

STATE OF THE ENVIRONMENT REPORT

2017 - 2021

Introduction

The Strathfield Council State of the Environment Report 2021 provides a snapshot of the status of the main environmental issues facing Strathfield Council. This report also acknowledges that its companion reports Annual Reports 2017, 2018, 2019, 2020 & 2021 and End of Term Report 2017-2021 also feature environmental reporting and information on actions and projects undertaken by Council during their respective reporting periods. The report has been prepared by Strathfield Council in accordance with s.428A of the *Local Government Act*.

The report is structured around the key areas of:

- Natural Environment and Biodiversity
- Transport
- Planning Built Environment and Heritage
- Waste Management
- Water
- Climate Change and Air Quality
- Engagement and Sustainability programs

The Strathfield Community Strategic Plan 'Strathfield 2030' contains five strategic priority areas, underpinned by the quadruple bottom line principles of environment, economic, social and civic leadership, which are integrated in the plan. The priority areas and goals are:

1. Connectivity

- Growth sustained by well-planned and accessible infrastructure
- Connected and integrated and connected transport networks
- Transformed and connected information and services

2. Community Wellbeing

- Socially cohesive and connected communities
- Healthy and active community
- Safe and accessible places

3. Civic Pride and Place Management

- Engaging and activated public places
- Creative and cultural community

4. Liveable Neighbourhoods

- Quality, liveable and sustainable urban design and development
- Clean, attractive and well maintained neighbourhoods
- Thriving and resilient environment

5. Responsible Leadership

- Trust in Council's leadership and decision making
- Accountable Council performance

State of Strathfield - an overview

The Strathfield LGA is located in Sydney's Inner West about 10.5 kilometres from the City Centre and half way between Parramatta and the City. Occupying a land area of about 14.1 square kilometres. Strathfield features highly connected transport systems, high quality heritage, residential and industrial/commercial areas, parks and reserves with foreshores along Cooks/Cox's Rivers and Powell's Creek which flows to Parramatta River. Whilst the Strathfield LGA is largely developed, the natural environment plays a vital role in contributing to local and regional ecosystems and human settlements. Strathfield's tree lined streets, well-kept gardens, playing fields, parks, public domains and natural areas contribute to the area's cultural identity and healthy environment.

The Strathfield community vision adopted in the Community Strategic Plan 'Strathfield 2030' states:

"Strathfield is a culturally diverse and socially cohesive community with respect for its heritage and environment and proud of its well-connected transport, business and educational institutions".

The reporting period of this report is the Council term 2017-2021, though environmental reporting is also included in the End of Term Report 2021 and Annual Reports.

As at June 2020, there were an estimated 47,767 people living in the Strathfield LGA. By 2041, it is estimated that the Strathfield LGA population will be over 80,000 which indicates large increase in population and housing density, as most of the new populations will be housed in medium-high rise dwellings. In the five years to June 2020 the Strathfield population increased by 5352, a change of 15.09%, representing an average annual growth rate of 3%. The growth in population is due to increase of the supply of new housing, particularly medium to high density development.

The number of heritage items and areas has remained stable with 232 heritage items and 17 conservation areas, the majority being built items. 1 Aboriginal find and 2 artefact scatters have been registered. All were located in public reserves.

The COVID-19 pandemic has had significant impact on the population, environment and Council operations. Actions to curtail spread of the COVID-19 pandemic since January 2020, resulted in Council preparing and enforcing safety plans and actions, notifying and educating the public on public health and safety measures and implementing new staff procedures and work practices. When required, testing clinics were set up and located on various locations in the LGA. Due to COVID lockdowns, there was a reduction of people and traffic movement which resulted in a general decline in emissions and improvement in air quality in the Strathfield LGA.

Transport services and emissions were significantly altered from 2020 by COVID-19 measures which reduced travel to work and use of public transport due to lockdowns. In this term, Council established the Strathfield Connector Bus which provided access to transport within the Strathfield LGA to ease local traffic congestion and parking demand. Council also installed 3 free and subsidised electric vehicle charging stations in strategic locations across the LGA and initiated conversion of Council vehicle fleet to electric vehicle/hybrids.

Emissions from energy consumption were also reduced due to COVID-19 measures, which was indicated by significant improvements in air quality rising to 92% of very good-good days in 2020-2021 from the previous year of 73%. Energy consumption in Council facilities also declined over the last two years. This is partly attributable to COVID-19 but also actions taken by Council to improve energy efficiency by installation of solar panels in the Library and in parks and conversion of older streetlights to LED.

Approximately 9% of the Strathfield LGA is open space, which is utilised for parks, reserves and for the conservation of environmentally sensitive areas such as Mason Park wetlands and Coxs Creek Reserve. There is currently 9.06 hectares of remnant bushland across the Strathfield LGA, which is less than 1% of the LGA's total area. Most of the bushland is in isolated remnants, surrounded by housing, parks, sporting fields, shops and industrial estates.

Key locations in the LGA for the natural environment include Mason Park Wetlands, Coxs Creek Reserve and Greenacre Frog Ponds. Biodiversity or wildlife corridors are primarily located along the Cooks River/Coxs Creek in Strathfield and Strathfield South. In 2019, Council adopted the Strathfield Biodiversity Strategy and Action Plan. This document sets clear strategic intent for Council and community in protecting and improving biodiversity in Council. Plans of Management were also reviewed and adopted for Council owned community land, including a plan for the Cooks River natural areas and Greenacre Frog Ponds.

The Strathfield LGA has an overall tree canopy of 17%, though this varies in consistency across the LGA ranging from low canopies of under 5% particularly in industrial areas and higher canopies of over 50% in many parks and reserves. The tree canopy includes remnant trees and vegetation as well as exotic ornamentals and the native rain forest trees on public and private property.

Strathfield's main waterways Saleyards and Powells Creek, in the north of the council area, which flow to join the Parramatta River at Homebush Bay and Coxs Creek and the Cooks River, which flow to the southeast to Botany Bay. The LGA is divided between the Parramatta River and Cooks River catchments. During the reporting period, Powell's Creek at Homebush was partly naturalised and its foreshores in the Strathfield LGA were upgraded with pathways, recreation facilities and improved access to open space. Council worked in collaboration with other Councils and State Agencies in the Cooks Catchment to improve the quality of the river and foreshores.

Council provides a comprehensive waste management services to residential households in the LGA, providing regular waste, recycling and green waste collections and access to online clean-up services. This is complimented by a range of initiatives which support improved community waste practices or regulation and enforcement actions to control illegal dumping and pollution. Over the reporting period, Council improved its waste diversion from landfill by 5%.

Council engages the community on environmental issues through promoting awareness and direct engagement in activities such as Bushcare and National Tree Day. Council has successfully reduced its use of resources such as energy and water through programs such as installing LED replacement lighting, solar lighting in parks and transforming high water use activities such as golf to lower use activities such as parkland. Council has also partnered with other organisations to develop innovative projects such as tree planting in industrial areas with Macquarie University. Many of Council's projects have been recognised and awarded in the Local Government Excellence Awards and Greater Sydney Commission Awards.

Planning, Built Environment and Heritage

The Strathfield Local Government Area (LGA) is characterised by a variety of land uses including residential, commercial, public recreation, parks and reserves and environmental areas. This section covers changes in population, planning and development, heritage and management of community land through Plans of Management.

Population	2017-2018	2018-2019	2019-2020	2020-2021	Status
Strathfield LGA (ERP)	43,852	45,143	46,926	47,767	Up↑

Table 1 Estimated Residential Population. Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).

Planning & Development	2017-2018	2018-2019	2019-2020	2020-2021	Status
Development Applications determined	152	173	246	269	Up↑
Value of Development Applications	\$212M	\$187M	\$170M	\$358M	Up↑
Section 96 Applications determined	84	51	60	81	Up↑

Table 2 Development application statistics. Source: Strathfield Council.

Heritage	2017-2018	2018-2019	2019-2020	2020-2021	Status
Aboriginal Heritage registered finds	-	-	3	3	Stable
Heritage Items (number)	232	232	232	232	Stable
Heritage Conservation Areas (number)	17	17	17	17	Stable

Table 3 Aboriginal and non-Aboriginal Heritage. Source: Strathfield Council.

Performance measures	2020-2021
Care and protection of historic and heritage buildings and areas	64%
How well new development blends with existing neighbourhood character	40%
Attractiveness of buildings, streetscape and surroundings in your local area	56%

Table 4 Council performance survey residents' ratings (excellent and good ratings). Source: Strathfield Council

Population

The population of the Strathfield Local Government Area (LGA) is continuing to increase. Population growth and increasing urbanisation lead to greater demand for housing, energy, water and transport services, as well as increased use of resources and the generation of emissions and waste. In the five years to June 2020 the Strathfield population increased by 5352, a change of 15.09% and average annual growth rate of 3%. As at June 2020, there were an estimated 47,767 people living in the Strathfield LGA. By 2041, it is estimated that the Strathfield LGA population will be over 80,000.

Estimated Residential population (ERP)	Number	Change	Change %
June 2020	47,767	+871	1.86%
June 2019	46,926	+1,816	4.03%
June 2018	45,143	+1,291	2.9%
June 2017	43,852	+1,388	3.3%
June 2016	42,415	+1,437	3%

Table 5 Estimated Residential Population. Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).

Strathfield Council contains a high proportion of medium and high density type dwellings, 57.88% compared to 40.3% of separate houses (ABS 2016). This is a significant difference to Greater Sydney, where 47.8% are houses and 43.8% are medium to high density. Since the 2016 Census, building of new multi-unit developments have continued and it is expected at the 2021 Census, the proportion of units to houses will have increased.

Population – suburbs	2017 (ERP)	2020 (ERP)	Population change (number)	% Change
Belfield	1479	1502	10	0.69%
Greenacre	2247	2306	86	3.82%
Homebush	8276	9499	1590	18.77%
Homebush West	9387	10440	1467	15.46%
Strathfield	19239	20245	1585	8.25%
Strathfield South	3832	3916	173	4.58%

Table 6 Population change 2017-2020 - suburbs. Source: ABS Regional Population Growth, Australia (3218.0).

Population density of the various suburbs of the LGA indicates that density is highest in the suburbs with the greatest amounts of medium-high rise unit development.

Population Density - suburbs	Population density – person per sqm
Belfield	2871
Greenacre	1587
Homebush	4434
Homebush West	6691
Strathfield	3597
Strathfield South	1528

Table 7 Population Density - based on 2020 ERP. Source: ID Community Profile Strathfield 2021.

Planning and Development

Strathfield Council is an urban area in Sydney's inner west with a variety of land uses including residential, commercial, public recreation and parks and reserves. The Strathfield LGA is located in the Eastern City District.

As a Sydney metropolitan area, Council is required to address NSW Government regional plans, population and housing future population targets in its land use planning. Council adopted a Local Strategic Planning Statement (LSPS) which sets out strategies and actions to address community aspirations for land use planning over the next 20 years. The LSPS is informed by the Strathfield Community Strategic Plan and an extensive community engagement processes. As at June 2021, 28% of LSPS actions have been completed or commenced.

A new Strathfield Local Environmental Plan was prepared in 2021 guided by the LSPS and supported by a range of land-use, economic and social studies.

Most of the development assessed and approved in the last four years was residential development, this included alterations and additions, ancillary development, new dwelling houses, multi-dwellings and some residential flat buildings (RFBs). There is also a steady increase of the number of applications being received and assessed. There was a reduction in the amount of Commercial/Retail/Office applications in the 2020 to 2021 period. During the 2017 to 2021 another significant portion of development applications were included under the heading 'other'. These applications include tree removals, ancillary development and other items that cannot be categorised as Commercial, Industrial or Residential.

Aboriginal Heritage

There is one isolated Aboriginal find and two artefact scatters in the Strathfield LGA. All registered sites are located on public reserves in the Strathfield Council area.

Strathfield Council is a member of the Aboriginal Heritage Office partnership which includes Ku-ring-gai, Lane Cove, North Sydney, Northern Beaches and Willoughby. The Aboriginal Heritage Office runs a museum and education centre at Freshwater. The Aboriginal Heritage Office has worked with Council in providing guided walks, talks, presentations and schools programs. These have included:

- Guided walks, talks, presentations, schools program.
- Updates to website.
- New videos and 360 virtual tours.
- Newsletters (*Yarnupings*).
- New Education series (COVID-19 era)(Yarnuping)
- Community Yarn Up events, eg Jakelin Troy, author of *The Sydney Language*.

The Aboriginal Heritage Office have been involved with site management and monitoring which includes review of surviving landscapes, targeted field surveys and ongoing monitoring. Three sites have been recorded and the report *Strathfield Aboriginal Site Management Report 2021 prepared*. A review of existing online Aboriginal history was conducted with research and preparation of updated 'Aboriginal history in brief' for *Strathfield Aboriginal Site Management Report 2021*

The Office has conducted desk-top reviews of Council works near recorded sites, inspection of playground installation, made recommendations for Aboriginal heritage themes incorporated into design and participated in Cooks River Aboriginal Working Group. The Office is involved in partnerships with Macquarie University – students assisted in developing a coastal erosion monitoring app and post-graduate student carrying out detailed photogrammetry of coastal erosion sites and University of NSW – Nuru Gili Indigenous Program, video of staff about site management and education programs.

Courses were offered to Council staff including land management and outdoor staff, planning and project (standard and immediate), compliance officers, refresher and compliance officers.



Monitoring of works and New Playground with Aboriginal flag theme



Field Survey Cooks River



Field Survey Cooks River

Non-Aboriginal Heritage

There is currently a total of 232 heritage items and 17 heritage conservation areas in the Strathfield Local Government Area. 227 are built items and 5 are landscape items. There have been no changes since 2017 of the number of heritage listed items or conservation areas.

The major issues concerning heritage in the Strathfield LGA from 2017-2021 include:

- Deterioration of heritage items
- Inappropriate development on sites that adjoin heritage items that have been approved through the Complying Development process.
- Illegal removal of significant heritage fabric on contributory dwellings within Heritage Conservation Areas.

Council has undertaken the following initiatives and programs concerning heritage:

- Provided small Heritage Grants for minor repair work.
- Involvement in the Heritage Working Group for Cooks River Catchment Plan.
- Interpretative signage and plans in association with the social history of Strathfield for sites undergoing re-development.
- Undertaking of a Heritage Study which reviewed heritage items and provided recommendations on management of heritage items.
- Provided Heritage Advice Service

- Winner of Heritage Award (keep Australia Beautiful) for the restoration work on Halloween House which is owned by Strathfield Council.
- Completion of heritage restoration works for Enfield Memorial Field Gun monument.



Plans of Management for community land

New Plans of Management were prepared, exhibited and adopted for all community land owned by Council in 2020. A review of Coxs Creek Reserve Plan of Management is ongoing. Community consultation for preparation of draft Plans of Management for Crown Lands which includes Strathfield Park, Bressington Park, Mason Park and Hudson Park was undertaken in 2020-2021. Draft plans are likely to be exhibited in 2022 once approval to exhibit is granted by Crown Lands NSW.

The following plans of management for community land in the Strathfield Local Government Area were adopted in 2020.

- Airey Park Plan of Management
- Bark Huts Reserve Plan of Management
- Begnell Field Plan of Management
- Community Facilities Plan of Management
- Cooke Park Plan of Management
- Cooks River Corridor Natural Area (Bushland) Plan of Management
- Croquet Lawns - Plan of Management
- Elliott Reserve Plan of Management
- Freshwater Park Plan of Management
- Greenacre Frog Ponds Plan of Management
- Ismay Reserve Plan of Management
- Local Parks Plan of Management
- Southend Tennis Centre Plan of Management



Strathfield Council



Strathfield Council

Transport

Strathfield LGA is well connected by public transport and major road systems which run through the LGA. Traffic congestion is a major issue as is increasing demand for transport due to increasing population. The availability of good transport systems in Strathfield LGA is a key attraction for residents, businesses and schools. Connected and integrated transport networks are central to quality of life, providing access to services, facilities, education and employment.

Transport networks in the Strathfield LGA includes highly connected rail, bus and road systems, provided by state and local Government and also include private and non-private vehicle and non-vehicle transports. Although the major transport infrastructure is controlled by State Government, Council provides and maintains local transport infrastructure such as local roads, footpaths and cycleways. Council also advocates on behalf of the community to State Government to improve access, frequency and coverage of public transport services.

Registered vehicles	2017-2018	2018-2019	2019-2020	2020-2021	Status
Registered vehicles in Council LGA	25,099	25,679	27,116	27,507	Up↑

Table 8 Registered Vehicles in Strathfield LGA. Source: Australian Bureau of Statistics

Travel Statistics (km)	2018	2019	2020	Status
Residential Bus	17,870,000	15,854,382	7,804,617	Down ↓
Residential Car as Driver	71,712,000	95,854,092	60,258,907	Down ↓
Residential Car as Passenger	39,523,000	34,109,213	19,057,786	Down ↓
Residential Train	104,70,6000	111,840,726	51,365,273	Down ↓
Residential Walked Only	4,757,000	7,664,431	4,537,568	Down ↓
Residential Walk Linked	11,502,000	11,294,420	5,263,579	Down ↓
Residential Other Mode	-	733,989	726,010	Down ↓
All	250,070,000	277,351,256	149,013,743	Down ↓

Table 9 Use of Transport in Strathfield LGA - calendar year. Source: Transport for NSW and Resilient Sydney.

Performance Measures	2017-2018	2018-2019	2019-2020	2020-2021	Status
Rail services for LGA	76%	85%	86%	90%	Up↑
Bus services for LGA	65%	75%	73%	74%	Up↑
Connections to major roads	62%	72%	75%	79%	Up↑
Local roads inside the Strathfield LGA	64%	69%	57%	70%	Up↑
Overall access to transport services	79%	85%	82%	84%	Up↑

Table 10 Residents ratings of transport services at excellent/good levels. Source: Strathfield Council

Public Transport

The Strathfield LGA has three rail stations at Strathfield, Homebush and Flemington. Strathfield Station is a major station in the Sydney Rail network and Trainlink Intercity rail system. The average daily entry/exit counts of Strathfield Station is about 25,000 persons. This declined due to COVID-19

measures to about 7,500 persons per day in March 2020 and rising to 14,000 per day in September 2020. Flemington Station pre-COVID average was around 5,000 entries and exits per day reducing to around 3,000 per day in September 2020. Homebush Station averaged around 3,500-3,700 entries and exits per day, reducing to 1,700-1,900 in September 2020.

The most recent household travel survey for Strathfield LGA was released in 2018-19. Data indicates that the highest amount of trips were for the purposes of commuting (23.1%), education/childcare (22.6%) and shopping (20.8%). Of that, 37% of all trips involved walking to and from other forms of transport with 18.2% by train, 16% walk only and 5.5% by bus. The residual involved vehicles as driver or passenger.

Transport statistics from Transport for NSW and Resilient Sydney are set out in Figure 1, which show the impact of COVID-19 on movement and reduction across all forms of transport in 2020, when lockdowns in Sydney were imposed which resulted in many people working or studying from home.

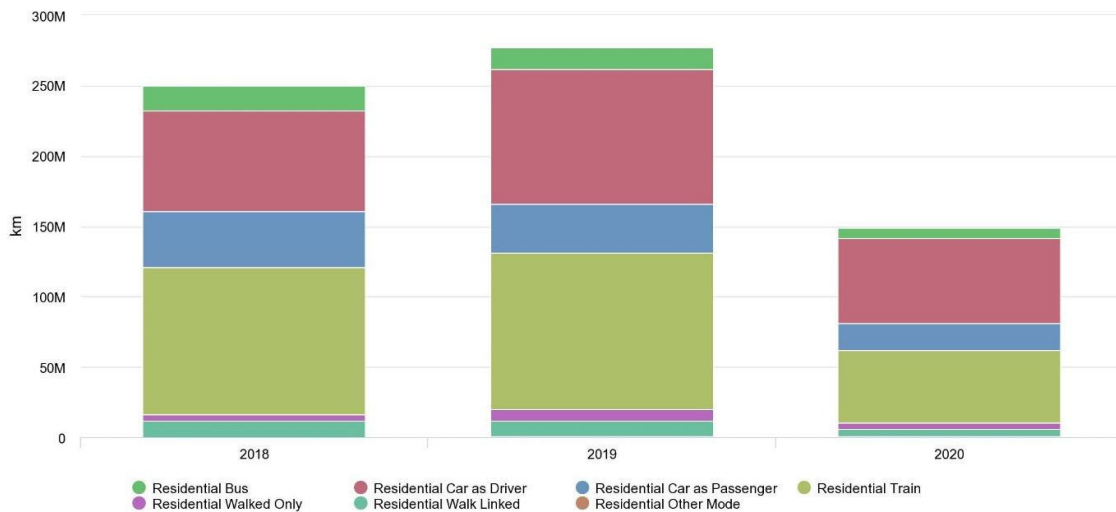


Figure 1 Residential transport 2018-2020. Source: Transport for NSW

Strathfield Connector bus

Council launched a local Community Connector bus in 2019, which services the north and south of the LGA and operates a regular basis between 7am and 7pm, 7 days per week providing residents with transport around the Strathfield LGA. The bus connects residents with key transport and services such as shops. The bus location has an online real-time tracker on Council’s website and promotes use of public transport rather than private vehicles. Over 150,000 passengers have used the connector bus.

Electric Vehicles

It is widely recognised that electric vehicles (EVs) have the potential to improve transport systems across the globe, through reduced running and maintenance costs, air pollution, noise pollution and limited reliance on fossil fuels.

Lower greenhouse gas emissions and cleaner air, resulting from the elimination of exhaust pipes, benefit the natural environment and public health significantly. Greenhouse gas emissions from the transport sector are one of the leading causes of climate change (20% of total emissions for 2013-2014 in NSW were attributed to transport) and air pollution is regarded as one of the largest environmental

risks to public health (health costs in Australia associated with air pollution mortality are estimated at \$11-24 billion per year). Globally, there has been a significant increase in the number of EV sales in the last decade. Australia has lagged behind, due to a lack of overarching policy direction resulting in only 0.1% of sales originating from EVs in 2016, compared to 1.1% internationally. However, in the last couple of years Australia has seen a considerable increase in attention to EVs, with government and business developing policy and infrastructure (e.g. the Senate inquiry in 2018).

In order to increase usage of EVs in the Strathfield LGA, Council has investigated and progressed with the following incentive mechanisms:

- Created priority and convenient parking for electric vehicles only
- Installed 3 free and subsidised electric vehicle charging stations in strategic locations across the LGA (Strathfield Town Centre, Bressington Park and Homebush West Town Centre).

Council has also lead by example by purchasing electric vehicle/ hybrids for its own fleet. In a joint collaboration, Council is currently working with JOLT/AUSGRID with the aim of building a large-scale network of electric vehicle charging stations across Sydney, with the first one proposed in Homebush West.



Key achievements 2017-2021

- Advocating on behalf of the local community and preparing infrastructure and project plans that included regular representations to Transport for NSW for improvements to transport services for Strathfield LGA and preparation of the Pedestrian Access and Mobility Plan (PAMP)
- Installation of 3 free and subsidised electric vehicle charging stations in strategic locations across the LGA (Strathfield Town Centre, Bressington Park and Homebush West Town Centre).
- Establishment of the Strathfield Connector Bus with north and south routes to improve transport connectivity across the Strathfield LGA and ease local traffic congestion and parking demand. Over 150,000 passengers have used the connector service to June 2021.
- Conversion of Council vehicle fleet to electric vehicle/hybrids.
- Working with JOLT/AUSGRID with the aim of building a large-scale network of electric vehicle charging stations across Sydney, with the first one proposed in Homebush West.
- Renewed or upgraded roads, footpaths, drainage, kerbs and gutters in all areas across Strathfield Council at a cost of over \$22 million (2017-2021).
- Council's Rangers and Parking Officers consistently monitored local streets and parking areas to ensure high levels of regulation compliance to keep Strathfield's streets safe.

Waste Management

Waste management is an important Council service which is managed effectively in order to prevent risks to public health, environmental contamination and the loss of valuable resources.

Diversion from Landfill	2017-2018	2018-2019	2019-2020	2020-2021	Status
Total waste materials diverted from landfill (tonnes)	4745	4590	5853	5851	Down ↓
% diversion from landfill	31%	35%	37%	36%	Up↑
Total waste sent to landfill kg/per person	211kg	238 kg	215.21kg	217.62kg	Up↑

Table 11 Waste diversion from landfill statistics. Source: Strathfield Council waste statistics

Performance measures	2017-2018	2018-2019	2019-2020	2020-2021	Status
Household waste and rubbish services	75%	76%	74%	79%	Up↑

Table 12 Quality of Council waste services at excellent/good level. Source: Strathfield Council

Waste generation by source

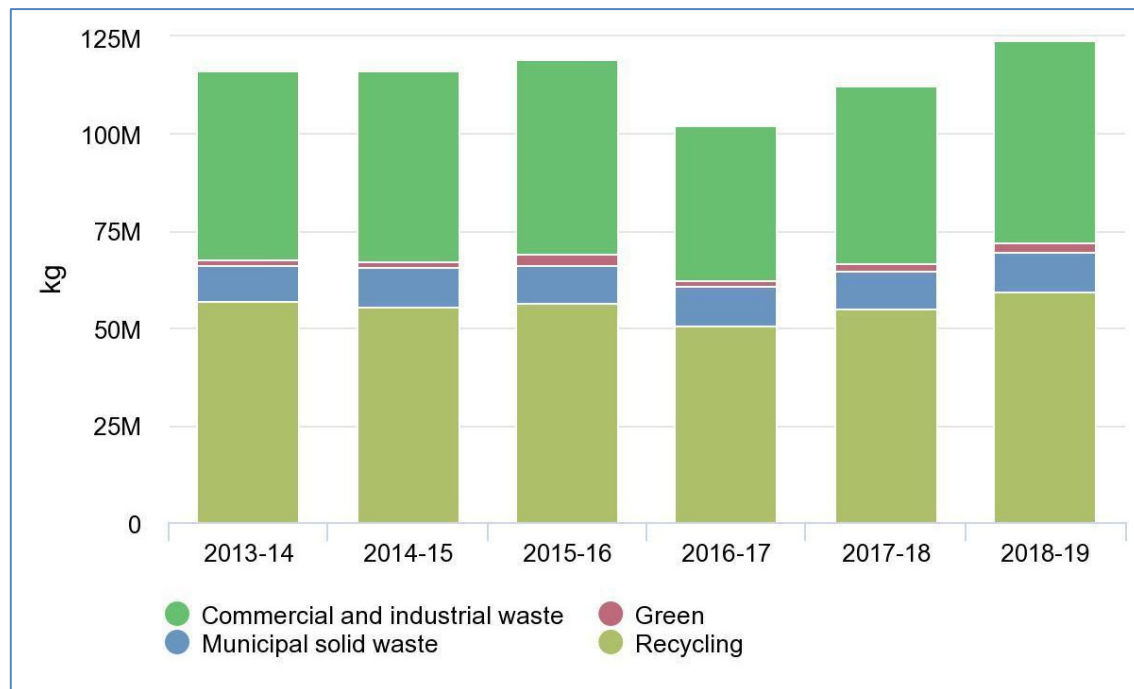


Table 13 Waste Generation by Source statistics. Source: Resilient Sydney

The graph indicates that a substantial amount of waste generated in the LGA is commercial and industrial waste.

Diversification from landfill

Improvement in waste diversion from landfill occurred over the Council term, which rose from 31% in 2017 to 36% by 2021, a 5% improvement. The lowest levels of waste diversion was from Multi-Unit Dwellings (MUDs). Council developed programs focused on MUDs to improve diversion and contamination rates and implanted strategies and actions such as education and community awareness programs.

Return and Earn

Since the launch of the Return and Earn at Strathfield Town Centre, over 18 million containers made from glass, plastic, aluminium, steel and liquid cardboard (cartons) have been collected, which reduces containers from general litter.

Contaminated Sites

Exposure to contaminated sites may affect the health of people, animals or plants. Contamination makes the land unsuitable for most uses.

Land contaminated by potentially harmful substances are registered as contaminated sites. Land contamination can be caused by a variety of land uses. Strathfield LGA has six registered contaminated sites with only one under preliminary investigation – the former Ford landfill in Homebush West. Old petroleum stations and other historic landfills also present a risk for certain land uses.

Smoke Free Town Centres

Council introduced a smoke free CBD at Strathfield Town Centre in 2019, which has been followed by Homebush and Homebush West. While smoke free centres promote better standards of public health and reduce exposure to secondary smoke, they also reduce cigarette butt litter, one of the most-littered item in NSW. Cigarette butts are toxic and harmful to the environment and easily carried in stormwater runoff through drainage systems and eventually to local streams, rivers, and waterways.

Key achievements 2017-2021

Actions to reduce waste, improve reuse and recycling included:

- Council provided weekly garbage, fortnightly recycling and green waste collection to residential households, waste and recycling service to multi-unit dwellings and three annual clean-up collections per household in the LGA.
- Audits of residential waste bins revealed low waste diversion rates from landfill of Multi-Unit Dwellings (MUDs) and higher levels of waste contamination rates. In response, Council developed MUD programs to focus education and enforcement programs on improving these rates.
- Council implemented a new online clean-up waste collection booking service which enabled residents to pre-book up to 3 household collections per year. Availability of clean-up services assist in curtailing illegal dumping.
- Council initiated litter reduction programs to address specific issues such as in the industrial areas near the Cooks River, which achieved 40% litter reductions.
- Introduction of smoke-free town centres at Strathfield, Homebush and Homebush West supported healthier public domains and reduced the littering of cigarette butts.
- Over 18 million items of recyclable materials were collected at the Return and Earn vending machines

- Council promoted events to increase recycling including E-waste and Chemical Clean Out Drop Off events and increase of drop off points for collection of light globes, batteries and CDs/DVDs recycling.
- Council supported the collection of unlimited free household items collection by The Bower Reuse and Recycling Centre.
- Council's investigation of illegal dumping incidents primarily involved household waste, commercial and industrial waste and construction and demolition waste. Where owners or dumpers were identified, notices were issued.
- Council participated in the Inner Sydney RID squad and has received various grants to target both littering and illegal dumping in industrial areas.

Climate Change, consumption, emissions and pollution

Energy produced from non-renewable resources leads to emissions of greenhouse gases, which are the primary cause of climate change.

Climate change poses a major threat to the wellbeing and lifestyle to the Strathfield LGA. Strathfield Council has committed to a 35% reduction in greenhouse gas emissions by 2030 and net zero emissions by 2050 (Strathfield Local Strategic Planning Statement p68)

The climate of NSW is changing due to global warming, with higher temperatures, increased rainfall variability and more extreme weather events. The effects of climate change are expected to become more pronounced and increase in severity as warming continues over the next century. Projected local climate change impacts for the Sydney region (Office of Environment & Heritage, 2014: Metropolitan Sydney Climate Change Snapshot) include:

- Maximum temperatures increases of up to 1.0°C by 2030 and up to 2.5°C by 2070. Minimum temperatures increases of up to 0.8°C by 2030 and up to 2.5°C by 2070.
- Increased number of hot days (>35°C). On average, the region will experience an additional four hot days by 2030 and eleven more hot days by 2070.
- Increase in extreme weather events such as heat waves, extended droughts, severe fire weather, hail storms and heavy rain or wind activity.

Over the next century it is expected that conditions will worsen for the survival of many species and ecosystems and the productivity of some agricultural systems. Counteracting the effects of climate change will depend on concerted action globally to reduce greenhouse gas emissions.

Air Quality

The Department of Planning, Industry and Environment collects data and reports on air quality concentration in the Greater Sydney Metropolitan area. While Council has a limited sphere of influence over air quality in the local area, Council works with other sectors of government, industry and the community to improve air quality. Air quality in the Strathfield LGA and surrounding areas was very good or good for 92% of the 2020-2021 year, which is a significant increase on previous years. This is mainly attributable to COVID-19 measures which resulted in decline of movement and particularly vehicle use. In the previous year, bushfires over the summer increased the number of hazardous days.

Air Quality (number of days) Strathfield LGA and surrounds						
Year	Very good	Good	Fair	Poor	Hazardous	% Very Good-Good days per year
2020-2021	172	164	23	4	0	92% - 336
2019-2020	67	201	40	19	39	73% - 268
2018-2019	57	231	55	14	3	84% - 308
2017-2018	44	242	52	17	6	78% - 286
2016-2017	67	236	35	16	4	83% - 303
2015-2016	87	218	44	11	5	83% - 305

Table 14 Air Quality Concentration Data. Source: Department Planning, Industry & Environment.

Energy Consumption and Emissions

A reliable and affordable energy supply underpins economic activity and our quality of life. But use of energy from non-renewable sources leads to greenhouse gas emissions and air pollution. There has been an overall decline/increase in both the total and per person amount of energy use.

Strathfield LGA emissions

One of Council's goals is to encourage sustainability and resource efficiency, in Council's operations and in the general community. Emission totals show a general decline in the Strathfield LGA and across most suburbs, likely due to the impact of COVID measures.

Strathfield LGA Emissions (tonnes CO ₂ -e) – per suburb					
Suburb	2016-17	2017-18	2018-19	2019-20	Status
Belfield	9826.667	7895.344	8043.858	8376.248	Up↑
Greenacre	68476.46	67591.32	72594.44	63589.91	Down ↓
Homebush	143191.1	122661	130836.9	126823.7	Down ↓
Homebush West	100837.6	93511.38	95113.28	89767.55	Down ↓
Strathfield	137958.4	134994.7	133882.6	135442.7	Up↑
Strathfield South	64601.65	83336.77	85042.83	85473.61	Up↑
Total	524891.9	509990.5	525513.9	509473.7	Down ↓

Table 15 LGA Emission data. Source: Resilient Sydney utilising data from Ausgrid, Endeavour, Jemena, NSW EPA, ABS Census, BTS Household Travel Survey and Kinesis.

Council consumption

Across all Council facilities, the total energy use for 2020-2021 was 8,367.23 GJ. This represented a decrease from the previous 8,879.36 GJ in 2019-2020. This is partly due to the impact of COVID-19 on Council operations and activities, for example reduced building use and fewer bookings at Council facilities throughout the year. To reduce energy consumption, a solar power system was installed in Strathfield Library and installation of energy efficient street lighting and path lighting in various locations.

Strathfield Council Facilities – Energy Consumption	
Year	Consumption (GJ)
2016-2017	10,032
2017-2018	9,933
2018-2019	10,070
2019-2020	8,879
2020-2021	8,367

Table 16 Azility Management Energy usage statistics 2016-2021

Tree Canopy

Green tree canopies are crucial in providing vital shade that reduces ambient temperatures and mitigates the urban heat island effect. They extend habitat, increase biodiversity and improve air quality by removing fine particles from the air and trees mitigate the impact of climate change, acting as a storehouse for carbon dioxide. Strathfield's urban tree landscape enhances streetscape appearance, provides habitat for birds and native animals, improves air quality, provides shade and reduces UV radiation and heat energy absorption.

The estimated tree canopy of the Strathfield LGA is 17% (NSW Planning, Industry and Environment 2019). However, there is considerable variation within the LGA of tree canopy coverage ranging from higher coverage in parks and reserves such as Coxs Creek Reserve (67%) and Ford Park (57%) to very low coverage of under 10% in the industrial areas of Strathfield South, Greenacre and Homebush and some residential streets in the LGA.

It is estimated that there are over 12,000 street trees and 40,000 trees in parks of varying species and ages in the Strathfield LGA. A review of Strathfield's historic and distinctive street trees was undertaken and a program of replacement of dying or diseased trees commenced to maintain the area's valuable tree canopies. Projects focussed on increasing the LGA's tree canopies have resulted in the planting of over 2,200 new trees at Hudson Park, Cooks River parks Maria Reserve and Elliott Reserve, and Bellfrog Reserve at Greenacre. Tree plantings have also been made in parks via the Bushcare program and on National Tree Days.

New and replacement plantings and natural area maintenance occurred in natural areas through Bushcare programs and National Tree Days. These programs and events provided community members opportunities to contribute positively to their local environment by planting important vegetation.

Council launched the project 'Breathing Green Life Into Industrial Areas' in Bellfrog Street, Greenacre. The project involved a partnership between Council and Macquarie University to road test 15 species of trees, not commonly used in a street environment, to determine which will perform well in the projected heat and environmental conditions of the future. The project is an Australia first and is funded by the Greening Our City grant program.

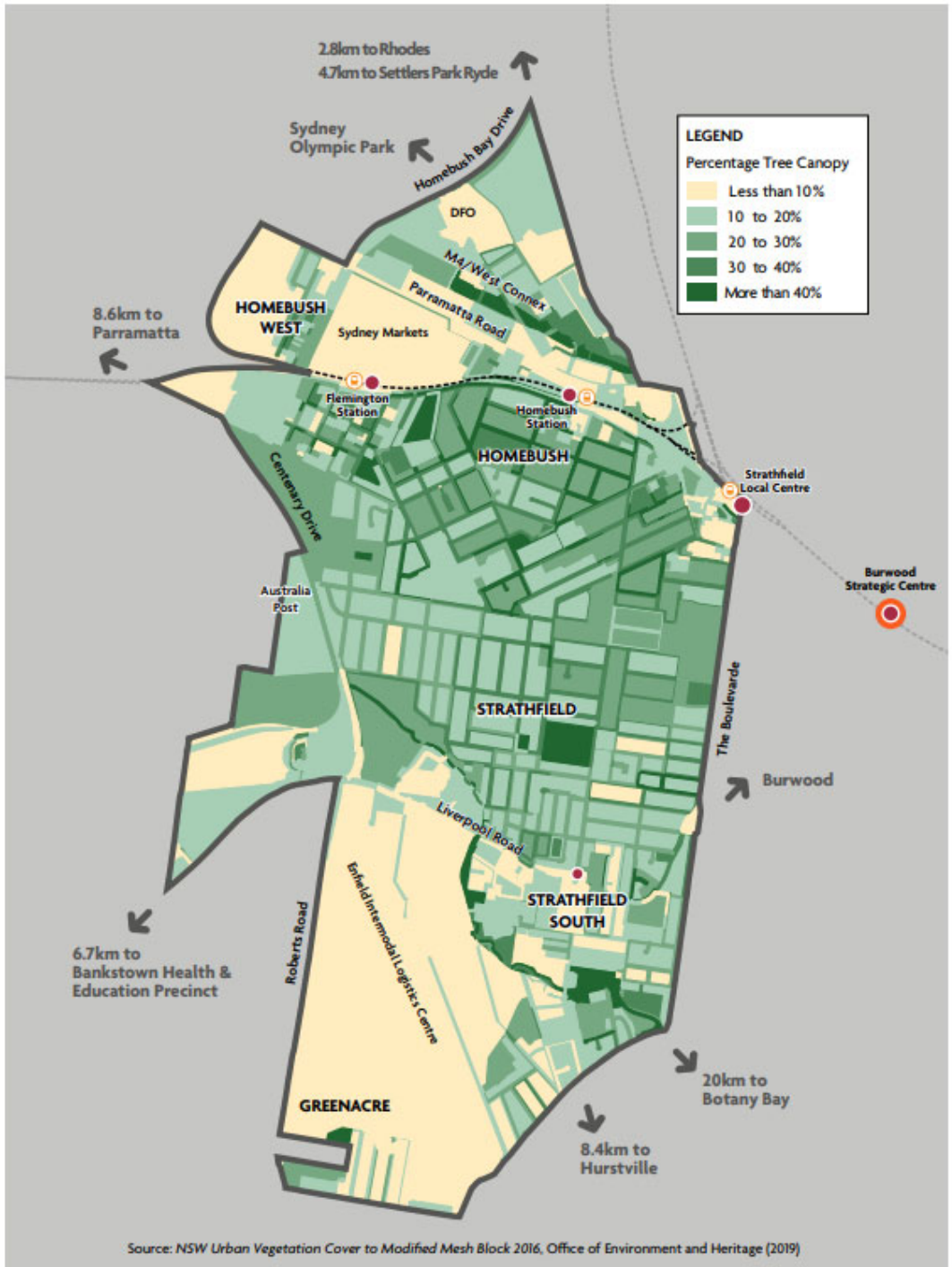


Figure 2 Tree coverage in Strathfield LGA. Source: Strathfield Council

Pollution

Pollution complaints	2019-2020	2020-2021
Noise pollution	21	55
Water pollution	31	29
Light pollution	2	0
Air pollution	23	16

Table 17 Pollution Statistics. Source: Strathfield Council

The main increase in pollution since 2019 was noise pollution with a decline in air pollution complaints. These results are likely to be in response to COVID-19 measures, which resulted in less traffic and people movement but greater numbers of people staying at home during the day for work or study. For example, the largest source of noise pollution was building sites, which permitted to operate 7 days a week with extended hours under Minister for Planning COVID-19 Orders.

Get the site right

Council has participated in the 'Get the Site Right' initiative, an erosion and sediment control blitz which was held across the Cooks River catchment. In 2020-2021 Council participated in inspections of 641 building sites. There was 73% compliance on first visit and almost \$200,000 worth of fines issues across the catchment.

Natural Environment and Biodiversity

The condition of our natural environment is largely dependent on how our land is used and managed. The topics in this theme describe the condition of our land and its ability to provide ecosystem services and suitable habitat for native species. Changes to the LGA's natural environment have affected the richness and diversity of species and ecosystems and their ability to survive. The topics in this theme describe the condition of the native species and ecosystems of Strathfield LGA and the effects of introduced species.

Biodiversity

Biological diversity, or biodiversity, is the variety of life forms in all terrestrial (land) and aquatic (water) environments on Earth. There are three levels of biodiversity:

- Genetic diversity – the variety of genetic information contained in individual plants, animals and micro-organisms.
- Species diversity – the variety of species e.g. *Eucalyptus fibrosa* (Broad-leaved Ironbark) and *Wilsonia backhousei* (Narrow-leaved Wilsonia).
- Ecosystem diversity – the variety of habitats, ecological communities and ecological processes. An ecosystem is a dynamic combination of plant, animal and micro-organism communities and their non-living environment (e.g. soil, water and the climatic regime) interacting as a functional unit, e.g. Coastal Saltmarsh.

Biodiversity is interconnected, interdependent and constantly changing. It can be increased by genetic change and evolutionary processes or reduced by threats such as habitat clearing or disease which lead to population decline and extinction.

In 2019, Council adopted the Strathfield Biodiversity Strategy and Action Plan. This document sets clear strategic intent for Council and community in protecting and improving biodiversity in Council. The 10 year strategy includes background and local context for biodiversity in Strathfield, Councils vision, biodiversity priorities and guiding principles. The action plan sets relevant high level actions within four key focus areas; vegetation and habitat, waterways and water bodies, green and blue grid connections, and Council and community roles.

Maintaining native vegetation in good condition is critical to the survival of the species and ecosystems that depend on it for habitat. As a developed urban area, most of Strathfield LGA was cleared of its original land which has resulted in fragmentation. There is currently 9.06 hectares of remnant bushland across the Strathfield LGA, which is less than 1% of the LGA's total area. Most of the bushland is in isolated remnants, surrounded by housing, parks, sporting fields, shops and industrial estates.

Vegetation surveys commissioned for the 2019 Biodiversity Strategy confirmed the presence of four different remnant vegetation communities, native creek plantings and native/exotic plantings in streetscapes and public reserves. The diversity of natural areas and biodiversity in the Strathfield LGA was most surveyed in 2016 and recorded 94 different animal species, mostly woodland birds.

Key locations in the LGA for the natural environment include Mason Park Wetlands, Coxs Creek Reserve and Greenacre Frog Ponds. Biodiversity or wildlife corridors are primarily located along the Cooks River/Coxs Creek in Strathfield and Strathfield South. Plans of Management were adopted in 2020 for Council owned community land, including a plan for the Cooks River natural areas and Greenacre Frog Ponds.

Many of Strathfield’s plants and animals are currently threatened with extinction and areas listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 2016. Efforts to protect species and ecosystems are focused on threatened species as these are at the greatest risk of extinction.

The survival of threatened species is impacted by threatening processes. The main threats are the clearing and disturbance of native vegetation and invasive pests and weeds. As the effects of climate change become more pronounced these will increasingly impact on species’ capacity to adapt and survive.

Threatened native plants in Strathfield LGA include:

- *Pomaderris Prunifolia*
- *Wahlenbergia multicaulis* (*‘Tadgell’s Bluebell’*)
- *Acacia pubescens* (*Downy Wattle*)
- *Wilsonia Backhousei* (*Narrow-leafed Wilsonia*)

Threatened native fauna in Strathfield LGA includes:

- Grey-headed Flying-Fox
- Large Bent-wing bat
- Green and Golden Bell frog

Vegetation Communities in Strathfield LGA include:

Vegetation communities	BC Act status	EPBC Act status	Approximate area (ha)	Area as % of LGA
Castlereagh Ironbark Forest	Endangered Ecological Community (EEC)	Critically endangered ecological community (CEEC)	4.4	0.3
Estuarine Mangrove Forest	-	-	0.76	0.05
Coastal Saltmarsh	EEC	VEC	2.5	0.18
Swamp Oak Floodplain Forest	EEC	EEC	1.4	0.10
Total			9.06 ha	<=1%

Table 18 Vegetation Communities in Strathfield LGA. Source: Strathfield Council Biodiversity Conservation Strategy and Action Plan 2020-2030



Powells Creek Homebush



Figure 3 Map. Priority Diversity Areas in Strathfield LGA. Source: Strathfield Council

Invasive Species

In New South Wales, invasive species are one of the leading causes of native species decline and extinctions. They have detrimental effects on the economy through damages to infrastructure, agriculture and public amenities. Invasive species affect the aesthetic value of properties and can have adverse impacts to human and animal health.

Under the NSW *Biosecurity Act 2015* Council is recognised as a local control authority (LCA) for biosecurity matters relating to weeds. As a local control authority Council's responsibilities include, but are not limited to:

- The inspection of properties
- Assistance with weed identification
- Provision of advice on weed eradication or control measures
- Notification of the presence and dangers of invasive weeds on both private and public lands.
- Enforcement of compliance with the *Biosecurity Act 2015* in weed related matters.

Invasive animals are managed by State Government, and supported by local governments. Councils have no authority over invasive animals under the *Biosecurity Act 2015*. Strathfield Council does not currently have any ongoing control programs targeting invasive animals.

Throughout Strathfield invasive plants are present in varying levels. At locations such as Coxs Creek Bushland Reserve, there is a high level of weed presence, and is subject to ongoing control efforts. However, sites such as Mason Park and Bressington Park have a low level of weed presence.

Weeds present throughout Strathfield are generally typical of weeds found throughout the Greater Sydney region, such as Green Cestrum, Asparagus weeds, Pampas Grass and Alligator weed. Weeds determined as state and regional 'priorities' are targeted for control and enforcement. Strathfield Council does not currently have any weeds determined 'local priority'. Common weeds, such as Bamboo, Morning Glory and Privet, that are considered low risk are not targeted for enforcement, but controlled on Council managed land where possible.

New incursions of weeds that have not previously been detected are managed as an urgent priority. For example, *Salvinia (Salvinia molesta)* was detected in March 2021 at Hudson Park Lake. Eradication efforts were quickly undertaken, and all invasive plant material removed. Inspections occur every 3 months to detect and remove any regrowth.

Strathfield Council area has many vectors in which weeds can enter the LGA. We have several main roads, train lines, rivers and creeks. High risk pathway inspections are conducted on a yearly basis to detect any new incursions and initiate control efforts if needed. Sydney Flower Markets is also a way for weeds to enter the LGA, and be distributed throughout NSW, as some weed species are sold in the cut flower industry for their ornamental properties. Council conducts frequent inspections at the Markets to ensure plants that are sold are not a risk to the environment, economy or community.

Council is supported through grant funding of the NSW Weed Action Program to continue inspection and education efforts.

Water

Water Consumption

The most recent water consumption statistics for the Strathfield LGA are for the 2019-2020 financial year. The major increase occurred in the suburb of Homebush West, while there were reductions in suburbs such as Belfield, Strathfield and Strathfield South. The increase is likely attributable to increases in population and housing growth.

Water consumption in Strathfield LGA – kilolitres (kL) per suburb					
Suburb	2016-17	2017-18	2018-19	2019-20	Status
Belfield	121,181	131,870	123,045	114,498	Down ↓
Greenacre	437,121	386,445	399,792	354,785	Down ↓
Homebush	1,118,817	1,185,991	1,214,687	1,258,955	Up↑
Homebush West	746,991	751,809	754,682	1,007,155	Up↑
Strathfield	1,954,239	2,209,097	2,097,060	2,028,069	Down ↓
Strathfield South	575,144	595,713	598,053	574,242	Down ↓
TOTAL	4,953,494	5,260,927	5,187,321	5,337,706	Up↑

Table 19 Water Consumption data. Source: Resilient Sydney platform utilising Sydney Water Data

During 2020-2021, use of water in Council facilities including parks and sports fields totalled 24,457kL, which was a reduction of over 10,000kL from the previous year. This result is partly due to impact of COVID restrictions which reduced use of sportsfields, however there has been a general reduction in water use in Council facilities since 2018-2019. This is mainly attributable to reductions of water use in key facilities such as Hudson Park, which was converted from a golf course to a park. Hudson Park Golf Course recorded monthly water usage in June 2018 of 3422kL and in June 2021 recorded 160kL. The June 2021 occurred during a lockdown period, however overall this indicates a significant potable water saving from the park's change of use.

Strathfield Council Facilities – Water Consumption		
Year	Consumption (kL)	Status
2016-2017	68,653	-
2017-2018	76,984	Up↑
2018-2019	66,284	Down ↓
2019-2020	35,011	Down ↓
2020-2021	24,457	Down ↓

Table 20 Azility Management Water usage statistics 2016-2021

Healthy river ecosystems comprise rivers, their riparian zones, floodplains and wetlands. They are vital to aquatic and terrestrial biodiversity, but also to support human economic and recreational activities.

In 2020, Council commenced monthly testing of local waterways. Testing assists in determining the health standards of ecosystems and spot samples for pollution and algae blooms. Testing has been conducted at the following sites: Cox's Creek Reserve, Cox's Creek (Chisholm St), Cooks River (Yarrowee Wetlands), Saleyards Creek (The Crescent), Saleyards Creek (Bressington Park), Powells Creek (Pomeroy St) and the new Hudson Park Lake. Currently, there are insufficient samples available to report with accuracy on trends. Water quality tests are also undertaken to determine pollution levels and rates of littering and dumping relating to specific events.

Sydney Water naturalised a large section of Powells Creek near Mason Park Wetlands. The foreshores planted to re-instate the riverbank improving biodiversity and appearance of the creek and its foreshores.

Council operates a three weekly cycle of street sweeping services to stop leaf and other litter flowing into rivers. Services also operate more frequently as required eg seasonal leaf drop periods, heavy leaf litter and emergency operations.

Council supported regional projects for healthy urban ecosystems and waterways through participation in the Cooks River Alliance. This partnership has been critical to the collaboration of catchment Councils on shared issues. Working together under the Cooks River Alliance increases the efficiency of projects, for example the 'Get the Site Right' erosion and sediment blitz, by allowing resources and knowledge to be shared amongst the group.

The transformation of Hudson Park from a golf course to a district park has installed a range of sustainability features. The park has installed a 2.6 million litre lake with on-site retention basin to collect water from the site and from the wider catchment to perform the valued process of treating pollutants and improve water health and a 192,000 litre water tank to ensure self-sufficiency of water for the park during periods of reduced rain fall events. These projects are complimented by landscaping, tree planting and solar efficient lighting throughout the park.

Wetlands

Wetland ecosystems support high levels of biodiversity. They provide habitat for a wide range of animals including waterbirds, fish and frogs. However, condition of the wetlands are under pressure due to water diversion and availability, changing river and tidal flows and surrounding land uses. The morphology of waterways in the Strathfield LGA has changed since European settlement, either by natural processes, accelerated sedimentation and erosion, or reconfiguration and concrete lining. Channels and catchments have increased the peak runoff velocity and volumes and decreased low flow volumes.

Mason Park Wetland is located adjacent to Powells Creek, which drains to Parramatta River. Mason Park contains Strathfield LGA's most significant wetland at over twelve hectares in size. The wetland consists of a saltmarsh, mangrove forest and small freshwater pond. The park lies in an irregular triangle formed by the arms of two canalised creeks, Saleyards and Powells Creeks, which drain north into Homebush Bay. Directly to the north is Bicentennial Park and Olympic Park. Long established residential and industrial land occupies most of the surrounding land in North Strathfield, Concord and Homebush.

Mason Park wetland is listed on the former Register of the National Estate as one of eight significant remnant wetlands which were once part of an extensive wetland system bordering the Parramatta River. Mangroves of the Parramatta River area represent a significant proportion of the mangroves remaining in the Sydney region.

The main riparian corridor to the south of the Strathfield LGA is the Cooks River/Coxs Creek. An artificial wetland is located at Yarrowee Wetland in Freshwater Park near the Cooks River.

Waterways in the LGA experience poor water quality, invasion of aquatic weeds and pest species (e.g. Mosquito fish - *Gambusia holbrooki*), rubbish dumping and loss of riparian vegetation. This impacts aquatic species (e.g. through fish kills) and reduces the amenity and value of surrounding properties

and public spaces. Poor waterway health can also affect downstream waterways such as the Parramatta River.

Community consultation was undertaken in 2020-2021 to guide preparation of a new Plan of Management for Mason Park. It is expected the draft plan will be exhibited in 2022, once approved for exhibition by Crown Lands, as part of Mason Park is located on Crown Land.



Engagement and Sustainability programs

Engagement and educating the Strathfield community about sustainability is important to raising community awareness of better practices to address environmental issues.

Programs aimed at increasing community engagement with sustainability included:

- Council's Bushcare program, which operates with community volunteers who assist with new and replacement plantings and natural area maintenance in natural areas. Activities were focused at Cocks Creek Bushland Reserve (Greenacre), which contains the threatened ecological community of Cocks River/Castlereagh Ironbark Forest, at Mason Park Wetlands (Homebush) a remnant wetland complex of she-oaks, mangroves and saltmarsh fringe the mudflats, debris islands, and shallow open water and Elliott Reserve (Belfield).
- Volunteer based programs to assist with weeding, planting, seed collection and removal of litter from sites such as National Tree Day and School Tree Day.
- To promote active travel, a new event the Cocks River Family Fun Ride was launched involving a public bicycle ride event along a short public shared footpath/cycleway.
- Council participated in Responsible Café program that promotes use of reusable cups to reduce plastic and litter from disposable cups.

Council developed programs to improve sustainability and resource efficiency which included:

- Contaminated waste was reused and converted into a sound wall at Hudson Park to reduce noise from nearby regional roads, resulting in major cost savings and waste conversion.
- 99% of street lights installed before 2009 were replaced with LED lighting, which uses 78% less power than the legacy luminere lights. This is a substantial saving as street lighting is Council's largest power use and cost.
- Installed solar panels at Strathfield Library and to power CCTV units. Solar efficient lighting installed in parks such as Hudson Park.
- Produced significant water savings from conversion of Hudson Park from a golf course to a district park.
- Installation of a 2.6 million litre lake in Hudson Park with on-site retention basin to collect water from the site and from the wider catchment to treat pollutants and improve water health.

Developing partnerships, alliances and community programs to promote and protect the environment, which included:

- Worked in collaboration with Cocks River Alliance and its partners in developing strategic plan for catchment
- Initiated new industrial area tree program in 2020-2021 in partnership with Macquarie University to trial street trees capable of thriving in difficult conditions. A total of 180 trees were planted in the demonstration trial.
- Concurrent with the naturalisation of Powells Creek by Sydney Water at Homebush in 2018, re-instated plantings to improve biodiversity and appearance of the creek and its foreshores (Ismay Reserve).

Environmental awards

A number of Strathfield Councils environmental programs have been recognised and awarded over the term.

2020: Winner

Greater Sydney Commission Awards (presented by the Greater Sydney Commission)
Hudson District Park – Strathfield Council - *Great new place to live and/or work*

2020: Winner

Keep Australia Beautiful Awards (presented by Keep Australia Beautiful)
Restoration of Halloween House – Strathfield Council – *Heritage and Culture*

2020: Highly Commended

Keep Australia Beautiful Awards (presented by Keep Australia Beautiful)
Strathfield Car Park CDS – Strathfield Council – *Return and Earn Litter Prevention Awards*

2020 Finalist

Local Government Excellence Awards (presented by Local Government Professionals Australia:
Environmental Leadership Award – Sustainability for all

2021 Winner

Local Government Excellence Awards (presented by Local Government NSW)
Natural Environment Protection and Enhancement: on-ground works – Division B
Strathfield Council: *Bring back the Bellfrog*

2021 Highly Commended

Local Government Excellence Awards (presented by Local Government NSW)
Behaviour Change in Waste – Division B
Strathfield Council: *Don't be a tosser*