation, re-use and water quality improvements.

5.1. Why is water important?

Water is a very 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 one of the driest continents in the world, yet we are one of the highest consumers per person of this valuable resource. This makes drinking water quality and availability an essential resource for our cities and anywhere where human settlements occur. Surprisingly perhaps with the cyclical nature of droughts and society’s regular experiences with drought, many uses where drinking, or potable water is utilised, could be replaced with treated wastewater. Randwick Council has been investing in the construction and installation of these alternate water harvesting, treating and distribution systems for more

than a decade looking at the opportunities provided from re-using stormwater, rainwater, borewater or even blackwater for uses deemed appropriate. This not only avoids utilising high quality potable water when it isn’t necessary but re-uses the various forms of alternate water sources available that generally run out to sea.

Water quality also continues to be of concern and interest for the tens of thousands of residents and visitors flocking to Randwick’s popular swimming beaches throughout the year, particularly over the summer months. Many of the planning controls and additional infrastructure such as Gross Pollutant Traps (GPTs) (see Section 4 above) contribute to achieving higher water quality standards enjoyed by swimmers along the Sydney coastline. There are also a number of government agencies responsible for regulating discharges to the marine environment and for monitoring beach water quality for the information of local Councils and beach users. That means, local Councils, including Randwick, are relying on these controls and related data on their relevant beach areas.

5.2. What does the data show? 😊

Council continues to use water in its public amenities, for cleaning and washing down surfaces, and irrigation of public parks and playing fields. Since the commencement of Council’s Sustaining our City environmental program, the previous reliance on drinking or potable water from the Sydney Water network has been progressively transformed. Council’s investment has high volume treatment and distribution systems utilising alternate water sources covering water usage across more than 24 of our parks and playing fields.

With each of these sites separately metered, data shows Council has utilised approximately 960,000 kL from recycled and bore water sources since 2017-18. This has generated cost savings equivalent to more than \$2 million. In comparison, Council’s operations have utilised 600,000 kL of potable drinking water from the Sydney Water network over this same time period.

The table below displays the total consumption for our main Council sites and the amount of bore and recycled water re-used by Council for irrigation and cleaning purposes.

Water use is trending down across sites and from the different sources of water used (recycled stormwater, borewater and network which incorporates the potable water provided via Sydney Water). These trends appear related to seasonal weather influences and not just COVID influences over the past 2 years or so.

Council’s total network water consumption from 2017-18 to 2020-21 has decreased by 26 per cent with non-network or alternate water use down by almost 50 per cent over the same time. This shows the impact of lower water availability even from these alternate sources while Australia was experiencing its preceding drier seasons. On a positive note, separate from these downward trends is the proportion of non-network water being used across Council operations on an annual basis. Council’s investment in water re-use systems indicates upwards of 50 per cent to more than 60 per cent of operational water requirements is being sourced from these alternate, non-potable water sources. The latest savings are equivalent to the water contained in approximately 75 Olympic-sized swimming pools.



Water consumption and re-use per year in kilolitres (kL) across Randwick’s main sites and by water type/ source, 2017-18 to 2020-21

| FINANCIAL YEAR | DRLC | OTHER | NETWORK TOTAL | RECYCLED WATER | BORE WATER | NON-NETWORK TOTAL | NON-NETWORK PERCENTAGE |
|-----------------------------|--------|---------|---------------|----------------|------------|-------------------|------------------------|
| 2017-18 | 32,104 | 141,636 | 173,740 | 112,247 | 261,305 | 373,552 | 68% |
| 2018-19 | 23,799 | 113,040 | 136,839 | 93,047 | 150,440 | 243,487 | 64% |
| 2019-20 | 30,900 | 129,132 | 160,032 | 69,099 | 86,000 | 155,099 | 49% |
| 2020-21 | 22,581 | 105,708 | 128,289 | 75,579 | 113,150 | 188,729 | 60% |
| % Change 2017-18 to 2020-21 | -30% | -25% | -26% | -33% | -57% | -49% | |

Community water use

In the residential sector, the average mains water consumption per household in Randwick per year in 2020-21 was 166 kL. This is a decrease from 187 kL per household per year in 2017-18 and reflects well against the current range of targets set by Sydney Water on a per person basis for water consumption across their drinking water network.

Beach water quality

The water quality of our beaches has been monitored by the NSW Government’s Beachwatch program for well over a decade. The latest ‘State of the Beaches’ report by the Department of Planning, Industry and Environment (2020-2021) shows that of the 11 beaches and bays monitored within the Randwick LGA, 10 currently have a rating of ‘Good’ or ‘Very Good’, with only Frenchmans Bay showing as ‘Poor’. The results for the past 4 years are shown in the Table below.

Water quality rating of Randwick beaches – 2017-18 to 2020-21 (based on annual ‘State of the Beaches’ reports by the Department of Planning, Industry and Environment (DPIE))

| BEACH | 2017-18 | 2018-19 | 2019-20 | 2020-21 |
|-------------------------|-----------|-----------|-----------|-----------|
| Clovelly | Very Good | Very Good | Very Good | Very Good |
| Gordons Bay | Good | Good | Good | Very Good |
| Coogee | Good | Good | Good | Very Good |
| Maroubra | Good | Very Good | Good | Very Good |
| South Maroubra | Good | Good | Good | Good |
| South Maroubra Rockpool | Good | Good | Good | Good |
| Malabar | Poor | Poor | Poor | Good |
| Little Bay | Good | Good | Good | Good |
| Yarra Bay | Good | Good | Good | Good |
| Congwong Bay | Good | Good | Good | Good |
| Frenchmans Bay | Good | Good | Good | Poor |



5.3. How is Randwick Council responding on this issue? 😊

Water conservation

Through its continuous 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, but there are also cost savings equivalent to \$2 million if this water had been drawn from the normal potable water supplies.

Over the past 4 years an additional 2 sites had stormwater harvesting and re-use projects completed taking the total number of Council sites utilising stormwater, borewater and rainwater to approximately 26 sites. The construction of the Maroubra stormwater re-use and recycling project is Randwick Council’s largest project undertaken. Providing two underground tanks, each of one million litres in capacity, the stormwater re-use is estimated to provide an additional 40 million litres of water, primarily for irrigation purposes along the entire length of the Maroubra coastline from Jack Vanny Reserve in the north to Arthur Byrne Reserve in the south. Purcell Park’s stormwater re-use project will add a further 10 million litres of treated stormwater to Council’s alternate water supplies.

Council’s sustainability rebates which commenced in late 2020, are providing rebates for residents to undertake a number of water saving measures. These include registering and participating in the WaterFix program conducted by Sydney Water for both households and for those living in apartments and also for installing rainwater tanks up to a certain capacity for use in the garden or, under approved conditions, into some household appliances.



Coogee beach stormwater quality

Randwick Council’s working group for improvements to water quality issues related to the open drain at the northern end of Coogee beach have been investigating options to address local water quality impacts. The working group comprising community, government and Council representation, including Sydney Water and DPIE / Beachwatch have established a range of recommendations including: community education; review of existing GPT infrastructure; and wastewater diversion options. Key actions under consideration include increasing stormwater harvesting and treatment capacity of current systems and diversion of the northern stormwater outlet from the beach into a Sydney Water sewer outlet beyond Dolphin Point (under specific weather events).

6. Energy and Greenhouse gas emissions ☺

City Plan Direction 10(f): Energy conservation and efficiency programs are implemented.

6.1. Why are Energy and Greenhouse gas emissions important?

Although there appears to be an increasing awareness of energy issues driven by community and scientific concern around Climate Change - and additionally escalating prices of power over time - Australian populations and their cities have maintained a high reliance on energy for the lifestyles enjoyed across our cities and other human settlements. In the face of this knowledge and raised

concerns, the most current trends are showing increasing numbers of households across the country are installing solar panels as well as considering or installing battery storage technologies to conserve energy and reduce household energy costs.

With the aging nature of our power infrastructure, there are decision-makers at the corporate and government level indicating more specific timelines as to when this aging infrastructure may be decommissioned. These decisions are influencing new levels of investment in technologies enabling continued access to reliable on-demand electricity.

The burning of fossil fuels for both our electricity generation and transportation produces 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 the burning of fossil fuels and continuing reliance on the combustion of wood or coal for heating or cooking purposes. The key air pollutants from these activities are also contributing to the changes occurring to our climate system and the range of related impacts these are having on economic, social and environmental activities across human settlements globally as well as natural ecosystems.

Average Daily Electricity Use per Household

| FINANCIAL YEAR | AVERAGE DAILY ELECTRICITY USE PER HOUSEHOLD (KWH) |
|----------------|---|
| 2017-18 | 12.8 |
| 2018-19 | 12.7 |
| 2019-20 | 12.6 |
| 2020-21 | N/A |

Energy consumption per year by Council site and/or source (Gigajoules, GJ)

| FINANCIAL YEAR | STREET LIGHTING | DRLC | OTHER | TOTAL |
|-----------------------------|-----------------|--------|-------|--------|
| 2017-18 | 19,236 | 16,071 | 4,616 | 47,321 |
| 2018-19 | 19,031 | 15,150 | 4,794 | 45,894 |
| 2019-20 | 18,178 | 11,146 | 4,652 | 39,818 |
| 2020-21 | 15,361 | 11,522 | 5,310 | 37,217 |
| % Change 2017-18 to 2020-21 | -20% | -28% | 15% | -21% |

Greenhouse gas emissions by source for Randwick City Council operations excluding street lights (tCO2-e)

| FINANCIAL YEAR | ELECTRICITY | TRANSPORT | GAS | TOTAL |
|-----------------------------|-------------|-----------|------|--------|
| 2017-18 | 9,373 | 2,214 | 753 | 12,340 |
| 2018-19 | 9,094 | 1,802 | 711 | 11,607 |
| 2019-20 | 5,820 | 1,884 | 482 | 8,186 |
| 2020-21 | 5,419 | 1,841 | 505 | 7,765 |
| % Change 2017-18 to 2020-21 | -42% | -17% | -33% | -37% |



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 Environment Protection Authority (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 (NPI) by the Commonwealth Government is one of the current regulatory frameworks for progressing equivalent improved management of industrial emissions to the atmosphere. Air quality index results in the following table indicate some exceedances of air quality standards do occur but are generally reflecting satisfactory levels. However, the results also demonstrate the potentially harmful levels of air pollutants in the atmosphere following major events such as bushfires.

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 odours from local businesses. One of the primary reasons that these local matters are considered by local Councils is the regulatory responsibility and success of the licencing controls which have been regulated over decades by the NSW EPA. As a result of new information and science related to particulates and other air pollutants, the NSW Government has released a draft NSW Clean Air Strategy considering the status of programs and intends to establish additional actions over the coming years.

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

| YEAR | DAYS OF AQI >66 |
|------|-----------------|
| 2017 | 16 |
| 2018 | 19 |
| 2019 | 18 |
| 2020 | 182 (bushfires) |
| 2021 | N/A |

Council's Energy consumption

Energy audits of Council's operations conducted over many years confirms that there are mainly 3 Council buildings ordinarily consuming most of our operational energy, as well as streetlight energy costs that are imposed upon all Councils. These main buildings are our Administrative Building, Des Renford Leisure Centre (DRLC) and Lionel Bowen Library in Maroubra.

Energy consumption overall for Council operations has decreased over the reporting period by 21 per cent. This can be attributed primarily to the LED lighting upgrades and replacements completed across 25 Council buildings and for around 3,500 streetlights. While some reductions have occurred as a result of the COVID-19-related lockdowns these have not contributed as much as the major energy efficiency improvement measures that have been implemented.

Following downward trends in energy consumption over the reporting timeframe, there has been a corresponding downward trend in greenhouse gas emissions which have decreased over the reporting period by 37 per cent. This can also be attributed mostly to LED lighting upgrades at sites and streetlights as well as the substantial shift to renewables in Council's power purchase agreement (PPA) to purchase 20 per cent of electricity from the Moree Solar Farm.

Household Energy Consumption

Based on Ausgrid data, current household energy consumption from residents in 2019-20 is 12.6 kWh per household per day. Ausgrid data for financial year 2020-21 is not currently available (as at September 2021).

Over the past 4 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 3,764 solar installations on rooftops in the Randwick LGA, covering approximately 14.1 per cent of dwellings (Sept 2021). Since the beginning of 2017-18, the capacity of rooftop solar in Randwick has increased by 322% and now produces a total of 20.6 megawatts (MW).

6.3. How is Randwick Council responding on this issue? 😊

Energy savings and efficiency

One of the major turning points in this reporting timeframe for Council's renewed focus on substantially reducing energy and water consumption and resultant greenhouse gas emissions, was the resolution adopted by Council in March 2018. This resolution established the pathway to which Council has been working to since then. The resolution stated:

1. Council notes that, as a recognised leader in environmental sustainability, it has committed in its 2018 Randwick City Plan to an in principle objective of achieving net-zero greenhouse gas emissions by 2030.
2. Council notes that through Outcome 10 of the 2018 Randwick City Plan, Council continues to establish strategies and pathways for the implementation of water conservation and stormwater harvesting projects; energy conservation, efficiency and renewable programs; major community education initiatives; and bushland restoration and conservation efforts aimed at increasing tree canopy.
3. a report be brought to Council detailing the measures and associated costs of meeting the targets listed below, in order to continue our leadership in sustainability and plan the roadmap to achieve our energy, greenhouse and water conservation goals:

- Greenhouse gas emissions from Council's operations – net zero greenhouse gas emissions by, including but not limited to the following measures:
 - Council's total energy consumption – 100% replacement by renewable sources (generated on site or off-site for Council's purposes) by 2030.
 - Council's vehicle fleet – net zero greenhouse gas emissions by 2030.
- total water consumed by the Council's operations– at least 50% replacement by non-mains/non-potable water sources by 2030.
- 50% increase in total tree canopy coverage by 2030 from current 2018 baseline

In the months that followed, Council became the fifteenth local Council in Australia to declare a Climate Emergency and commenced its 20 per cent purchase of renewable energy for its operational electricity. Within 12 months a 100% Renewables and Zero Emissions Roadmap was prepared covering all of Council's sites and practices. Implementation commenced on 50 sites, LED lighting upgrades commenced, additional solar PV was installed on Council buildings and other energy efficiency measures were installed such as air conditioning and plant equipment on key sites.

Development of Randwick's new Environment Strategy was strongly influenced by these new measures adopted and resolved as can be seen in the comprehensive range of strategic approaches committed to under the Climate Change outcome (see Section 2).

In addition to these actions, a previous Council resolution has enabled Randwick to be one of only a few NSW Council's to have achieved accreditation for carbon neutrality under the Commonwealth Government's Climate Active program (previously the National Carbon Offset Standard NCOS). This accreditation has now been achieved three years running.

Renewable Energy

Council has now installed 220 kilowatts of renewable energy across 15 sites, mostly in the form of solar photovoltaic (PV) panels on Council and community buildings. Additional installations are under consideration in keeping with the 100% Renewables and Zero Emissions Roadmap.

Sustainability Rebates

Previous householder support for increased solar and energy efficiency take-up has been upgraded extensively to an initiative providing direct financial incentives for householders and businesses across the City. Randwick Council’s Sustainability Rebates program can be described as one of the largest and most comprehensive financial incentive programs for residents and businesses by a local Council in Australia. As part of this program, properties in Randwick can receive up to \$2,000 in rebates for purchasing one of 12 sustainability products, which include rooftop solar, battery storage, rainwater tanks, variable speed pool pumps, insulation, and more.

As of June 30, 2021, the program has provided 263 rebates to the cost of \$147,647. These rebates have leveraged \$1,488,374 from the community (more than 10 times Council’s expenditure) and has resulted in 1,368 kW of rooftop solar installed (167 installations), 16 battery storage installations, 30 homes insulated, 5 heat pump hot water systems, 29 homes upgraded to LEDs, and more. These are providing savings of \$253,406 in energy and water bills per year.



Streetlighting Energy Efficiency

Following commencement of SSROC’s negotiated Streetlight Initiative, approximately 3,500 streetlights have been upgraded to energy efficient LED lights providing annual savings in the order of \$170,000 and reducing emissions in the order of 30 per cent. Further incremental LED upgrades will continue to see more streetlights being shifted to the LED technology.

Solar My Schools

The Solar my Schools initiative, conducted as one of the initiatives of the 3-Council Regional Environment Program, has supported rooftop solar installations on approximately 90 per cent of schools across the eastern suburbs.

Solar capacity across close to 60 schools now is approaching 2 megawatts of renewable energy. Almost 20 schools in Randwick are participating or still being supported in installing rooftop solar. The success of this program has seen other local Councils taking up Solar my Schools for their own local schools in some cases supported with funding from an energy retailer. The level of interest has also seen the program expand into Solar my Club with local sporting and community organisations receiving corresponding support to install solar on their own rooftops and contributing to energy savings and greenhouse gas reductions across our community.

Electric vehicle charging stations

In 2019 Council established an Eastern Suburbs Public Electric Vehicle Charging Station Network through our 3-Council collaboration with Waverley and Woollahra Councils. This network includes a total of 11 dedicated electric vehicle charging spaces, 4 of which are located in Randwick. In 2020-21 there were 2,482 charging sessions across the network which equated to an increase of 380% on the previous financial year. Environmental school grant funding was also provided for 2 dedicated charging spaces in the public carpark adjacent to The Ritz cinema at The Spot.

Charging sessions at each of these stations has been increasing steadily even ahead of the planned incentives to increase electric vehicle take-up by Sydney residents. The early commencement and installation of this technology has also resulted in a number of external public EV station installers considering the eastern suburbs LGAs for earlier adoption of new forms of public EV charging infrastructure.

CBD to South East Light Rail (CSELR)

Construction of the light rail link from the CBD to Randwick and Kingsford began in October 2015. In December 2019, the project officially opened with trams operating on the L2 Randwick Line. Four months later in April 2020, the L3 Kingsford Line opened and began operating. While not without its controversy and hindered by COVID-19, there is an expectation that this new form of public transport will ameliorate some of the existing commuter trips made by motor vehicles. The 2019-20 Household Travel Survey by NSW Government indicates there are approximately 111,000 public transport trips made in Randwick each year as well as 193,000 walking trips made annually for recreation or other purposes.



Cycling and Car Sharing

Council supports car sharing operations across Randwick City. Figures show there are currently more than 7,200 car share members utilising around 107 available car share vehicles with an average hiring rate of more than 1,000 trips per day (see table below).

Over the same timeframe, ‘Super Tuesday’ cyclist counts at key sites across the City indicate an increased rate of cycling over the past 4 years (see Table below).

| FINANCIAL YEAR | GOGET MEMBERS | AVERAGE HIRES PER DAY | TOTAL CYCLISTS ('SUPER TUES' COUNTS)* |
|----------------|---------------|-----------------------|---------------------------------------|
| 2017 | 5,459 | 993 | 2,139 |
| 2018 | 6,110 | 1,044 | 1,988 |
| 2019 | 7,172 | 1,095 | 3,395 |
| 2020 | 7,218 | 1,153 | 3,400 |

* 'Super Tuesday' cyclist counts are undertaken once a year at multiple sites across the city

7. Conclusion

Approval and adoption of Randwick's 2021 Environment Strategy is not only a milestone in the protection and restoration of the local Randwick environment, it also presents a new era in transparency and accountability for the environmental and sustainability projects and programs carried out across the City. There are now clearer lines of responsibility and involvement in the actions and engagement with our community from the whole of Council when it comes to the ongoing management of Randwick's urban and natural environment.

While the circumstances regarding COVID have dampened the capacity of face-to-face environmental programs, there has been clear signs of invigoration and resilience in the increasing acceptance and participation in all things on-line. From our marine and coastal discovery sessions, PermaBee workshops provided on a weekly basis before the most recent lockdown, and of course Eco Living on-line in 2020 and this year in 2021, with increasing attendance tuning in to hear specialist speakers, watch and discuss environmental movies, 'participate' in a full range of workshops and presentations and much more.

On-ground projects creating measurable and positive tangible change were hardly dimmed by the comings and goings of COVID-19. Development and

implementation of targets and resolutions supported by these tangible actions are intending to enable Council and the community to reach zero emissions and renewable outcomes by 2030 and 2040 respectively.

LED lighting upgrades in our streets and across 25 Council buildings saving us hundreds of thousands of dollars each year. Rebates for residents are taking off across 12 significant energy and water saving measures, covering all things from strata to single-homes and businesses, from rooftop solar to solar storage to electric vehicle charging stations in our homes or units.

Accelerated street and park tree planting will be back on track as we ease out of lockdown enabling hundreds of new trees and thousands of groundcovers and shrubs to be planted by increasing numbers of our community who seem to show no dampening of their resolve to contribute to improved environmental outcomes across our City.

A new LEP and soon-to-follow DCP will create planning instruments that build and consolidate on the plans and policies necessary for our environmental future, such as those previously prepared on waste management and biodiversity. Broader engagement in community activation and place-making initiatives appears to be increasing across Council sites from our community centres, libraries, parks, and La Perouse Museum. These new engagements often attract a wider and new



audience to our sustainability initiatives and programs. These include attendees at our widely-recognised Best Gift sustainability markets, place-making 'pop-ups', twilight concerts and night time NOX events with UNSW, as well as our consolidated but motivated PermaBee, Bushcare and Parkcare volunteers.

Collaborations and partnerships sow new seeds for the wider participation and engagement with more organisations and individuals to move environmental initiatives across additional settings and layers of our community. From our Randwick Collaboration Area Zero Emissions Strategy with the hospitals, UNSW and Royal Randwick Racecourse, Collaborating for Impact with environmental community organisations and our ongoing 3-Council Regional Environment Program.

The challenges continue to be enormous, the solutions to apply at the local and global levels often appear daunting, political willpower could hardly be in sharper contrast than that showing between local government and the Commonwealth. The International Climate Change talks taking place in November this year will either provide a catalyst for accelerated change at all levels of government or risk continuing to show the record of community empowerment and engagement is light years ahead of political inaction. In Randwick's case, our new Environment Strategy establishes the continuation of actions and solutions that go hand in hand with community expectations being met and supported well into the future.





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