



STATE OF THE ENVIRONMENT REPORT



LIVERPOOL
CITY
COUNCIL 

STATE OF THE ENVIRONMENT REPORT

Introduction

A State of the Environment (SoE) Report is an important tool that provides the local community and Council with information on the condition of the environment in the Local Government Area (LGA).

Councils are no longer required to produce an SoE Report each year. They are now developed once every four years as part of the Annual Report in the year of a Council election.

This SoE Report is consistent with the NSW Department of Local Government's Integrated Planning and reporting model guidelines.

The Report will explore Council's progress in implementing the environmental objectives listed in the [Community Strategic Plan](#) based on the following themes:

- Biodiversity;
- Biosecurity;
- Water;
- Climate and Energy;
- Waste and Resource Recovery; and
- Community Education & Engagement.

Measure of Progress

Measures of progress allow reporting on actions that Council and the community have completed in response to the impacts and condition of the environmental sector.

For further information on Council's Environmental Sustainability performance indicators, including outcomes and service indicators, refer to Council's Delivery Program 2017-2022 and Operational Plan 2020-21 and Budget under Direction Strengthening and Protecting Our Environment.

Community Strategic Plan

STRENGTHENING AND PROTECTING OUR ENVIRONMENT

Council's direction to strengthening and protecting our environment is based on the environmental (natural and built) aspect of the quadruple bottom line and covers actions that include waste management, urban design, planning and protecting of specific environmental features. The five strategic objectives that are considered essential in strengthening and protecting our environment are:

- Manage the community's disposal of rubbish;
- Protect and enhance bushland, rivers and the visual landscape;
- Encourage sustainability, energy efficiency and the use of renewable energy;
- Exercise planning controls to create high-quality, inclusive, urban environments; and
- Develop and advocate for plans that support safe and friendly communities.

Our Principles for Sustainability

Liverpool City Council has defined sustainability as 'a change in approach to civic leadership and decision-making whereby environmental, economic and social-cultural considerations are equally embraced for the well-being of present and future generations.' Council has a legal duty to reduce its environmental impact, to both manage operating costs and to act as an example for the community.

Achieving this duty has taken many forms, from creating relevant policies, to retrofitting and remediation, through to monitoring and reporting. Council's SoE report outlines many of these projects and the results they achieved. As a place undergoing enormous change, Liverpool requires leadership and decision-making to simultaneously deal with current imperatives and stay focused on the legacy for future generations.

Environment Restoration Plan (ERP)

The Environment Restoration Plan is a major Council initiative that spans several key themes. The ERP program provides a framework for the delivery of key environmental projects and programs for the long term benefit of Liverpool and its community, funded by Council's Environment Levy permanent special rates variation.

The Environment Restoration Plan identifies environmental projects, programs, and an on-ground work that build on Council's core business, to help improve the natural environment of Liverpool by:

- Protecting and restoring Liverpool's local endangered ecological communities and other natural areas;
- Building community networks and partnerships;
- Delivering environmental education to the Liverpool community;
- Supporting environmental projects across Liverpool;
- Installing fencing and access paths for environment protection; and
- Improving the city image.

Themes

1 BIODIVERSITY

Introduction

Biodiversity is the variety of life on the planet, and includes species, ecosystems and genetic diversity. Biodiversity maintains our way of life and contributes to the liveability of our towns and cities. Impacts to biodiversity can result from pressures including increased fragmentation of habitat areas; pest species of plants, animals and other organisms; and incompatible land management practices.

Strategic Guidance

LIVERPOOL'S BIODIVERSITY 2019

Council's decision making regarding biodiversity has been informed since 2003 through various strategic documents. These biodiversity documents have been accompanied by vegetation mapping, and are generally updated every four years.

The most recent strategic document, Liverpool's Biodiversity 2019, was produced to help inform the

Local Environment Plan (LEP) review being undertaken by Council. The update included vegetation mapping across the LGA, a revised overview of biodiversity values and guidance for the application of planning controls such as the use of environmental zones.

Initiatives

NATURAL AREA MANAGEMENT

As part of the operational management of natural areas, Council has adopted two long-term projects for delivery, focusing on high priority catchments. These are:

- Cabramatta Creek in Edmondson Park; and
- Hinchinbrook Creek in Cecil Hills.

Starting at the top of the creek catchments, the scope of these projects is:

- weed control and removal;
- soil stabilisation;
- revegetation of local native species; and
- litter collection.

The scope of works will vary subject to individual site constraints.

ERP ECOLOGICAL RESTORATION PROJECTS

Council's ERP program currently includes the delivery of eight ecological restoration projects, with the aim to improve biodiversity outcomes in natural areas. Sites are identified and prioritised based on their conservation significance.

The scope of work for these projects includes: weed control and removal, soil stabilisation, planting of locally native plants, and litter collection. Environmental Restoration works are currently in progress at many locations around Liverpool.

Current projects are:

- Lake Moore (Chipping Norton);
- Brickmakers Creek – Freemans Oval (Warwick Farm);
- Starr Park (Austral);
- Lieutenant Cantello Reserve (Hammondville);
- Rossmore Grange (Rossmore);
- Glenn Regent Reserve (Casula);
- Casula Parklands (Casula); and
- Hibbertia Translocation Project (Voyager Point, Chipping Norton, Kemps Creek).

Past project areas receive ongoing maintenance by the ERP Bush Regeneration teams.

Outcomes & Trends

Council is making continual progress towards increasing the area of bushland being regenerated, improving the condition of degraded creeks and increasing the amount of native trees planted to improve the environment of Liverpool for its residents.

In the last financial year:

- Over 185 ha of natural areas are being regenerated;
- 3300+ native plants are being planted; and
- 64m³ of litter was removed from bushland.

2 BIOSECURITY

Introduction

Biosecurity refers to the measures identified to prevent the introduction and spread of harmful organisms, whether it is plants, animals or disease. In doing so, we are protecting the economy, environment and health from the negative impact of pest species.

Council is required to undertake a range of biosecurity functions including management of priority weeds on Council land, inspection of all land within the Liverpool LGA and reporting of all infestations and pest treatments. Council works with the Department of Primary Industries, Local Land Services and a range of other stakeholders to coordinate pest management at a regional scale.

Strategic Guidance

At a statutory level, the biosecurity functions of Council are defined by the Biosecurity Act 2015 and the Biosecurity Regulation 2017. Regional plans identify priority pests at a regional level and identify management actions for their effective control.

Initiatives

PRIORITY AQUATIC WEED PROGRAM

The annual program has been undertaken across the LGA, including on the Georges River and within the Cabramatta Creek catchment. The program involves the surveillance, management, and control of the following high risk weeds:

- *Salvinia (Salvinia molesta)*;
- *Water Hyacinth (Eichhornia crassipes)*;
- *Alligator Weed (Alternanthera philoxeroides)*; and
- *Ludwigia (Ludwigia peruviana)*.

INSPECTION OF HIGH RISK PATHWAYS & SITES

One of the key biosecurity functions to stopping the spread of pest species is the regular surveillance of high risk pathways and sites, where the risk of weed incursion and spread is greater. This includes main roads, boat ramps, development sites, agricultural land, dams and wetlands, and other high risk sites. Regular inspection is necessary to ensure early detection and control of high risk, priority weeds.

INVESTIGATION OF ILLEGAL PLANT SALES

The sale of prohibited plants online is a growing biosecurity issue. Council is required to undertake investigations on the sale of priority weeds on sites such as Gumtree and Facebook. As part of the process, Council is required to seize and destroy any restricted plants found.

KEI APPLE GRANT PROJECT

Council leveraged additional funding through the NSW Weed Action Program for the surveillance and control of Kei Apple (*Dovyalis caffra*) in Austral and Kemps Creek. Kei Apple represented a new biosecurity incursion in the area, and its eradication is considered a priority in Western Sydney due to the high risk of spread.

The grant project involves the inspection of public land and private properties within known infestations. Any emerging Kei Apple plants found are treated by contractors, and their location recorded for subsequent monitoring. The project repeats on a 3-year cycle, as this period allows plants to reach sufficient maturity to be easily identified and treated without having reproductive capacity.

FROGBIT INCURSION

Frogbit (*Limnobium laevigatum*) is an aquatic weed that emerged in the Georges River and South Creek catchments in 2020. Frogbit is highly invasive aquatic weed with limited distribution in NSW. As such, there is an eradication target on the species in this region.

Council staff and contractors undertake routine inspection of Council's waterways for Frogbit. Identified infestations are contained with floating booms, treated and regularly monitored. Council is working with neighbouring land managers and private land holders to contain the spread of the species and eradicate it from our region.

BONESEED MANAGEMENT

Boneseed (*Chrysanthemoides monilifera*) only occurs at present on the eastern side of Liverpool and has limited distribution. This is a priority weed within Sydney and has a containment target.

Outcomes & Trends

Frogbit incursion in the LGA saw a collaboration with neighbouring Councils, Local Land Services and private property owners working together to address the threat. There has been a positive outcome with the identification of additional incursion locations and agreed actions for treatment. Initial treatments have been successful with the reduction in the Frogbit populations found. Continued monitoring of the locations and follow up treatments will continue as required.

3 WATER

WATER CONSERVATION

Introduction

Australians are among the highest water users in the world (source: www.stastita.com), making water efficiency a vital challenge for NSW. Local Councils across the state have been given the task of helping to maintain and where possible improve water efficiency, for both their organisations and the community.

Liverpool City Council manages a large property portfolio. Currently over 236 water meters track water delivered to Council's 400+ parks and 236 buildings.

Council is committed to reducing the environmental impact of its facilities and activities, conserving resources and leading by example.

Strategic Guidance

WATER EFFICIENCY PLAN AND AUDITS

Liverpool City Council's [Water Efficiency Plan 2012](#) and recent site-specific water audits provide a list of practical water saving measures across key water using facilities. These resources have informed many initiatives over the last five years, as outlined below.

Initiatives

WATER CONSERVATION RETROFITS

Water efficiency related actions focus on Council's top 10 water using facilities. Council's water uses range from filling public pools and irrigating parks to flushing public toilets, with Council's parks and reserves using the majority of water consumed. On a per site basis, Council's aquatic leisure centres are the largest consumers of water.

The list of major water users has varied over time and will continue to do so as facilities grow and change.

Focussing on key water using facilities will enable Council to direct resources to where they will be of most benefit. The following examples illustrate some of the work done by Council over the last five years.

LEISURE CENTRES WATER EFFICIENCY RETROFIT

Water saving works were completed at Council's major leisure centres including the Whitlam Leisure Centre and Michael Wenden Aquatic Centre.

a. Whitlam Leisure Centre

The Whitlam Leisure Centre contains an aquatic centre, stadium, fitness centre and function facilities. The following retrofits have been made:

- Change in operating practices to reduce the frequency of backwashing and water consumption;
- Replacement of hydrostatic valves and expansion joints at Whitlam Leisure Centre;
- Filtration facilities for the recycling of pool backwash water and rainwater harvesting initiatives; and
- The upgrade of UV filtration systems to reduce combined chlorine levels and the subsequent requirement for backwashing.

b. Michael Wenden Aquatic Centre

The Michael Wenden Aquatic Centre is an aquatics and leisure facility that consists of a seasonal 50m outdoor pool, water play park, indoor pool and dry recreation facilities. The following water efficiency initiatives were undertaken:

- Change in operating practices to reduce the frequency of backwashing and water consumption;
- Retiling of the indoor pool to reduce water leakage/loss; and
- Review of structural integrity of the pool shells and balance tanks, inspection of all expansion joints for leakage and cracking and ad hoc repairs as required.

NEW AMENITIES

Best practice water saving initiatives are incorporated into all new building amenities for reduced water usage. This includes the provision of Water Efficiency Labelling and Standards (WELS) rated fixtures, fittings and appliances into new amenities. All water fittings and fixtures are a 6 Star highest WELS. Examples include the recent upgrades with water efficiency tapware, fixtures and fittings to kitchens, bathrooms to reduce water demands of the Wattle Grove, Hinchinbrook, Casula and Liverpool Community Centres.

Outcomes & Trends

Council's overall water consumption for the 2020-21 financial year was approximately 230ML at a cost of \$755,000. Organisation-wide water consumption decreased by 17% compared to the 2016-17 financial year as a result of water saving initiatives being installed at Council facilities.

At the end of FY 20-21, Council's top 10 water using sites accounted for 58% of organisation-wide water consumption. Council's leisure centres, including the Whitlam Leisure Centre and Michael Wenden Aquatic Centre, account for the top three water consuming sites accounting for 28% of the total water usage.

COUNCIL'S WATER CONSUMPTION FIGURES OVER THE LAST 5 FINANCIAL YEARS

FINANCIAL YEAR	WATER USAGE (KL)	WATER TOTAL COST (\$)
2016-2017	279,375	\$822,424.00
2017-2018	394,258	\$1,113,072.00
2018-2019	308,758	\$889,955.00
2019-2020	207,605	\$666,177.00
2020-2021	230,557	\$754,918.00
TOTAL	1,420,553	\$4,246,546.00

WATER QUALITY

Introduction

The LGA is traversed by two major river systems, the Georges River and the Nepean River, and many of their tributary creeks and waterways systems. Waterways are under pressure from past and existing developments, catchment disturbance and hydrological modification, land use transformation and large-scale vegetation changes.

The population of Liverpool is undergoing significant growth as a result of major infill developments, new urban release areas and the Western Sydney International (Nancy-Bird Walton) Airport. The projected growth and associated development will produce significant pollution loads into waterways.

Strategic Guidance

WATER MANAGEMENT POLICY 2016

The Water Management Policy seeks to provide a proactive response to the development pressures and aims to protect the aquatic ecosystems, the water resources and to minimise the impacts of urban development on the urban water cycle.

The Water Management Policy sets standards for the management of all aspects of the water cycle in a holistic and coordinated way. The Policy provides clear directions for water management and defines the key principles that will underpin water management in the LGA.

WATER MANAGEMENT STRATEGY 2016

To ensure policy objectives and principles are achieved, Council's Water Quality Management Strategy provides high level actions that will, over time, build water management capability to facilitate the achievement of Council's overall objectives and principles contained in the Water Management Policy. The Strategy will translate these principles into deliverable actions and targets through a Water Management Improvement Action Plan.

GEORGES RIVER COASTAL ZONE MANAGEMENT PLAN 2013

The Georges River Coastal Zone Management Plan (CZMP) provides a strategic framework and action plan for the future management of the Georges River Estuary. The plan aims to conserve and improve the existing natural environment of the estuary and improve water quality of the estuary. The Plan covers all estuarine water of the Georges River, from Towra Point to Liverpool Weir. The Plan has been adopted by participating Georges River Combined Council Committee (GRCCC) member Councils, including Liverpool.

Initiatives

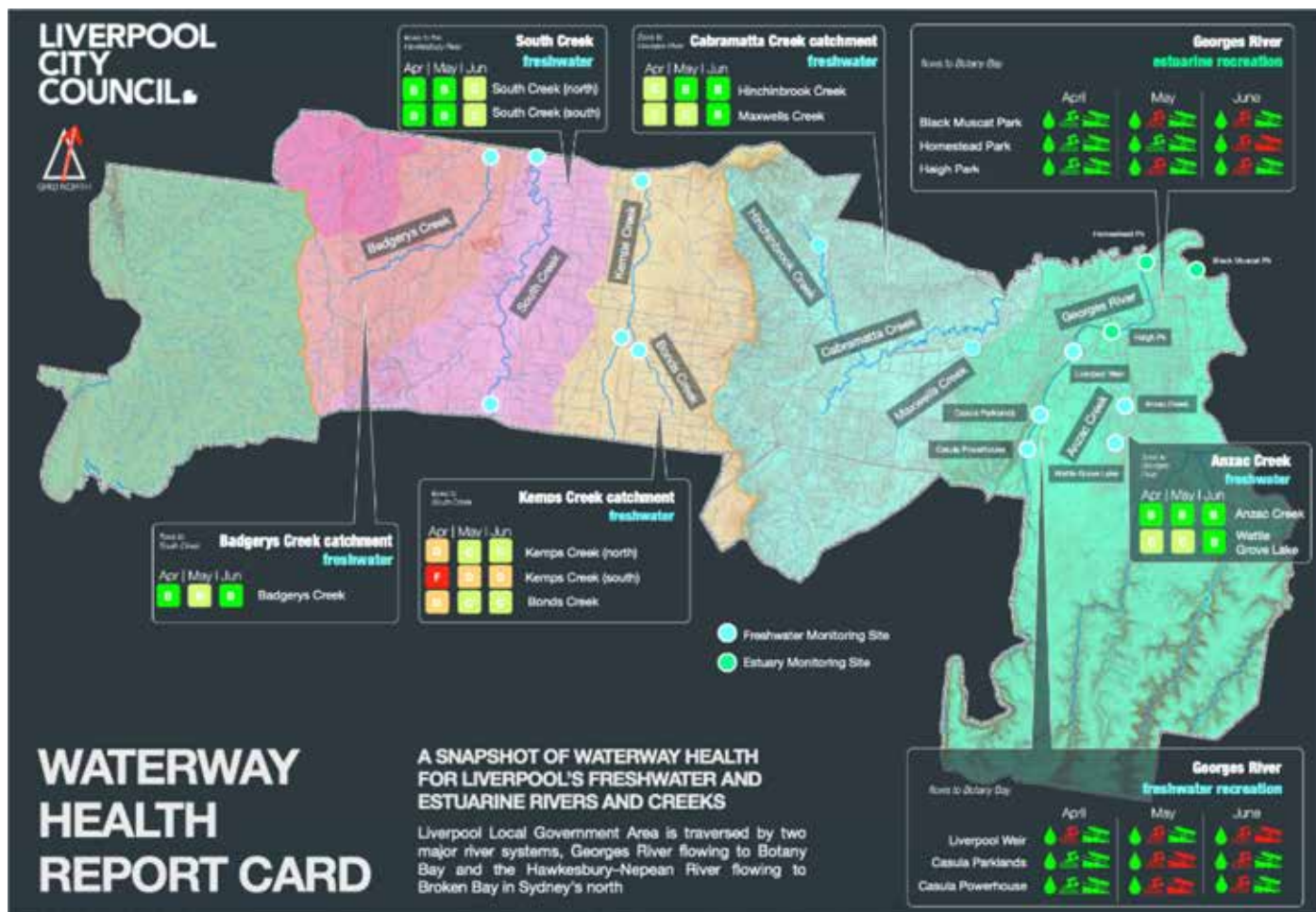
GROSS POLLUTANT TRAP (GPT) MASTER PLAN – NEW GPTS

New GPTs are being progressively constructed under the capital works program. Over the past four years between 2017 to 2021, a total of eight GPTs (including underground systems and trash racks) and 10 net type gross pollutant traps have been installed at various locations across the Georges River catchment areas.

ROUTINE WATER QUALITY MONITORING

Council has initiated routine water quality monitoring at 21 strategic locations in the Georges River and

South Creek waterway system. A quarterly Waterway Health Report Card has been developed and is available on Council's website to illustrate the water quality of the creeks and rivers.



WATER QUALITY MONITORING - RIVER HEALTH MONITORING PROGRAM

Georges Riverkeeper (GRK) is the business name of GRCCC. Formed in 1979 by councils with a collective responsibility for the health of the Georges River to work together to improve its environmental condition and ongoing management. The River Health Monitoring Program is coordinated by the Georges Riverkeeper and is funded by its member councils. Member councils include Bayside, Campbelltown City, City of Canterbury Bankstown, Fairfield City, Georges River, Liverpool City, Sutherland Shire and Wollondilly Shire.

Georges Riverkeeper's River Health Monitoring Program collects environmental data to guide waterway management and inform the community about the condition of waterways across the catchment. The Program applies scientifically rigorous methods to the assessment of freshwater tributaries and estuarine sections of the Georges River.

The Georges River starts near Appin, approximately 60km south-west of Sydney, and then flows north towards Liverpool, and then east into Botany Bay. The catchment covers an area of approximately 960km² and is one of the most highly urbanised catchments in Australia with over 1.2 million people living within it. Throughout the catchment, water quality, riparian vegetation and macroinvertebrates are monitored to provide a 'snap-shot' of catchment health in the form of a Report Card.

The Report Card presents the results from monitoring over a 12-months period for both the freshwater sub-catchments and the estuarine part of the Georges River. It is based on a catchment scale assessment of three river health indicators: water quality, vegetation along riverbanks and macroinvertebrates. The results provide an indicative condition of the site at the time of sampling.

The GRK member councils use the results of river health monitoring data and identify areas where

investments in stormwater and environmental restoration can be of most benefit to improve water quality and vegetation along the riverbanks. The program is an instrument to drive community action and on ground works to protect and improve the Georges River.

In addition to the River Health Monitoring Program, GRK also facilitates programs such as:

- Catchment Actions Programs (litter collection and bush rehabilitation);
- Education and Capacity Building Program (development of education materials to deliver information to the community);
- Research Program (research facilitated by academic partners to help with developing best practice management of urban waterways); and
- Stormwater Program (best practice stormwater, flood and coastal management).

In addition to the above, Council has adopted the Water Management Policy and Water Quality Management Strategies with the aim to integrate the thinking of water sensitive urban design (WSUD) principles into the Council businesses and developed the WSUD guideline. This will also assist to improve the water quality entering our creeks and waterways.

Outcomes & Trends

The primary threats to ecological health of the river are urban stormwater runoff, loss of vegetation and industrial discharge including sewage wastewater. A high degree of urbanisation within the lower and middle Georges River catchment has resulted in a loss of vegetation and an increase in hard surfaces (concrete and bitumen), resulting in an increase in nutrient and pollution enriched stormwater entering the river. In addition, increased industrial and residential pressure contributes to erosion and the loss of biodiversity along the riverbanks.

The GRK *State of the Georges River 2020* report, gives the health of the Georges River an overall "B-" grade for the freshwater part of the river, and an overall "A" grade for the estuary. Where the river flows through forested areas in the upper catchment, it is in very good health. In the middle, more populated and developed areas of the catchment, the health of the river is degraded by impacts of urbanisation, and in the lower estuarine catchment, the tidal influence has a positive impact on the health of the river.

The health of the Georges River marginally improved when compared to the previous reporting year, most likely due to fewer severe weather events negatively impacting water quality.

Highly urbanised areas of the Georges River catchment continue to be impacted by stormwater runoff and degraded vegetation along the river banks, which is reflected in the grading reported in the *State of the Georges River 2020*.

4 CLIMATE AND ENERGY

Introduction

With both energy costs and population density rising dramatically in recent years, resource management has become a key factor in the growth and development of Liverpool. Energy is embodied in all the goods and services used by Council. Any attempt to reduce Council's environmental impact necessarily includes addressing energy use.

Liverpool City Council's energy efficiency actions are primarily linked to areas for which Council has direct control, that is energy management such as retrofits at Council facilities.

Strategic Guidance

LIVERPOOL CITY COUNCIL ENERGY MANAGEMENT PLAN AND AUDITS

Liverpool City Council's [Energy Management Plan \(2012\)](#) and site-specific energy audits provide a list of practical energy saving measures for key energy using facilities.

Council also developed a Sustainable Resilient Liverpool Strategy in 2020, encompassing key strategic directions including a focus on climate resilient energy supply and zero carbon. The development of a Climate Action Plan has recently been initiated, which is anticipated to include energy efficiency strategies to move towards net zero emissions across Council operations.

Initiatives

ENERGY EFFICIENCY RETROFITS

Council's decision-making regarding energy initiatives is guided by comprehensive energy audits of Council's assets in April 2020, and its Energy Management Plan which has focused upon Council's top 10 energy using facilities. These sites include Council's administration building, leisure centres, libraries and community centres. The following examples illustrate some of the work done by Council over the last five years.

WHITLAM LEISURE CENTRE

In previous years the Whitlam Leisure Centre had a major heating, ventilation and conditioning system (HVAC) renewal for the entire centre. The HVAC renewal has led to a 30% increased efficiency across three major areas being the main centre hall, gym, multipurpose room, the stadium and the indoor pool hall.

These initiatives are leading to energy cost savings of 15% compared to the previous year.

The following energy savings initiatives were undertaken in the last financial year, with the outcome of these initiatives to be determined in the next financial year:

- Upgrade of stadium lighting to a more energy efficient system;
- Replacement of hydrostatic valves and expansion joints;
- Replacement of indoor pool hall lighting to energy efficient units;
- Replacement of gas heating system; and
- Change in operating practices to reduce the frequency of backwashing, energy and water consumption.

MICHAEL WENDEN AQUATIC CENTRE

The following energy efficiency initiatives were undertaken:

- Change in operating practices to reduce the frequency of backwashing and energy consumption; and
- Replacement to an energy efficiency HVAC system.

CHILDCARE CENTRE HVAC AND AIR QUALITY PROJECT

The HVAC systems have been upgraded at Council owned and operated childcare centres, Liverpool Regional Museum, Liverpool Respite Centre and Cecil Hills Children's Centre.

SOLAR PANEL INSTALLATION AT CHILD CARE CENTRES

Solar panel Photo Voltaic (PV) systems were installed at Council's childcare and community centres, including Preston Childcare Centre, Casula Childcare Centre, Chipping Norton Community Centre and Casula Parkland Amenities Building.

SOLAR PANEL DESIGN AND INSTALLATION AT COUNCIL'S DEPOT ADMINISTRATION BUILDING

Following from the energy audits undertaken in 2020, a 42 kW roof-mount solar PV system with 20kWh inverter was installed at Council's Rose Street depot building in April 2021. The new solar system will reduce the running costs for the HVAC system and operational lighting systems which is anticipated to result in a cost savings of approximately \$15K per annum, with a payback period of 3.5 years.



STATE OF THE ENVIRONMENT REPORT 2021

The main solar energy installations completed since 2011 for Council buildings are included in the following table.

YEAR	COUNCIL BUILDING	SOLAR PANEL SYSTEM SIZE
2011/12	City Library	10kW
2013/14	Hinchinbrook Childcare Centre	8kW
2013/14	Wattle Grove Childcare Centre	8kW
2015/16	Warwick Farm Childcare Centre	8kW
2015/16	Cecil Hills Childcare Centre	8kW
2015/16	Green Valley Community Centre	8kW
2015/16	Moorebank Community Centre	8kW
2016/17	Holsworthy Childcare Centre	10kW
2016/17	Casula Childcare Centre	5kW
2016/17	Wattle Grove Community Centre	5kW
2016/17	Chipping Norton Community Centre	10kW
2017/18	Preston Childcare Centre	8kW
2018/19	Casula Parkland Amenities Building	5kW
2021	Rose Street Depot	42kW

SOLAR LIGHTING TO OPEN SPACE

To increase amenity and visibility of open space, solar lighting was installed across eight public parks, playgrounds and pedestrian accessway sites in the last year. This initiative included the installation of solar lighting in parks and playgrounds at the Casula Powerhouse Arts Centre, Cecil Hills, Miller Park and Sid Neville Park.



POWER PURCHASE AGREEMENT

Council's new energy supply agreement, commencing on 1 July 2022, will result in an increase of clean Renewable Energy from 20% to 70%. Current electricity forecast, which includes the construction of Civic Place and the retrofit of street lighting will result in Council savings in excess of \$725,000 over the initial 5 year contract term. Under the new contract, feasibility assessments will be performed, in consultation with the Green Energy Regulator, to launch new capital works that qualify for Large Generation Certificates (LGC's) within the LGA with a view of increasing clean Renewable Energy consumption from 70% to 100%.

STREETLIGHTING REPLACEMENT

Council currently has over 18,700 street lights of which approximately 40% have LED lamps. Of the existing LED street lights, approximately 25% were replaced under a Western Sydney Regional Organisation of Councils (WSROC) coordinated "Street Light Ahead" program, partially funded by both State and Federal Governments. This has led to a yearly cost savings of approximately \$100,000 and a reduction of 120,750 tonnes of carbon dioxide (CO₂).

In addition, in partnership with Endeavour Energy, Council's local street light service provider, the remaining 60% of street lights are planned to be replaced with LED lamps. This is expected to result in a carbon dioxide reduction of 2,920 tonne per annum, and annual saving of approximately \$490,000.

CITIES POWER PARTNERSHIP

The Cities Power Partnership (CPP) is an initiative of the Climate Council of Australia which seeks to accelerate the benefits of emissions reduction and clean energy for Australian towns and cities, providing much needed

cost savings in the process. Council joined the program in April 2021 and has become a Power Partner. Council will work with the CPP to select five key actions from the partnership pledge ranging from renewable energy, efficiency, transport and advocacy that it will strive to achieve.

CLIMATE ACTION PLAN

Council is developing a climate action plan that will guide the delivery of improved environmental outcomes. The action plan will build on existing projects and programs identified by Council, the community and NSW State Government to deliver robust economic and environmental benefits through resource efficiency, decreased emissions, improved liveability and other sustainability initiatives.

The climate action plan will guide Council to position itself as a leader in the Western City by achieving emissions and water reductions across Council's operations and the broader community. The plan will focus on Council assets and operations but will also identify potential actions and implications for other stakeholders such as the community.

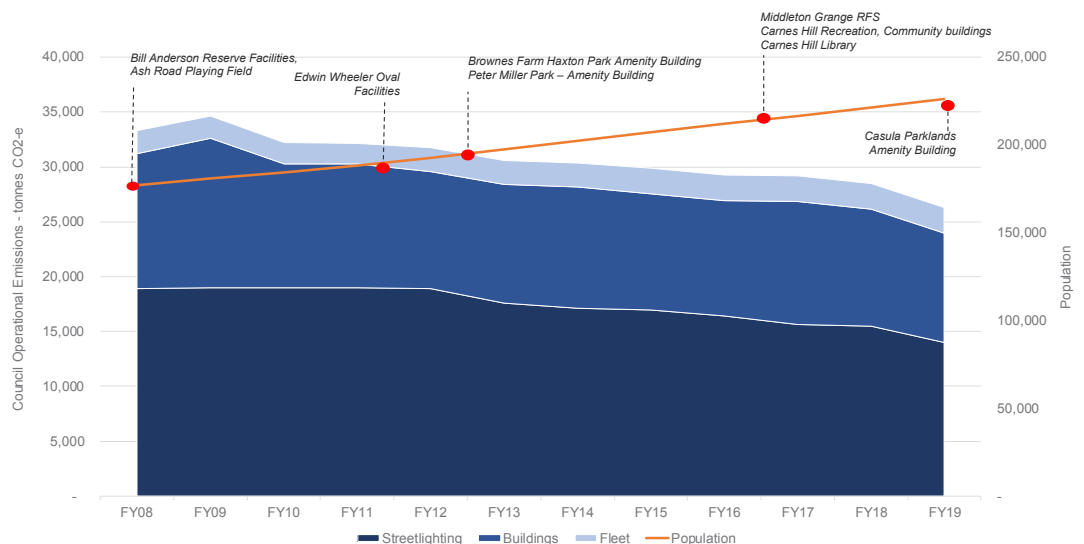
ENERGY MONITORING

Resilience Sydney and the Azility tool are resources that collect utility data and act as a repository for consumption data from Council's energy and water retailers. This information is maintained in a form that can assist Council to report quarterly on key indicators, make informed strategic decisions and efficiently manage assets and facilities.

EMISSIONS

Since 2008, Council's sustainability strategies including, building refurbishments and streetlighting replacement with efficient LEDs have delivered a 12% reduction in emissions between FY08 and FY17. Refer to the figure below showing Council's reduction in operational emissions across streetlighting, buildings and fleet emissions while the population has grown, and services have been added.

COUNCIL OPERATIONAL EMISSIONS REDUCTION, FY08 - 19



Outcomes & Trends

- Council's overall electricity usage for the 2020-2021 financial year was approximately 17.5GWh (or 17,500,000kWh) of electricity consumption. Council's total gas consumption was 13.9MJ;
- Council's top 10 energy using sites accounted for 81% of organisation wide electricity consumption;
- Council's top five sites by spend accounted for 39% of Councils overall electricity cost; and
- Organisation-wide energy consumption decreased by 9% compared to the 2016-17 financial year.

Council's innovation across its assets has delivered significant emissions reduction and operational cost savings. The streetlighting replacement program and power purchase agreements are two example strategies that have provided the double dividend of emissions reduction as well as operational cost savings. Despite a growing population and provision of associated services, Council has delivered emissions reduction since FY08 through energy efficiency upgrades.

COUNCIL'S NATURAL GAS USAGE AND COST OVER THE LAST 5 FINANCIAL YEARS

FINANCIAL YEAR	NATURAL GAS USAGE (MJ)	TOTAL COST (\$)
2016-2017	8,981,494	\$214,565.00
2017-2018	14,178,015	\$336,529.00
2018-2019	16,350,905	\$325,814.00
2019-2020	12,140,417	\$340,978.00
2020-2021	13,885,410	\$210,433.00
TOTAL	65,536,241	\$1,428,319.00

COUNCIL'S ANNUAL ELECTRICITY USAGE AND COST OVER THE LAST 5 FINANCIAL YEARS

FINANCIAL YEAR	ELECTRICITY USAGE (KWH)	TOTAL COST (\$)
2016-2017	19,219,075	\$2,402,536.00
2017-2018	18,006,194	\$2,697,413.00
2018-2019	17,760,331	\$3,139,950.00
2019-2020	17,341,063	\$3,033,111.00
2020-2021	17,501,818	\$3,081,296.00
TOTAL	89,828,481	\$14,354,306.00

5

WASTE AND RESOURCE RECOVERY

Introduction

Council provides residents with the three-bin system for managing kerbside domestic waste. This includes general waste bin, recycling bin, and garden organics bin. The household clean-up programs let each property book two general collections of up to two cubic metres of household items each, two mattress collections and unlimited metal collection per calendar year. Residents also have access to a range of waste related programs including:

- Community Recycling Centre;
- Asbestos removal;
- Chemical CleanOut events;
- Be Sharp Safe;
- Compost bin and worm farm rebate; and
- Education workshops and activities.

Strategic Guidance

Whilst Council has responsibility for managing waste in its LGA, it is not governed solely by its own policies and guidelines. Council's domestic waste management is also undertaken within the framework of National, State and Regional policies, strategies and relevant guidelines. The complexity and vastness of waste legislation and regulation reflects the importance that the community places on environmental, economic and social considerations.

Council is soon to finalise its 10-year Waste Strategy. This document considers the National, State and Regional waste documents, adopting targets from the recently released NSW Waste and Sustainable Materials Strategy 2041. The strategy sets out an action plan for Council around the following major themes;

- avoiding and reducing waste;
- improved resource recovery;
- improved reuse and recycling;
- infrastructure;
- managing problem waste;
- planning for improved waste management;
- reducing illegal dumping;
- reducing litter;
- service improvement; and
- strategic policy.

Contaminated Land

Council has a substantial portfolio of open space and community facilities. Due to historic levelling and landfilling with building rubble and other waste material, a number of these sites are impacted by some form of contamination. Although a common practice decades ago, the landfilling has left a potential problem which requires a planned and structured management strategy to be implemented in accordance with relevant legislation and NSW EPA guidelines.

Council implements best practice asbestos and contaminated land management to manage its contaminated lands effectively and safely, and to ensure they continue to remain fit for their intended purpose.

Council's efforts in asbestos management received major recognition when Liverpool Council won the 2020 Local Government NSW Excellence in Environment Awards for Asbestos Management.

Initiatives

FOOD ORGANICS AND GARDEN ORGANICS (FOGO) IMPLEMENTATION

Under the 10 Year Waste Strategy, Council will implement the FOGO kerbside collection service that allows food to be added to the green lid garden waste bin, so it can be recycled into good quality compost. This is due to commence as a service by July 2024, and will require significant communication, education and behaviour change work both before it commences, and ongoing.

COMMUNITY RECYCLING CENTRE (CRC)

The CRC gives the public an opportunity to drop off household problem waste for free. Items dropped off are recycled where possible or safely disposed of. The centre accepts 12 waste streams including cardboard, gas bottles and fire extinguishers, mobile phones, polystyrene, fluoro globes, ink cartridges, household and car batteries, smoke detectors, electronic waste, paint, x-rays, and motor and other oils. Council has also recently established CRC drop off stations at libraries for selected items.

COMPOST AND WORM FARMING

Food waste represents the largest portion of our red bin. The compost and worm farming rebate encourages residents to turn their food waste into a valuable resource, compost. Residents can apply for a \$50 rebate off the cost of the compost bin or worm farm. Council also offers workshops on establishing and troubleshooting your compost and worm farm.

BIN ROLL OUT PROGRAM

With Council entering a new collections contract in July 2021, all residential bins were replaced between March and July. Old bins were recycled, and the new bins contained a high recycled content. Residents also received educational material about the correct waste separation practises. A series of pop-up displays about the roll out were conducted across the LGA.

RESOURCE RECOVERY

Council is committed to reduce the production of waste at all levels including on construction and demolition projects. For construction and demolition projects, a segregation of the waste is conducted to ensure the different types of material are separated and directed to the appropriate waste streams. This includes separation of wood, metal, concrete and soil amongst other materials. This allows for the reuse and recycling of these materials, the decrease in quantities of disposal to landfill and the reduction of cost for the project.

Additionally, Council's construction and demolition projects are planned in accordance with the resource recovery orders and resource recovery exemptions regulated by the EPA. The orders and exemptions allow some waste to be beneficially and safely re-used independent of the usual NSW laws that control applying waste to land.

FOAMED ASPHALT STABILISATION

Council is currently trialling Foamed Asphalt stabilisation. This method of road renewal reuses existing road material onsite with a small quantity of additives. Foamed Asphalt stabilisation has been

utilised on two sections of Nuwarra Road and will be utilised on a section of Governor Macquarie Drive. Benefits of this method include:

- Minimised material disposal and carbon footprint (greenhouse gas emission reduction >50%);
- Increased asphalt stiffness (modulus), leading to an extended service life; and
- Cost saving of approximately 30-40% compared with conventional asphalt.

Outcomes & Trends

- Each resident in the LGA produced 237.27 kgs of general waste in 2020/2021 (based on calculation of the waste disposed to landfill and the LGA population);
- There has been a decrease in recycling tonnages, which can be attributed to the introduction of the Container Deposit Scheme. In 2020/2021, 14,502.14 tonnes of recycling material was collected;
- There has been a 39% increase in visits to the Community Recycling Centre with 36,595 visits in 2020/2021;
- Kerbside bins have an overall 37.35% diversion rate from landfill; and
- In 2020/21 there was an increase in the amount of household clean-ups booked and the tonnages received. Over 64% of the material collected is diverted from landfill.

6

COMMUNITY EDUCATION & ENGAGEMENT

Introduction

In 2020/21, COVID had significant impacts on community engagement outputs, particularly those involving face-to-face delivery. Those impacts are noted below.

Initiatives

Council coordinates several programs under its Environment Restoration Plan that promote environmental awareness and active participation in environmental initiatives, while encouraging sustainability in the wider community, including;

- Environmental Volunteer Program – a range of activities that engage members of the public in on-ground conservation works;

- Sustainability Blitz Workshops - a series of free monthly workshops allows the community to learn about a variety of environmental issues and develop practical skills to make change in their own lives;
- Sustaining Liverpool – a quarterly newsletter covering a range of environmental themes; and
- Digital information (website, social media).

ENVIRONMENT ADVISORY COMMITTEE

The Environment Advisory Committee (EAC) was convened to consider key environmental issues facing Liverpool. The EAC provides input on various management initiatives, making recommendations to Council. The EAC provides opportunities for meaningful community participation in the development and delivery of environmental initiatives.

WORKSHOPS

Traditionally, many workshops have involved hands-on teaching components, requiring a face-to-face delivery mode. The planned workshops for 2020/21 were transitioned to an online delivery format, with some content requiring modification for the medium. As COVID 19 restrictions eased, some workshops were able to be delivered in person.

Council held 14 environmental education workshops as part of the ERP program's Sustainability Blitz workshop series during 2020/21, including ad-hoc events through external partnerships. Monthly workshops included; wildlife display, nature walks (e.g. Breakfast with the Bird, nocturnal spotlighting, Drawn to Nature), vertical gardening, green cleaning, furniture repair, reusable nappies, and frog identification.

SCHOOLS ENGAGEMENT

The Environment Restoration Plan supports environmental education initiatives with our local schools. COVID-19 has impacted this form of engagement in the last financial year.

Council continues to support the Speaking 4 the Planet Event, a public speaking and drama competition for high school students held in conjunction with the United Nations World Environment Day. Support for the event in Liverpool started in 2015, though it has migrated to an open, online event for the Greater Sydney region.

SUSTAINING LIVERPOOL NEWSLETTER

Council continues to produce and distribute quarterly editions of the Sustaining Liverpool newsletter with educational articles on themes such as biodiversity,

water quality, and sustainability while also promoting environmental events, initiatives and resources.

Recently, each edition of the newsletter includes a featured topic, with articles drawn together around a central theme, while still highlighting seasonally relevant content. Some examples include biodiversity month, solar capture and storage, and water quality. Council also uses the newsletter to shine a spotlight on environmental champions in the community, such as our environmental volunteers.

With the pressures of COVID, the Sustaining Liverpool newsletter has transitioned to digital-only distribution and is available electronically via email and Council's website. The number of residents receiving the newsletter via email has increased over the past four years.

COUNCIL'S ENVIRONMENT VOLUNTEER PROGRAM (EVP)

This program was set up under Council's Environment Restoration Plan to facilitate community engagement in the delivery of environmental activities. The EVP program delivers a range of events and programs including:

- Bushcare - Council supports facilitates registered volunteers undertaking monthly Bush Regeneration activities at 10 parks and reserves across the LGA;
- Streamwatch – a long running citizen science water quality monitoring program;
- Nature Watch – a citizen science activity recently added to the program. Council utilises the iNaturalist app to engage volunteers in the identification of flora and fauna on their sites;
- Community Tree Planting – monthly activities open to the general public. Additional volunteer activities are organised for school/corporate/ community groups on request;
- National Tree Day (annually) - Council's largest tree planting event; and
- Environment Volunteer Recognition Event - held annually to thank and recognise the efforts of Council's registered Environment Volunteers.

Volunteer activities were suspended due to COVID. The Volunteer Groups were reactivated in July 2020, with Community Tree Planting activities resuming in 2021. Due to lockdown, Council's Bush Regeneration teams planted the National Tree Day plantings.

EVENTS

Council staff utilise various events annually to promote and educate on environment and sustainability

issues. Council officers attend these events to provide information to community members and discuss customer concerns in relation to a broad range of environmental topics. Events can include:

- Australia Day
- National Tree Day
- World Environment Day
- NAIDOC Week

With the impact of COVID, Council events have been cancelled, downsized or moved online.

Council was able to celebrate World Environment Day with a screening of the documentary, Blue, with key note speaker Ms Charlotte Beloe discussing her research on the impacts of microfibers in marine environments. Among the 66 attendees, the Kim family were inspired by the documentary to become Community Champions, calling themselves the 'Plastic Busters'.

Outcomes & Trends

There is consistently positive feedback from community members involved in Council's environmental education and sustainability initiatives. An increasing number of residents and community groups are becoming involved and incorporating this practical knowledge into their everyday activities and increasingly recognising the value of our local environment. Over the last financial year:

- 57 volunteers contributed 425 hours to the protection and enhancement of bushland in the Liverpool LGA;
- 2683 students participated in the primary school waste education program;
- 3,500 recycling bins were inspected and feedback was provided to residents;
- Three waste workshops were delivered to CALD groups;
- Over 15 days of pop up displays for waste education at local shopping centres; and
- Two workshops including Love Food Hate Waste and Worm Farming and Composting.



For further information



Visit Us

Customer Service Centre

Ground Floor, 33 Moore Street, Liverpool, NSW 2170

Open Monday - Friday, 8.30am - 5pm



Phone

1300 36 2170

Calling from interstate: (02) 8711 7000

National Relay Service (NRS): 133 677

(for hearing and speech impaired customers)



Email

lcc@liverpool.nsw.gov.au



Post

Locked Bag 7064, Liverpool BC, NSW 1871



Website

www.liverpool.nsw.gov.au



Subscribe

www.liverpool.nsw.gov.au/subscribe