



**State of the
Environment
Report**
2017/2018

Introduction

The State of the Environment Report is an integral part of Council's Annual reporting to the community, and provides information on a wide variety of key environmental indicators for the 2017/2018 year. The report compares trends for past years and highlights areas where Council has implemented projects or programs to help improve the local environment in line with our Community Strategic Plan.

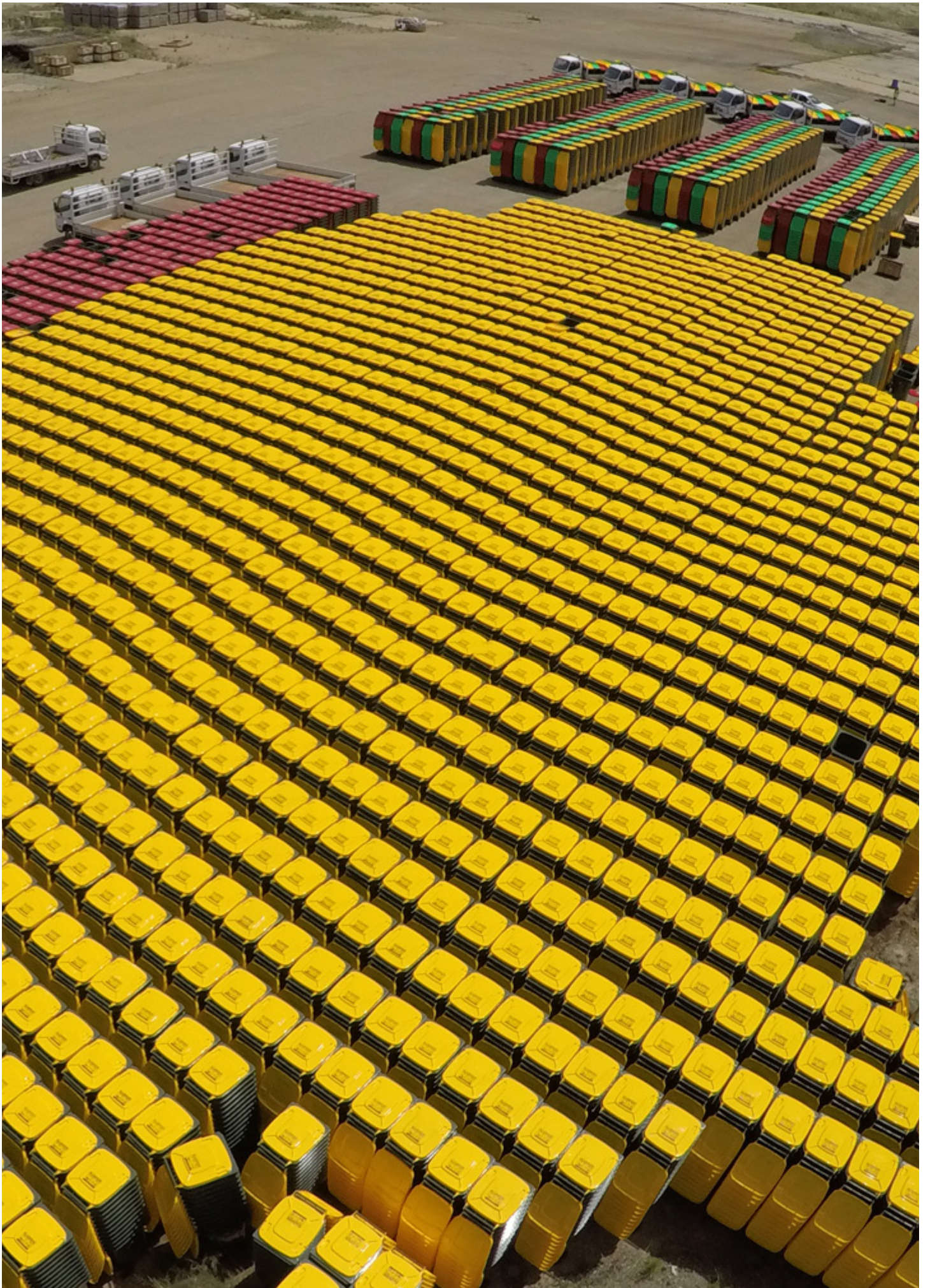
The Wagga View Community Strategic Plan 2040 looks at where we want to be as a community in 2040. It defines our community's priorities and goals, and focuses on how we can achieve these goals together. Wagga View is Council's highest level plan and is used by Council, stakeholders and other agencies to guide policy, establish service delivery and inform plans. The Community Strategic Plan addresses community outcomes across five strategic directions:

- Community Leadership and Collaboration
- Safe and Healthy
- Growing Economy
- Community Place and Identity
- The Environment

What does Council aim to deliver for Environment?

- Ensure sustainable urban development
- Provide healthy natural areas
- Look after and maintain community assets
- Create an attractive city
- Improve the facilities of our spaces and places
- Educate the community in sustainability
- Be proactive with waste management
- Minimise our impact on the environment

Information shown in the State of Environment Report is used by Council to help guide its management plans, policy formulation and to improve its implementation of the principles of Ecologically Sustainable Development.



Climate

Wagga Wagga has a temperate climate with hot dry summers and cold winters. At an elevation of 147 metres above sea level, Wagga Wagga generally has four distinct seasons. With a local government area (LGA) spanning 4,862km² climate can show some minor variability in different areas, but overall, in 2017/2018 the Wagga Wagga LGA had a much hotter, drier year than average, with drought ravaging much of the region.

Eleven out of twelve months had a higher than average 'mean maximum temperature' and seven out of twelve months had a higher than average 'mean minimum temperature.' The annual average maximum temperature and the annual average minimum temperature were both higher than the long term average. This trend has been continuing for more than two decades.

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Ann
2017/18	13.7	14.5	19.3	24.3	28.0	30.5	34.3	32.4	29.9	27.7	18.4	14.8	23.7
Max													
LT Mean	12.8	14.5	17.7	21.6	25.9	29.5	31.8	30.9	27.7	22.6	17.4	13.9	22.2
Max													
2017/18	2.6	2.6	4.9	9.2	13.9	16.6	18.3	16.2	13.6	11.2	5.8	4.1	9.5
Min													
LT Mean	2.8	3.5	5.1	7.8	10.9	13.9	16.3	16.4	13.4	9.2	5.9	3.7	9.1
Min													

Table 1: Maximum and Minimum Temperatures (Celsius)
Source: Bureau of Meteorology, Forest Hill station data

Ten out of the twelve months saw lower than average rainfall, with a total of just 477mm of rain for the year, almost 100mm lower than the long-term average rainfall amount. Exacerbating this issue was the fact that evaporation rates exceeded the amount of rainfall and the long-term average on ten out of twelve months.

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
17/18	52.6	49.7	8.4	65.4	37.0	101.6	50.8	24.2	7.6	4.0	35.4	40.8	477
Rain													
LT Mean	54.4	50.6	49.4	56.9	45.7	45.7	40.5	40.5	44.6	39.7	50.6	50.4	575
Evaporation													
17/18	6.2	48.4	123.4	180.0	223.6	217.8	326.0	254.2	212.2	183.6	75.2	42.6	1893

Table 2: Evaporation and rainfall (mm)
Source: Bureau of Meteorology, Forest Hill station data

There has been a decline of around 11 per cent in April – October rainfall in the southeast of Australia since the late 1990s.

The climate of the Wagga Wagga region has been shifting in recent decades and government modelling predicts that this trend will continue. The warming trend projected for the region is large compared to natural variability in temperature and is of a similar order to the rate of warming projected for other regions of NSW. Figure 1 summarises the projections from the NARClm data for our region.

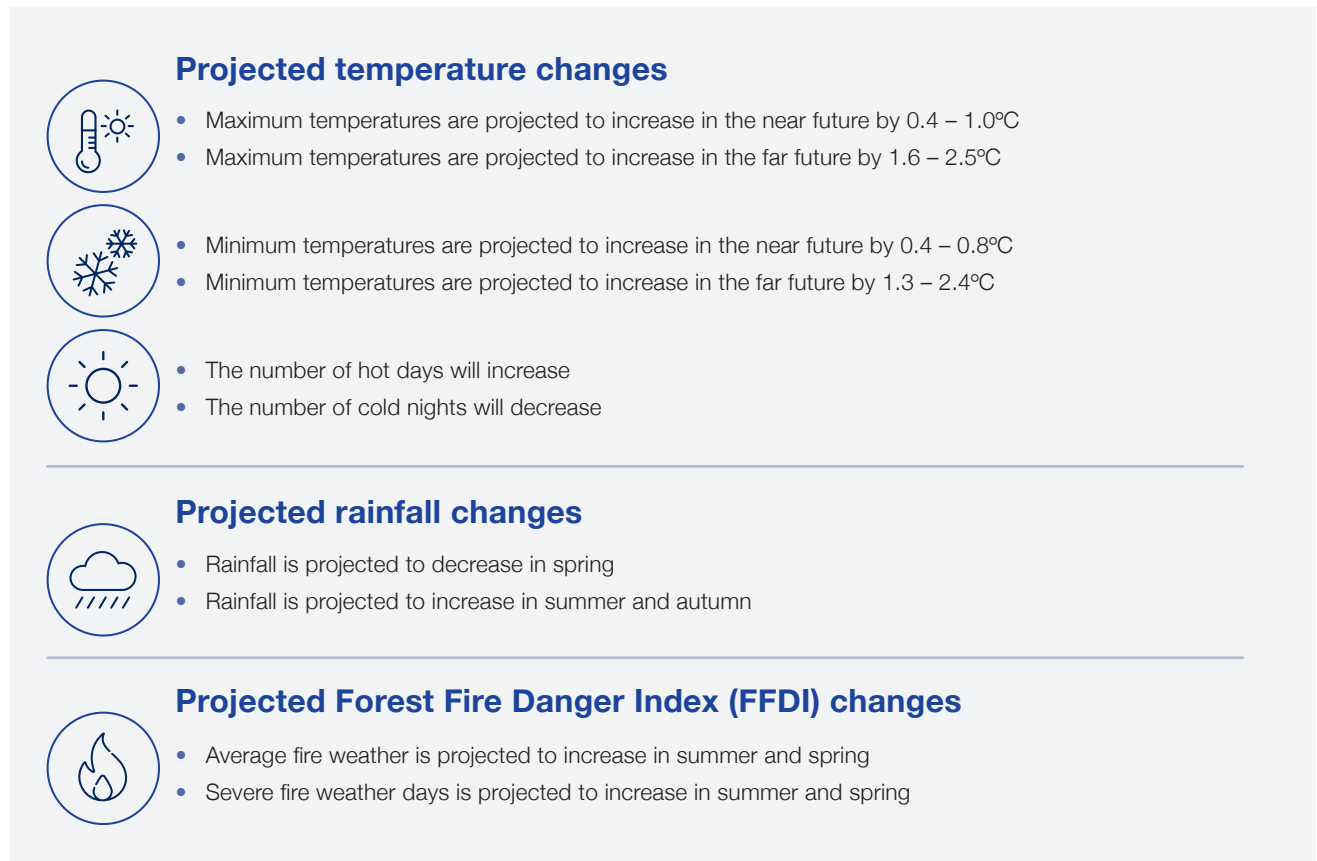


Figure 1: Projected temperature changes. Source: Murray-Murrumbidgee Climate Change Snap Shot (NSW OEH, 2014).

Building resilience to climate change

Wagga Wagga City Council was successful in receiving \$58,800 of funding from LG NSW and the Office of Environment & Heritage to undertake a project to help build resilience to climate change in Wagga Wagga. The project has allowed Wagga Wagga City Council to develop a broad feasibility assessment of adaptation actions for key Council assets, such as sewer and stormwater infrastructure, transport infrastructure and recreational assets. The adaptation options will be included into Council's relevant Asset Management Plans where feasible.

Air quality

A state-wide air quality monitoring network provides information on air quality to the community. Data from the monitoring network is presented online as ambient concentrations and air quality index values. The Air Quality Index (AQI) is a scale of air pollution that helps us understand air quality and modify our activities if pollution levels are high.

In Wagga Wagga they predominantly measure particulate matter (PM10 and PM2.5). Solid or liquid particles may be suspended in the air and reduce visual amenity and adversely impact health. The size of a particle determines its potential impact on human health. Larger particles are usually trapped in the nose and throat and swallowed. Smaller particles may reach the lungs and cause irritation there.

The Air Quality Index (AQI) is calculated according to a formula, where the data value is expressed as a percentage of the level specified by the National Environment Protection Measure for Ambient Air (NEPM) standard. A lower value indicates better air quality and a higher value, worse.

AQI	What action should people take?
Very good 0-33	Enjoy activities
Good 34-66	Enjoy activities
Fair 67-99	People unusually sensitive to air pollution: Plan strenuous outdoor activities when air quality is better
Poor 100-149	Air pollution health alert Sensitive groups: Cut back or reschedule strenuous outdoor activities
Very poor 150-200	Air pollution health alert Sensitive groups: Avoid strenuous outdoor activities Everyone: Cut back or reschedule strenuous outdoor activities
Hazardous 200+	Air pollution health alert Sensitive groups: Avoid all outdoor physical activities Everyone: Significantly cut back on outdoor physical activities

Table 3: Air quality index
Source: NSW Office of Environment & Heritage

These parameters are collated by region- and Wagga Wagga forms part of the South-west slopes region. As illustrated in Figure 2, our air quality is 'Very Good', 'Good' or 'Fair' most of the time (333 days), however there were 28 days when local air quality was ranked as 'Poor' 'Very Poor' or 'Hazardous'.

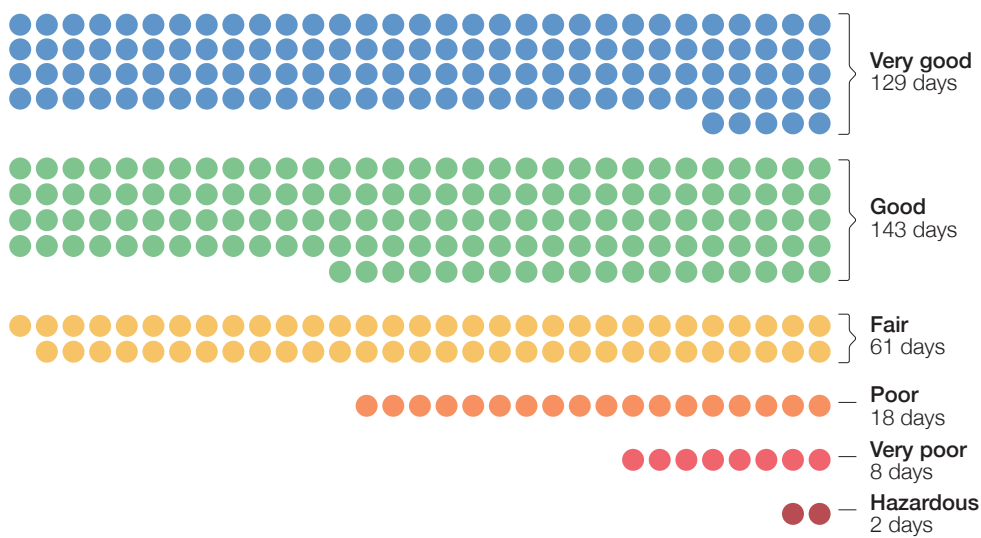


Figure 2: Air quality index values for Wagga Wagga
Source: NSW OEH, 2018

The two days of hazardous air quality were in March and April 2018. Although it is difficult to ascertain the specific cause it is noted that there were bushfires in the ACT and Bega in March 2018, and bushfires in Liverpool and Sutherland in April 2018 that may have contributed to this. Other common natural pollutants that contribute to poor air quality are dust and pollen.

Air pollution is also caused or contributed to by:

- domestic activities such as burning wood fires, including using wood heaters and fuel-powered garden equipment
- commercial businesses such as spray painters, printers, quarries, service stations
- industrial activities such as coal mining, oil refining and power generation
- agricultural activities such as stubble burning, ploughing, harvesting and spraying
- on-road motor vehicles such as buses, cars and trucks
- off-road vehicles and equipment such as dump trucks and bulldozers.

The Government introduced new product emissions standards for outdoor power equipment and engines in 2018.

Water

Water usage

Riverina Water County Council owns and operates all of the potable water supply for the Wagga Wagga LGA. Approximately 85% of this is sourced from groundwater, and the remaining 15% from the river. In 2017/2018 our community used over 14 Billion litres of potable water.

The Wagga Wagga Community used more than 5,640 Olympic sized swimming pools of potable water in 2017/18.

Year	Total for Wagga Wagga LGA	Average per capita (L)
2017/2018	14,100,900,000	219,418
2016/2017	13,414,000,000	211,244
2015/2016	13,835,000,000	218,121
2014/2015	13,962,000,000	222,324
2013/2014	12,297,000,000	197,868

Table 4: Potable Water Usage for the Wagga Wagga Local Government Area Source: Riverina Water County Council data and ABS population data.

As Figure 2 illustrates, 63% of this was for residential purposes. Studies by Riverina Water indicate that around 50% of all water used in the Wagga Wagga area is used on residential gardens. This has led to Riverina Water having put in place a permanent water conservation measure where fixed sprinklers cannot be used between the hours of 10am and 5pm and this applies to all customers. This measure is being implemented to increase water use efficiency by greatly reducing evaporation losses.

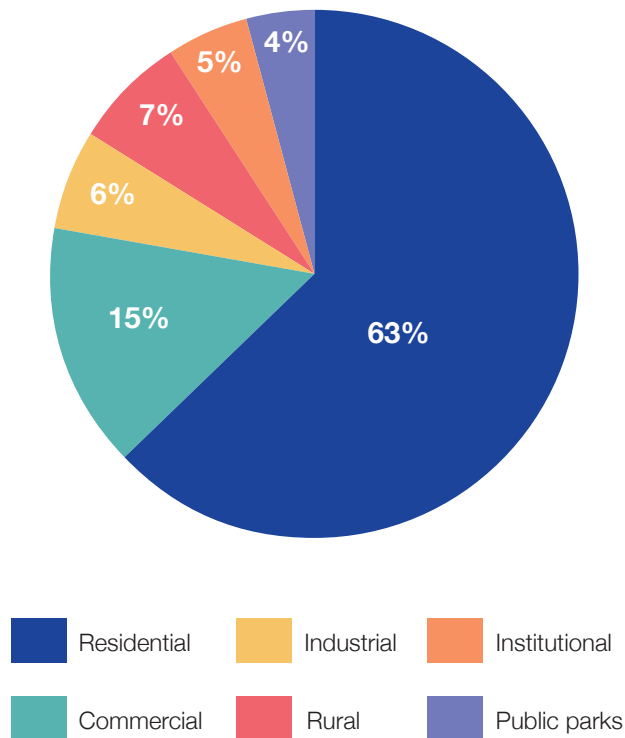


Figure 2: Distribution of potable water in Wagga Wagga LGA. Source: Riverina Water County Council data

Council's water usage

Wagga Wagga City Council has several hundred water accounts, which in 2017/2018 used more than 770 Million litres of water. This is a significant increase on last year's consumption and is largely due to the extremely dry year that our region has experienced.

2017/2018	2016/2017	2015/2016	2014/2015	2013/2014
770,542 ML	673,072 ML	707,805 ML	1,036,218 ML	749,906 ML

Table 5: Potable Water Usage for Wagga Wagga City Council
Source: Planet Footprint data

Council's largest users of water are the city's key parks (such as Botanic Gardens and Victory Memorial Gardens) and large sportsgrounds (such as Jubilee Park Touch Fields, Connolly Rugby Fields, Athletics Track, Henwood Park and Kessler Park). The Oasis Aquatic Centre and the Livestock Marketing Centre also consume significant amounts of water.

Council also uses around 415 Million litres of treated effluent for irrigation of several sportsgrounds such as Bolton Park, Robertson Oval, Duke of Kent Oval, McPherson Oval, Rawlings Park Wagga Wagga Cricket Ground and the Lawn Cemetery. Treated effluent is also used to top up the Marrambidya Wetland.

Water quality monitoring

Council conducts water quality testing of Lake Albert, the Murrumbidgee River, Flowerdale Lagoon and Wollundry Lagoon. This is done to monitor the health of the waterways as well as highlight any important concerns for human health. The river and the lagoons are tested for nutrients and Lake Albert is monitored for nutrients, bacteria and algae. In 2017/2018 there were seven tests resulting in a 'Red Alert' for algae or a 'High Alert' for bacteria (as per the Australian Government's NHMRC Guidelines for Managing Risks in Recreational Water) where Council had to warn the public that the water was considered unsuitable for water contact activities.

	Blue-Green Algae (cyanobacteria)			Bacteria (Faecal Coliform/Enterococci)		
	Green	Amber	Red	Low	Medium	High
2012/2013	18	7	3	6	19	3
2013/2014	16	4	2	5	13	2
2014/2015	15	7	3	9	11	3
2015/2016	7	11	0	8	6	3
2016/2017	15	7	0	2	15	4
2017/2018	11	11	7	2	11	3

In the past 6 years, Lake Albert has had more high alerts for Bacteria than Blue Green Algae.

Table 6: Lake Albert alert levels. Green- routine monitoring only. Amber- increase sampling to enable risks to be more accurately assessed. Red- warn the public that the water body is considered to be unsuitable for water contact activities. Low- no restrictions on use. Medium – advise against primary contact. High- advise against all use. Source: WWCC data and NHMRC Guidelines.

The presence of sufficient nutrients, warm temperatures and high levels of sunlight provide optimal growing conditions for blue-green algae.

Cyanobacteria (or blue-green algae) are a common and naturally occurring component of most recreational water environments. However, a series of favourable environmental factors including warm water temperatures, sunny days and high nutrient loads (nitrogen and phosphorus from run-off) can lead to a blue-green algae bloom.

They are of public health concern because some types produce toxins that can have a harmful effect on recreational water users. When ingested some can cause liver damage, stomach upsets and disorders of the nervous system in people. Direct contact with blue-green algae can cause skin and eye irritations. Algae can also have effects on livestock causing illness or occasional death and there is evidence it can poison wildlife and domestic pets.

Microbial quality (bacteria such as faecal coliforms and e.coli) of recreational water is strongly influenced by factors such as rainfall in the catchment of the water body, potentially leading to relatively short periods of elevated faecal pollution. Bacteria levels are known to be higher after rainfall due to the quantity of material collecting in storm water pipes, grazing land and upstream water bodies between rain events and can also be a result of the overflow of domestic sewage or nonpoint sources of human and animal waste.

Contact from swimming and/or swallowing water contaminated with high levels of bacteria can put you at risk of illness such as gastroenteritis, skin irritations, or respiratory, ear and eye infections.

Wastewater

There are three main sewage treatment plants (STP) currently servicing the Wagga Wagga area. These are at Narrung Street, Koorungal and Forest Hill. The Bomen industrial area also has a pre-treatment facility. Each sewage treatment plant has to be licensed by the Environment Protection Authority (EPA) and operated according to the licence conditions. The load-based licensing scheme sets limits on the pollutant loads emitted by holders of environment protection licences and links licence fees to pollutant emissions.

Effluent reuse for irrigation

Treated effluent from the Narrung Street and Koorungal Sewage Treatment Plants is used for irrigation purposes on a number of sites around Wagga Wagga. The quality of this effluent is closely monitored and is used on a number of sites, including; Bolton Park, Robertson Oval Duke of Kent Oval, McPherson Oval, Rawlings Park, Wagga Wagga Cricket Ground and the Lawn Cemetery.

The Marrambidya Wetland has also received 202ML of treated effluent from the Narrung Sewage Treatment Plant.

2017/2018	Total discharge (ML)	% to river	% to reuse
Narrung STW	3,672	96.6	3.4
Koorungal STW	1,387	93.4	6.6
Forest Hill STW	199	0.0	100.0
Totals	5,257	92.1	7.9

*Table 7: Wagga Wagga City Council effluent reuse for irrigation
Source: WWCC EPA license data.*

Industrial trade waste

Liquid trade waste means all liquid waste other than sewage of a domestic nature. Liquid trade waste discharges to the sewerage system include liquid wastes from:

- business/commercial/industrial premises
- community/public premises
- trade activities
- saleyards, racecourses and from stables and kennels
- septic tank waste, chemical toilet waste, waste from the discharge of pan content from mobile homes/caravans to the sewerage system.

Industries that dispose of industrial treated wastewater into the Wagga Wagga sewage reticulation system are monitored by Wagga Wagga City Council on a monthly basis.

The company is charged for this based on the level on contaminants in the discharge. Water quality testing is conducted by Wagga Wagga City Council and sent to an accredited laboratory.

To protect the sewer system some trade waste needs to be treated before it is discharged. Treatment might include removing harmful chemicals or fats or can correct the characteristics of the wastewater, like its pH or temperature.



Waste

The NSW Government has targets to divert 75% of waste away from landfill.

Wagga Wagga Council provides the following solid waste services:

- Kerbside collection of domestic and commercial waste within specified collection areas
- Waste management facilities, including landfills and transfer stations
- Provision and servicing of street bins and park bins
- Provision of a Resource Recovery & Resale facility at Gregadoo Waste Management Centre.

In total for 2017/2018, more than 98,000 tonnes of waste was disposed of at the Gregadoo Waste Management Centre. More than 83,000 tonnes was buried as landfill while the remaining 15,000 tonnes were reused or exported for recycling. This includes many different products such as biosolids, steel, mattresses, computers and televisions, oil and polystyrene.

Figure 3 shows the breakdown of the total waste volume sent to the Gregadoo Waste Management Centre by the Wagga Wagga community in 2017/18.

This included 27,650 tonnes of Municipal Solid Waste (MSW) 32,480 tonnes of Commercial and Industrial waste (C&I) and 38,330 tonnes of Construction & Demolition waste (C&D).

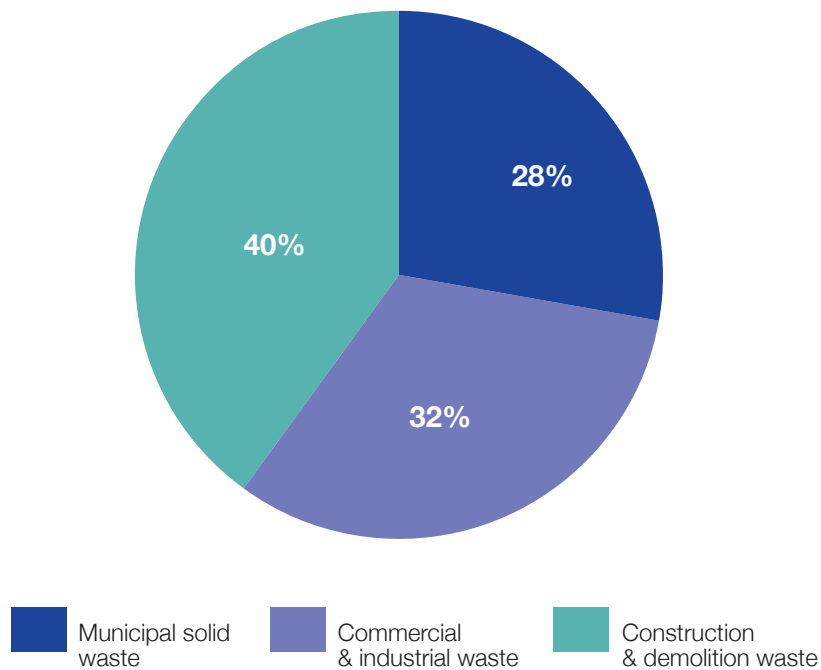


Figure 3: Source of waste received at GWMC
Source: WWCC weighbridge data.

Figure 4 illustrates the residential kerbside collection service. ‘Landfilled’ is what is collected in the general waste (red-lid) bin and up until April 2018 the garden waste (green-lid) bin. ‘Recycled’ indicates the total received by Kurrajong (yellow-lid bin) for recycling, and from April 2018 the Food Organics and Garden Organics FOGO (green-lid bin) which is now recycled into compost.

In the first quarter of the new waste service over 2,000 tonnes of additional waste was diverted from landfill.

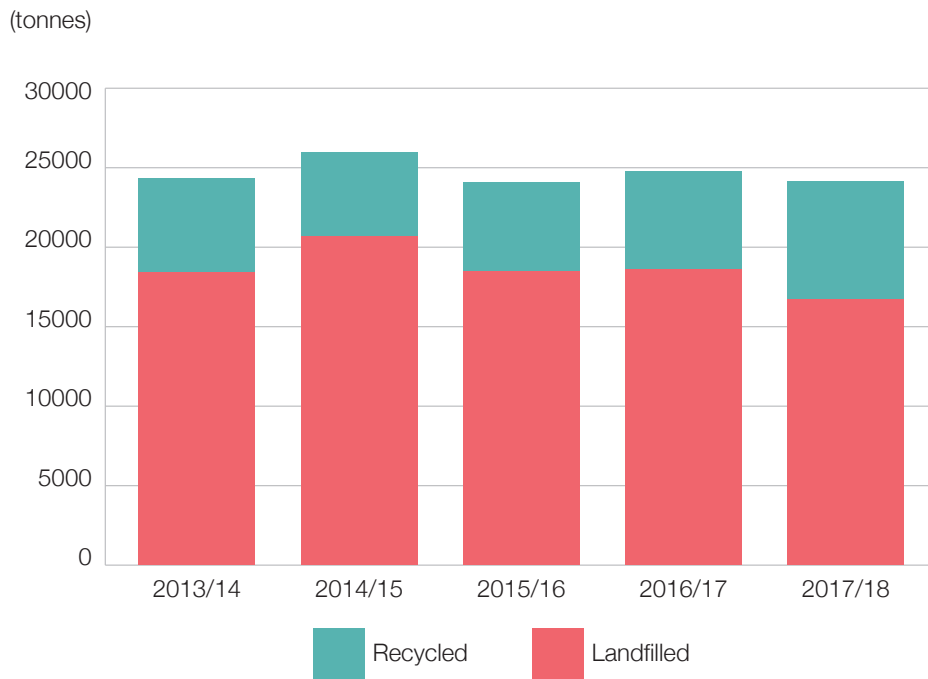


Figure 4: Kerbside waste collection breakdown. Note: Some recycling received by Kurrajong is landfilled due to contamination. Source: WWCC data, Kurrajong Recyclers data.

Waste in landfills can take decades to decay; meaning landfill gas is generated long after waste is first deposited. Methane comprises about half the composition of landfill gas and is a potent greenhouse gas. When reported, it is converted into carbon dioxide equivalent units (CO₂e). Table 8 shows the greenhouse gases emitted by our landfill each year. Council is required to report this to the government annually as part of the National Greenhouse and Energy Reporting Scheme (NGERS).

For every 1 kg of food disposed of to landfill 1.9kg of carbon emissions are generated.

Financial Year	Tonnes of CO ₂ e
2017/2018	62,919
2016/2017	62,506
2015/2016	59,363
2014/2015	47,877

Table 8: Greenhouse gas emissions from landfill.

Because of how harmful these greenhouse gases are to the environment, Council captures and flares some of the methane generated. Since its commissioning in 2002 the methane flare facility has destroyed methane equivalent to more than 90,000 t CO₂e. Council also has plans to expand the gas capture system.

Rather than simply trying to reduce the amount of methane generated after landfilling our waste Council are now trying to avoid creating them in the first place. To achieve this, Council commenced composting food and garden organics (FOGO) in April 2018. Organics are the waste stream responsible for these emissions.

Your Waste – got it sorted?

A new kerbside waste service was introduced in Wagga Wagga in April 2018. The new service introduced a weekly food organics and garden organics collection, with the general waste bin becoming a fortnightly collection. The aim of the new service is to recover a previously lost resource, reduce our carbon emissions, reduce waste to landfill and increase recycling.

Waste audits indicated that more than half the general waste bin by weight was made up of food and garden organic material that had the potential to be recovered through a revised service. By capturing food waste and turning it in to compost Council can reduce carbon emissions through diverting waste from landfill, extend the life and frequency of expenditure on construction of landfill cells and mitigate against future price rises associated with landfill.

The transition to the new service saw the delivery of approximately 75,000 new bins. This also meant the retrieval of 75,000 bins. This process took 11 weeks to complete which demonstrates the significant nature of the changeover.

An extensive education and communications campaign was developed and delivered to assist and support residents in the transition. The campaign called ‘Your Waste – got it sorted?’ utilised a diverse range of engagement tools to ensure maximum reach and took into account the communications needs of the community.

To engage young residents in the new service, all primary schools were invited to submit names for the trucks. In total 79 suggestions were made. The final 10 names for each of the trucks in the fleet were determined through voting at Council’s ‘Little Big Day Out’ event in October 2017. The name, and the school feature on the rear of the truck and will remain there for the life of the contract.

The trucks have also been individualised to reflect the waste type they collect. Characters ‘Munch and Crunch’ feature of the FOGO trucks, ‘Trixie’ performs recycling tricks on the recycling truck, General Waste appears on the general waste truck and the whole ‘Sort-It Squad’ gather on the multi-purpose truck.

In the first quarter of service more than 2,000 tonnes of food organic and garden organic waste was processed into compost.

The aim of the new service is to recover a previously lost resource, reduce our carbon emissions, reduce waste to landfill and increase recycling.





Energy and carbon

Essential Energy operates the electricity network in this region. Table 9 illustrates the amount of electricity used in the Wagga Wagga Local Government Area. 2017/2018 is the first year that energy use (electricity drawn from the grid) is reported as falling by 3,700 MWh. This is likely to be from businesses and households making an effort to be more energy efficient, as well as the fact that the number of customers with solar PV contributing to their energy consumption and exporting excess energy back to the grid is also on the rise, having more than doubled since 2011/2012.

	MWh of electricity				No. Customers			
	Controlled Load	Business	Residential	Export	Controlled Load	Business	Residential	Export
2011/12	22,150	247,238	135,319	4,722	8,250	3,029	24,875	1,250
2012/13	20,077	257,965	136,700	6,417	8,080	2,985	24,877	1,854
2013/14	18,854	265,004	134,121	7,745	8,096	3,099	25,573	2,285
2014/15	18,634	267,907	135,610	9,318	8,005	3,118	25,860	2,666
2015/16	17,814	269,596	140,398	9,876	7,887	3,068	26,134	2,890
2016/17	17,824	266,282	145,337	9,810	7,794	3,198	26,435	3,088
2017/18	16,884	265,006	143,853	10,414	7,745	3,260	26,977	3,422

Table 9: Energy Usage for the Wagga Wagga Local Government Area

Note - Export is the total electricity exported to the grid from small solar power stations as recorded by electricity meters.

The total includes electricity exported from both gross and net metered solar power systems, this total does not include the solar power used directly within the homes with a net metering arrangement.

Note: Customer Count is based on billed days - Export Customer count is based on premise count and Invoice tariff history, ie. if customers changes Tariffs in period they may be duplicated.

Source: Essential Energy data

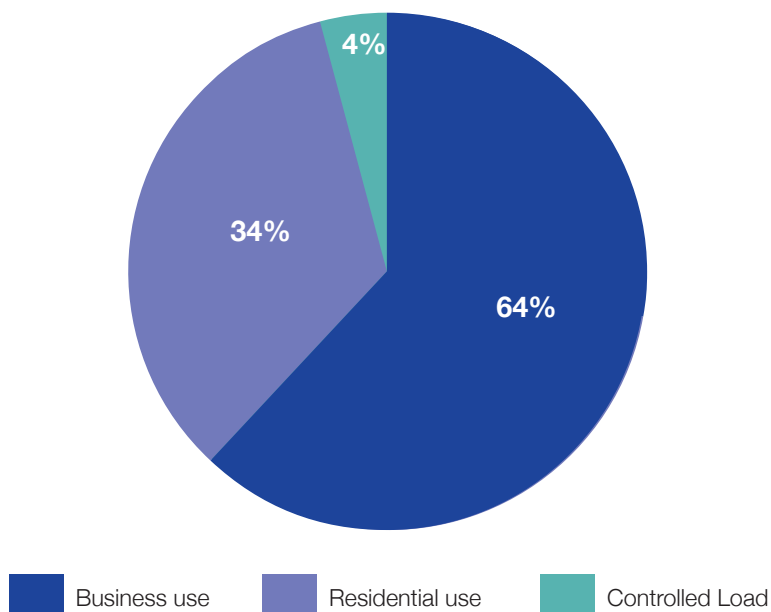


Figure 5: Energy usage in the Wagga Wagga Local Government Area

Source: Essential Energy data

Council's Energy Footprint

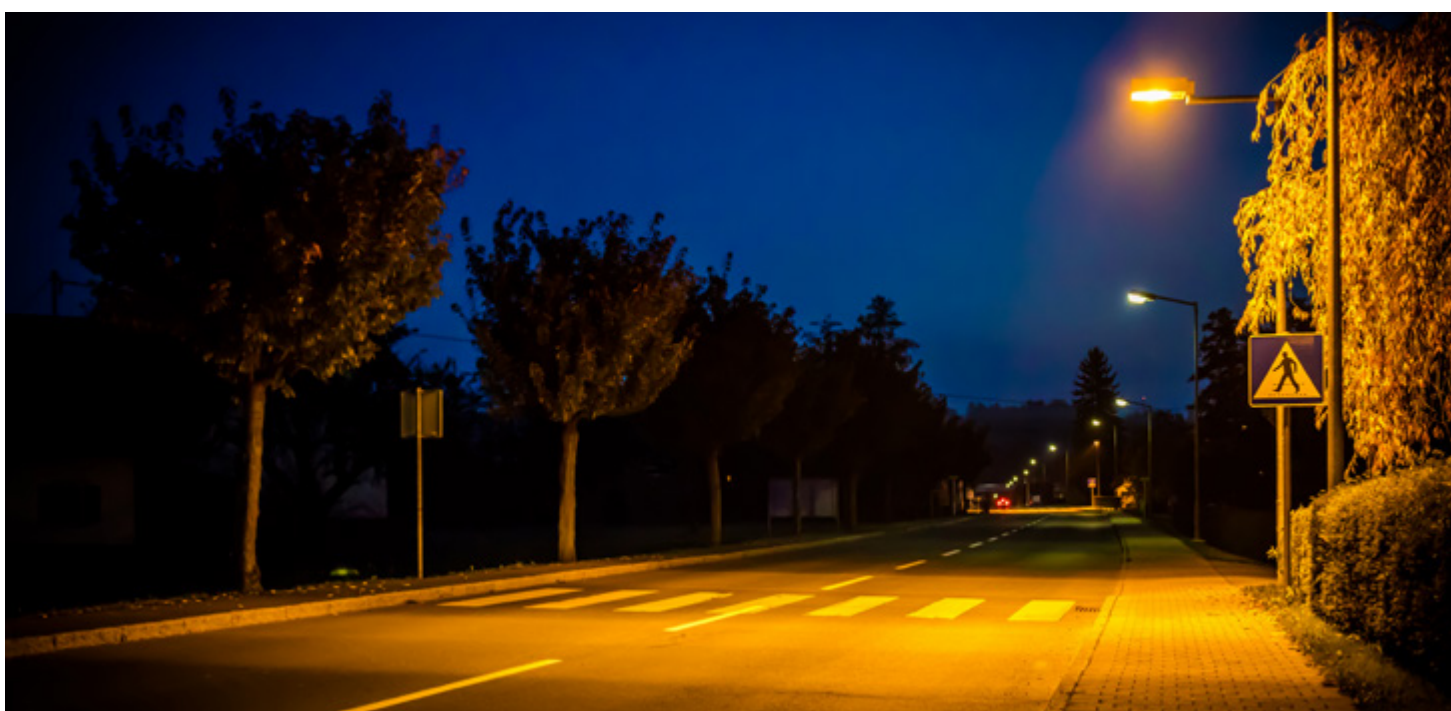
Council uses energy in the form of electricity, gas, and liquid transport fuels for its fleet of vehicles and heavy plant. Council also pays for the city's streetlighting network to be operated and maintained by Essential Energy. As of the end of 2017/2018 there were approximately 7,500 streetlights in the Wagga Wagga Local Government Area that used more than 3,200MWh of electricity and cost \$1.4M.

Despite continuing efforts at reducing energy consumption, there is still a rising trend as the price of electricity and gas continues to rise, and the streetlighting network and sewer network also continues to grow as the city develops and spreads more and more.

Table 10 demonstrates how Council's energy use has remained relatively steady but prices have increased inordinately.

Year	Energy Consumption	Cost to Council
2017/18	73,619 GJ	\$3.5M
2016/17	73,721 GJ	\$2.9M
2015/16	72,912 GJ	\$2.7M
2014/15	63,888 GJ	\$2.9M
2013/14	59,411 GJ	\$3.1M

Table 10: Energy Usage for Wagga Wagga City Council
Source: Planet Footprint data.



As an example, compared to last financial year the Civic Centre used 131,000kwh less electricity but the bill was \$80,000 higher. Similarly, the Oasis used 1800GJ less of gas, but the bill was \$110,000 higher than the previous year.

Figure 6 shows Council's ten largest energy consuming sites (electricity and gas combined). These sites alone use approximately 84% of Council's energy profile. In addition to this Council has another 200+ energy accounts, which includes assets such as sewer pump stations, de-watering bores, halls, clubhouses, amenities and so on, which contribute to the other 16%.

Council's assets used over 20,000,000 kWh of electricity and 30,000,000 MJ of gas.

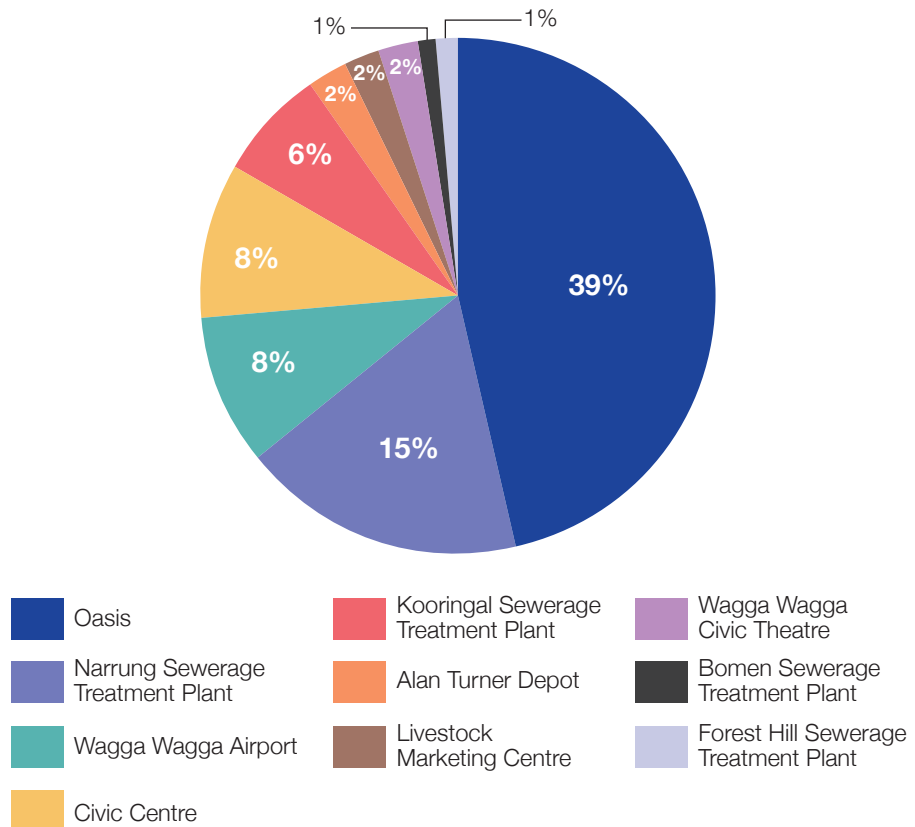


Figure 6: Council's largest energy consuming sites. Source: Planet Footprint data.

Solar Power

Council has a number of small solar photo-voltaic installations totalling around 85kW which can produce an estimated 100,000 kWh per year. This is enough to power around 18 average homes for a year.

These sites include:

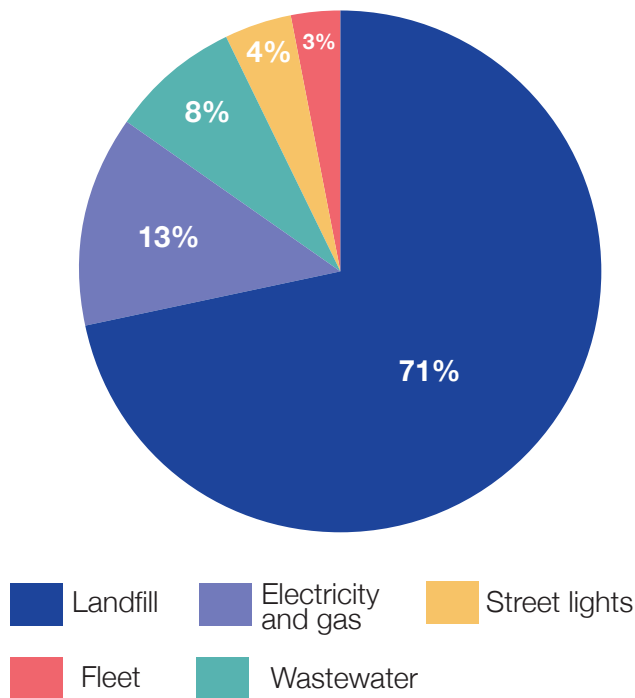
- Senior Citizens Centre
- Glenfield Community Centre
- Ashmont Youth Hub
- Alan Turner Depot
- Livestock Marketing Centre
- Riverina Regional Library Offices
- Glenfield Road Animal Shelter

Council has also endorsed installations totaling over 300kW at the Civic Theatre, Wagga Wagga Regional Airport, Oasis Aquatic Centre and Civic Centre in the coming year, as well as a number of other energy efficiency initiatives at key Council facilities such as lighting upgrades, variable speed drive pump upgrades heating ventilation and cooling upgrades.

Council’s Carbon Footprint

Figure 7 gives a breakdown of Council’s emission profile for the year. In terms of energy consumption, the electricity for all of Council’s facilities and assets is the biggest user. Council’s fleet used 958,000L of fuel in 2017/18 equating to approximately 2,500t CO2e.

In terms of our overall emissions, the operation of the Gregadoo Waste Management Centre where the community’s waste is sent to landfill accounts for almost three quarters of our total emissions. This is inclusive of ‘legacy waste’ that is still emitting greenhouse gases into the atmosphere as it continues to break down. Councils work in removing organic waste streams from landfill will reduce this significantly over time.



Organic waste going into landfill is the biggest contributor to Council’s greenhouse gas emissions.

Figure 7: WWCC emission profile 2017/18. Source: Planet Footprint and Essential Energy data

Community Emissions

Wagga Wagga City Council recently participated in a pilot program through the NSW Office of Environment & Heritage to develop a community greenhouse gas profile for the Wagga Wagga Local Government Area that is compliant with the Global Protocol for Community-Scale Greenhouse Gas Emissions Inventories. The 2016/2017 community emissions profile (which is based on energy, transport and waste) was calculated at 771,519 t CO₂e.

2650 ranked 95th
in household solar
installations by
postcode in 2018.

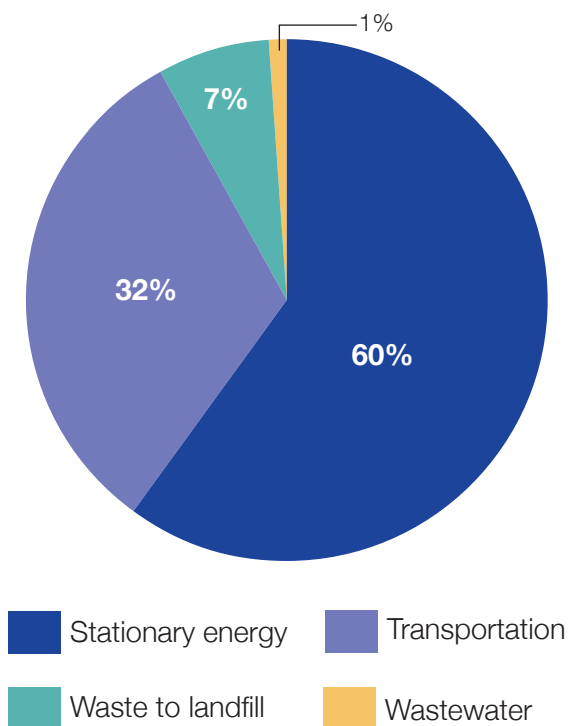


Figure 8: Community Emissions profile for the Wagga Wagga Local Government Area
Source: Ironbark Sustainability, 2018

Cities Power Partnership

Wagga Wagga City Council is now one of 100 Councils participating in the Cities Power Partnership Program (CPP). Local councils who join the partnership make five action pledges in either renewable energy, efficiency, transport or working in partnership to tackle climate change. In June 2018 Council endorsed the following pledge items:

- Install renewable energy on Council buildings
- Roll out energy efficient lighting (particularly street lighting) across the Local Government Area
- Provide fast-charging infrastructure throughout the city at key locations for electric vehicles
- Ensure Council fleet purchases meet strict greenhouse gas emissions requirements and support the uptake of electric vehicles
- Support local community energy groups with their community energy initiatives.

The Wagga Wagga LGA is one of 100+ Councils who have joined the Cities Power Partnership.

Southern Lights

Wagga Wagga City Council has provided in-principle support as a partner to the Southern Lights project which aims to replace approximately 70,000 street lights with state-of-the-art Light Emitting Diode (LED) lighting and smart control technologies across 40 Local Government Areas covering a large portion of southern NSW. Project partners include Riverina Eastern Regional Organisation of Councils (REROC), Riverina and Murray Regional Organisation of Councils (RAMROC), Central NSW Councils (CENTROC) and Canberra Region Joint Organisation (CBJRO).

Changing to LED street lighting would provide a number of benefits, which includes:

- Significant reduction in energy consumption
- Reduced carbon emissions
- Reduced maintenance costs
- Providing better quality lighting.

Active Travel

In early 2018 the NSW Government announced Council's \$11.7M funding application for its Active Travel Plan (ATP) – Cycling had been approved. The ATP was a key part of Council's Wagga Wagga Integrated Transport Strategy (WWITS 2040).

With the project now fully funded, cycling is set to become a more viable transport option through the development of five new cycling networks that link the outer suburbs with the CBD. The plan makes provision for arterial cycleways across the city and will connect key locations. Not only will it make Wagga Wagga a more liveable city, a commuter cycling network has financial, environmental and health benefits and also has the ability to reduce traffic congestion.

Council is creating a complete cycling network with more than 40km of shared paths and end-of-trip facilities, such as secure bike storage. The planned infrastructure will have significant benefits for the community and aligns with the strategic direction of achieving a healthy and connected city.

Urban Salinity

Urban salinity is recognised as one of Wagga Wagga’s most significant land degradation concerns. Annually Wagga Wagga City Council works with the community to adopt management practices to reduce salinity in the urban environment.

Salinity within the urban environment impacts on all members of the community by damaging infrastructure and impacting on the surrounding natural environment through loss of vegetation.

The establishment of a rear block drainage replacement system, an evaporation basin and the dewatering bores are examples of major capital works programs utilised by council to control urban salinity, as well as targeted revegetation where possible.

The status of urban salinity is monitored through an extensive network of over 200 piezometers and reported on annually.

Figure 9 shows an interpolated contour map of electrical conductivity (EC) levels of groundwater taken from piezometers in June 2018, for an area including Turvey Park, Mount Austin, Glenfield, Ashmont and Central Wagga. Green dots indicate piezometer locations (cluster of blue dots south of centre show the Calvary Hospital Borefield area). It should be noted that groundwater modelling is extremely complex, and the shaded areas of the map are conceptual only.

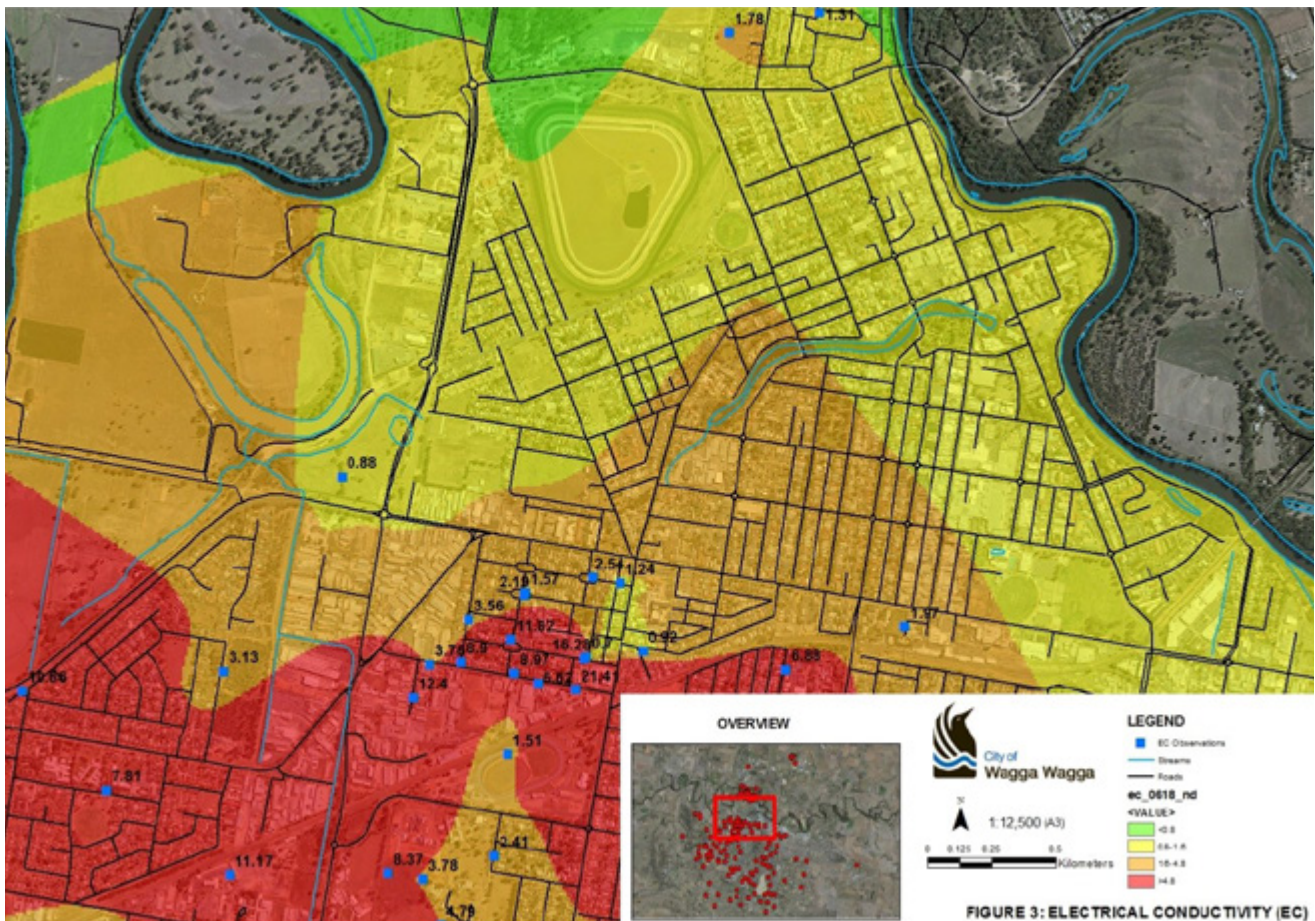


Figure 9: Groundwater salinity (EC) contour map June 2018 (Source: WWCC data)

Contaminated Land Monitoring

Council has responsibility for a number of contaminated or potentially contaminated land parcels where we undertake monitoring and if required, other on-going management or remediation.

Council also monitors our current operational sites with Environmental Protection Licenses:

- Narrung-BISTF Sewerage Treatment Plant
- Koorringal Sewerage Treatment Plant
- Forest Hill Sewerage Treatment Plant
- Gregadoo Waste Management Centre
- Livestock Marketing Centre.

In addition to these, there are 25 other EPA regulated licensed sites in the Wagga Wagga LGA covering the following scheduled activities:

- Cattle, sheep, horse accommodation
- Composting
- Concrete works
- Dairy processing
- Dangerous goods production
- General agricultural processing
- General animal products production
- General chemicals storage
- Generation of electrical power from gas
- Land-based extractive activity
- Metal waste generation
- Miscellaneous licensed discharge to waters (at any time)
- Non-ferrous metal production (scrap metal)
- Non-thermal treatment of hazardous and other waste
- Petroleum products and fuel production
- Pig accommodation
- Recovery of general waste
- Recovery of hazardous and other waste
- Recovery of waste oil
- Rendering or fat extraction
- Slaughtering or processing animals
- Thermal treatment of hazardous and other waste
- Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste.

PFAS Investigation

Per- and poly-fluoroalkyl substances (PFAS) are manufactured chemicals that are used in products that are resistant to heat, grease and water. PFAS have been used in Australia and around the world in many common household products and specialty applications including non-stick cookware, fabric, furniture and carpet stain protection applications and various industrial processes.

PFAS are known to be present in legacy formulations of aqueous film forming foam (AFFF) that has been used extensively worldwide, and within Australia for several decades by both civilian and military authorities due to its effectiveness in extinguishing liquid fuel fires.

Legacy formulations of AFFF contained a number of PFAS that are now known to be persistent in the environment (water and soil) and in humans for an extended period without breaking down. In 2016, Defence completed a Preliminary Sampling Program at 12 Defence sites including RAAF Base Wagga. Defence commenced a detailed environmental investigation to better understand the nature and extent of PFAS on and around RAAF Base Wagga. This second stage of the investigation, called a Detailed Site Investigation (DSI), commenced in September 2017 and has

now been completed. Based on the initial findings of the DSI, a Human Health and Ecological Risk Assessment (HHERA) is being conducted. The HHERA will evaluate potential exposure pathways to people, plants and animals and will be used to inform actions to reduce PFAS exposure, if required.

Defence have undertaken to keep Local Government, State Government and the community informed through each stage of the process, and detailed reports and information are available on the Defence website.

PFAS are found at very low levels in the blood of the general population all over the world due to being exposed to small amounts of PFAS in everyday life.



Biodiversity and vegetation

Since settlement in Wagga Wagga in the 1830s more than 90% of the native vegetation cover has been cleared for agriculture and urban development. As a result a number of ecological communities have been declared endangered within the local government area. For this reason it is just as important that we manage remnant vegetation as well as restore what has been degraded through past practices. The five Endangered Ecological Communities of the Wagga Wagga area are:

- Fuzzy Box Woodland
- Myall Woodland
- Inland Grey Box Woodland
- White Box Yellow Box Blakely's Red Gum Woodland
- Aquatic Ecological Community of the Lower Murray River Catchment.

Threatened species

Council staff maintain a database of threatened species that have been found within the Local Government Area. These records are used to guide decisions for works on revegetation and habitat restoration. Squirrel Gliders are foremost among these species and the population in the Wagga Wagga LGA is listed as an Endangered Population under state legislation. There are a small number of these gliders found in Wilks Park (North Wagga Flats) and elsewhere along the river margins in the urban area.

Superb Parrots are another Threatened Species and this species is regularly seen in small numbers along the river and in Silvalite Reserve.

Noxious weeds

Noxious weeds within the Wagga Wagga City Council LGA have the potential to pose a serious threat to our natural environment, agricultural productivity and the health of the community. Noxious weeds are those plant species that can potentially bring harm to individuals and the broader community, are difficult to control and have the potential to spread quickly within and to other areas.

Private land owners or occupiers of land are required under the NSW Biosecurity Act to control any priority weed which may be present on their property. Wagga Wagga City Council staff provide advice on weed control issues and carry out regular property inspections. In addition to this, more than 300 inspections were carried out on 'high risk sites', as well as 2,600km of 'high risk pathways.'

Pest animals

Riverina Local Land Services are the lead government agency in vertebrate pest management.

Some of the main pest species in the Wagga Wagga Local Government Area include Red Deer, Fallow Deer, Pigs, Goats, Rabbits and Foxes. Foxes are a major predator of native animals and ground nesting birds. The other pest mammal species are destructive, causing detrimental impacts on the habitat of native species.

Carp are a major pest species found in the Murrumbidgee River and tributary creeks. Carp are a vigorous species that out-compete our native fish for food, habitat and breeding sites.

A recently arrived pest with only a few sightings is the Common (Indian) Myna. Mynas are aggressive and deprive native birds of food, shelter, kill native nestlings, and evict native species from nests in tree hollows.

The community is encouraged to report sightings of pest species online: www.feralscan.org.au.

It is estimated that weeds cost Australian farmers around \$1.5 billion a year in weed control activities and a further \$2.5 billion a year in lost agricultural production.

*The Wagga Wagga
LGA is home to
5 Endangered
Ecological
Communities
and more than
50 Threatened
Species of animals*

Changes to Biodiversity and Land Management Legislation in NSW

The Biodiversity Conservation Act 2016 and the Local Land Services Amendment Act 2016 commenced on 25 August 2017. At the introduction of these Acts, the Threatened Species Conservation Act 1995 and the Native Vegetation Act 2003 were repealed and amendments made to the Environmental Planning and Assessment Act 1979.

Major components of the Biodiversity Conservation Act 2016 are:

- The introduction of state-wide uniform methods and procedures for biodiversity assessments for development applications.
- Establishment of Accredited assessors to carry out all biodiversity assessments.
- The introduction of a biodiversity offsets scheme which has the objectives of identifying developments that are likely to have a significant adverse impact on biodiversity and to calculate the value of biodiversity “credits” required to offset these impacts.
- The establishment of stewardship sites which are managed to preserve the biodiversity credits for which they were created.
- The establishment of the NSW Biodiversity Conservation Trust to manage the Biodiversity Conservation Fund and oversight of stewardship sites.
- If a proponent of a development is required to obtain biodiversity credits they may choose to obtain offset credits themselves or pay the equivalent value of these credits into the Biodiversity Conservation Fund.

The Local Land Services Act 2013, as amended by the Local Land Services Amendment Act 2016, provides a new regulatory framework for the management of native vegetation in NSW.

Important features of this new legislation are:

- The development of the Native Vegetation Regulatory Map that identifies categories of rural land that are regulated by different management strategies:
 - Category 1 – Unrestricted Management (Exempt) Rural lands where clearing is not regulated by Part 5A of the LLS Act 2013. Other legislation may apply.
 - Category 2 Code Based Management (Regulated) Rural lands. where clearing is regulated and can be carried out in accordance with Part 5A of the LLS Act 2013 or other legislation.
 - Category 2 Regulated (Vulnerable) Rural land
 - Category 2 Regulated (Sensitive) Rural lands
 - Excluded land that is land not regulated by Part 5A of the LLS Act 2013.
- The State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 that regulates clearing of native vegetation not covered by the Local Land Services Amendment Act 2016, i.e. the Excluded land. Most of the land covered by this Policy is in urban areas but there some mapped areas in the rural landscape.
- A Land Management (Native Vegetation) Code that aims to achieve more effective farming practices and managing environmental risks.
- The establishment of the Native Vegetation Panel for assessment of clearing proposals that are not assessed through the Local Council and Local Land Services assessment processes.

Squirrel glider habitat restoration

Wagga Wagga City Council is a partner with the Local Land Services in an Environmental Trust funded project to establish habitat for the endangered Squirrel Glider in the area between Livingstone National Park and Nest Hill Nature Reserve. The main objective of the project is to establish an essential corridor of suitable habitat which links the National Park with the Nature Reserve and so allow Squirrel Gliders to move freely between these two reserves.

Stage 2 of the project focused primarily on negotiating and engaging landholders into management agreements to undertake on-ground works to enhance and connect habitat and has achieved the following:

- 40ha area regenerating
- 22.4ha enhanced/revegetated
- 13,581m of fencing installed
- 2735ha of connected habitat including Livingstone and Nest Hill National Parks.

Pomingalarna wattles

Council was awarded \$18,340, from the Public Reserve Management Fund Program to tackle Cootamundra Wattle which is a native invasive plant that is not indigenous to Pomingalarna Reserve. Over the past six years the plant has spread at the rate of more than 1ha per year along nearly 2.5km of the southern and western sides of the reserve and into the reserve by over 100m in places. It has destroyed the structure and species composition within the vegetation causing loss of biodiversity and displacement of native birds due to lack of niche habitats. During November 2017 and with additional work in March 2018, Cootamundra Wattle plants were removed from this area to help restore the natural ecology and visitor amenity of the reserve.

Weeds hygiene station

A weed hygiene station has been installed at the entrance of Pomingalarna Reserve. The reserve is utilised by bushwalkers, mountain bikers and people interested in the peace and quiet of the natural bushland. The reserve users are not only from local areas and visitors to Wagga Wagga can potentially carry weed seed to new locations many kilometres away. The hygiene station is part of a project to improve biosecurity to the site. Biosecurity is focused on stopping the spread of weeds into the reserve as well as stopping the spread of weed seeds from leaving the site. Visitors are encouraged to use the station to brush down items such as bikes, clothes and shoes to remove any seeds that may be present. A metal grate and sump collect the seeds, which are collected and destroyed.

Roadside vegetation management

Wagga Wagga City Council in partnership with Lockhart Shire Council have received \$88,000 in grant funding from Local Government NSW to develop a Roadside Vegetation Management Plan.

The two adjoining Local Government Areas have similar landscape features and vegetation communities as well as similar pressures on the native flora and fauna. A Rapid Assessment Methodology has been utilised to survey the conservation value of the vegetation on the roadside in prioritised areas. From this information vegetation conservation value maps as well as plans of management which will be developed. Once adopted the strategies within the plans of management will see best practice management of vegetation along roadside reserves implemented.

Marrambidya Wetland

Since its official opening in July 2016 the Marrambidya Wetland has become an important place for the community of Wagga Wagga. Many residents use the area for passive recreational activities utilising the walking tracks to exercise, enjoying the scenery and bird life attracted to the new wetland resource.

Council commitment to ongoing development at the wetland was supplemented by a grant from the Tourism Demand Driver Infrastructure Program. This program enabled Council to install additional seating at the welcome hub and a bicycle station complete with basic tools allowing quick repairs while on a ride.

Six story-telling devices (Talking-Poles) have been installed at the wetland and along the walking tracks. The stories shared on the devices are associated with the wetland, its creation, what flora and fauna can be found at the wetland, as well as Aboriginal Culture, including Wiradjuri history and stories. Wiradjuri Elders Aunty Kath Withers and James Ingram along with proud Wiradjuri man Mark Saddler have provided their voices and shared their stories on the devices for visitors to hear. Mark Saddler playing didgeridoo also features on the audio devices.

Six artworks by renowned Wiradjuri artist Aunty Kath Withers, have been installed along the entrance track to create a unique welcome into the wetland. The artworks were inspired by the wetland and memories from Aunty Kath's childhood. You can hear Aunty Kath talking about the paintings and giving a "Welcome to Country" at the audio device located nearby.

The Marrambidya Wetland provides an ideal location for school groups from Kindergarten through to Year 12 with opportunities to connect the classroom with the local environment and Wiradjuri Culture. This valuable site has been utilised by local schools to facilitate hands on learning about the environment, natural resource management and the importance of aboriginal heritage and culture.



Community education and engagement

Environmental complaints

The 2017/2018 figures in Figure 10 indicate that dumped rubbish has generated the largest number of complaints in Wagga Wagga, outnumbering barking dogs for the first time ever. Illegal dumping is a key problem for Wagga Wagga. Council staff have been successful in applying for additional funding from the NSW government to help tackle this issue through the award-winning 'Don't Dump- It's Dumb' project.

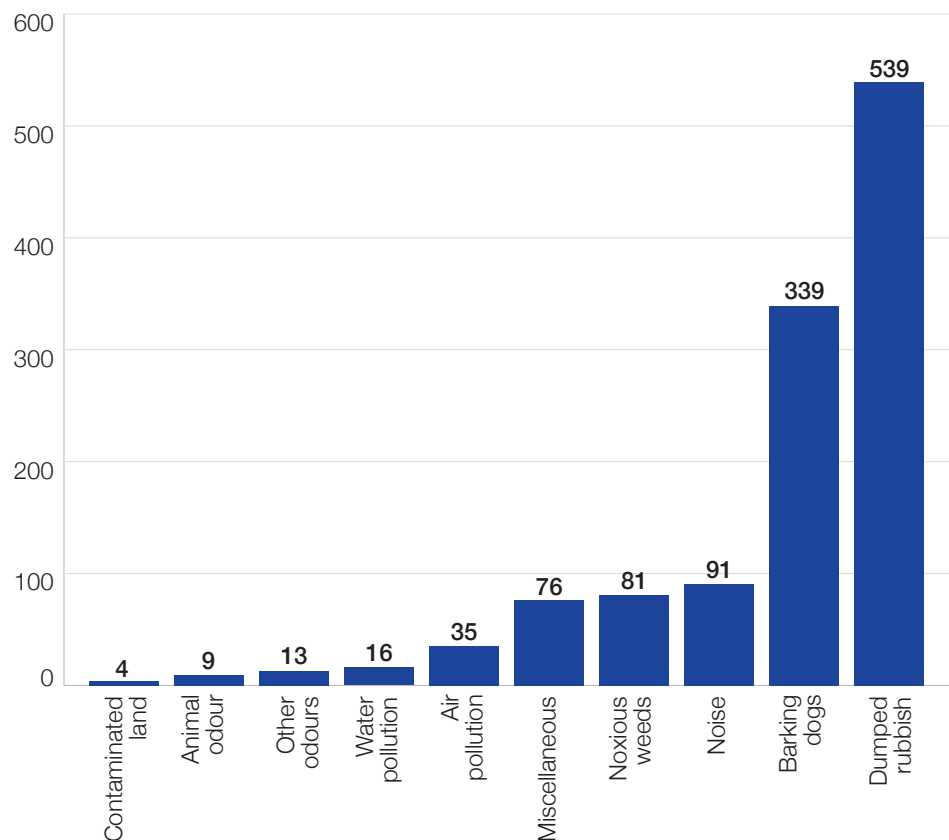


Figure 10: Environmental complaints received by Wagga Wagga City Council
Source: WWCC data

Don't dump it's dumb

The Wagga Wagga City Council was successful in obtaining another tranche of funding through Round 5 of the NSW EPA's 'Combating Illegal Dumping: Clean-up and Prevention Program' to address the problem of illegal kerbside dumping within our city. The "Don't Dump its Dumb" project aims to reduce the number of incidences of kerbside dumping, increase the timeliness of reports of illegal dumping to RiDOnline and engage with residents to educate and encourage correct disposal, and through reuse and recycling.

The project is aiming to trial principles of crime prevention through environmental design using kerbside landscaping, as well as promotion of the new hard waste collection service provided by Wagga Wagga City Council's contractor JJ Richards, the use of visible tools such as temporary signage and barrier tape to highlight incidents and the consequences to help deter illegal dumping. The project will also include free community "Trash to Treasure" workshops, to encourage reuse, re-purposing or up-cycling of old household items.

Don't be a Tosser, Cover your Load

Wagga Wagga City Council has been successful in obtaining \$39,095 funding from the NSW EPA to deliver the "Don't be a Tosser, Cover your Load" project.

The project aims to target the Gregadoo Waste Management Centre (GWMC) users that do not cover their loads or do not cover their loads correctly when transporting their waste to the tip.

The project has an active education and awareness phase, with radio, newspaper and Facebook advertisement and distribution of informational flyers. Roadside signage has also been updated along various access roads leading to the GWMC along with roadside clean ups. The regulation and enforcement phase is under way with scheduled blitzes throughout the year. Our target is to reduce the volume of roadside litter along access roads to the GWMC by 30%.

Wagga Wagga has 180 registered users for reporting litter thrown from vehicles or blown from trailers. In 2017/2018 there were 29 reports of littering observations which resulted in 16 penalty infringement notices (fines) being issued.

Tap - Great Taste Less Waste

In October 2017, Council launched a campaign to encourage residents to switch bottled water for tap water, the cheaper option that tastes great and reduces waste. The campaign involved the roll out of six water refill stations across the city, three along Baylis Street and three around Lake Albert, to encourage people to refill reusable bottles rather than buying single-use plastic bottles. Currently only 40 per cent of single-use bottles make it to the recycling bin, which is another reason why Council is encouraging residents to use reusable bottles.

At the launch of the campaign, reusable water bottles were handed out to the public, who were encouraged to make a pledge to reuse and refill bottles with tap water. So far 7,000 litres of water has been used through the new water refill stations. This means that around 11,000 x 600mL single use water bottles have been saved.

Most tap water is more heavily tested and regulated than bottled water.

Slow Clothing

In March this year, Wagga Wagga City Council in Partnership with the Wagga Wagga Art Gallery hosted Jane Milburn and her Slow Clothing movement. Jane's Slow Clothing philosophy aims to inspire change in the way we engage with what we wear to focus on health and wellbeing, not just fashion.

Jane presented a compelling presentation for why we need to change the way we dress to live lightly on Earth through everyday practice. She also hosted two workshops, first one where Jane shared her knowledge and experience on how to make surplus t-shirts into a range of pouches, bags, beanies and jewellery. In the second workshop participants upcycled old or unused garments into something new and exciting.

National Tree Day

National Tree day was celebrated on Sunday 30 July 2017 with a community planting in partnership with Wagga Wagga Urban Landcare. The planting site was located in Boorooma and saw a record of 146 volunteers attend to help plant 1,200 native seedlings.

In addition to the community day 22 schools participated in Schools National Tree Day on Friday 28 July 2017. The Wagga Wagga City Council provided 3,122 seedlings to schools and preschool across the Local Government Area to plant in their school grounds.

Food packaging, beverage containers, cigarette butts and straws are the most common rubbish items collected at Clean Up days

Clean up Australia Day

Local Clean Up Australia Day activities were conducted by the Wagga Wagga City Council on Sunday 4 March 2018. Community Groups and individuals registered 10 sites throughout the Local Government Area to tidy up. Wagga Wagga City Council, Wagga Wagga Urban Land Care and Tidy Towns hosted a community clean up activity at Williams Hill. Various items collected during the day included scrap metal, car parts, a trolley and building waste.

In addition to the community day 19 local schools participated in the annual Schools Clean Up Australia Day event to help our city clean by collecting litter from their school grounds, local parks, and bushland reserves.

School sustainability sessions

Wagga Wagga City Council offers free workshops to schools on a variety of environmental topics including water quality, waste and recycling, water consumption, urban salinity and biodiversity. More than 3,500 students participated in 86 workshops in 2017/18 including:

Got it sorted?

The way we think about waste is changing and not just at the kerbside! This workshop explores the new waste service and how our scraps become valuable compost. Students will learn what wastes should go where and explores creative ideas on how we can avoid making waste in the first place.

How we use water

Throughout this workshop, students will learn where our water comes from, how much is available, and how water is used throughout Australia. This workshop will engage with students to develop ways they can conserve water that can be used throughout their home.

Cleaning up our catchment

Water is a precious resource, but the activities that take place within a catchment can affect the quality of the water in our creeks, rivers and lakes. This workshop demonstrates how our actions can affect water-ways, the animals that live there and ultimately the water we drink.

Biodiversity blooms

Through this workshop students will learn the basics of biodiversity including what it is, why it is important and how we can all assist in enhancing our natural environment. This workshop also includes a school-ground biodiversity investigation either through a Minibeast Hunt or Biodiversity Audit depending on the year group.

Urban salinity

The urban salinity tour considers the causes of urban salinity, how urban salinity affects our community and looks at the various management strategies that have been implemented by Council and other stakeholders.

Community Wetland Tours

Since its opening in 2016 the Marrambidya Wetland has become a popular destination for guided tours and educational workshops. The wetland has had 15 large guided tours, workshops and gatherings, catering for school students, community groups and members of the general public.

Annual Grants

As part of its ongoing Annual Grants Program, Council has a funding stream specifically targeting 'Sustainable Environments'. Grants to the value of \$6,000 were awarded in 2017/2018 to not for profit/community groups who were carrying out projects deemed by the evaluation panel to have a positive environmental impact.

Community Environmental Events

The Environment team hosted many other events, tour and workshops throughout the last year including:

- Spotlight Night tours at Wilks Park and the Marrambidya Wetland
- 'True Cost' film screening about the fashion industry
- 'TAPPED' film screening
- Plastic Free July Workshop series
- National Recycling Week activities
- School for Seniors Workshops
- Wetland Wander
- Succulents and 'Grow Me Instead' stalls
- Henty Field Days stall
- National Science Week session
- Energy Bills pop up stall at Sturt Mall
- Little Big Day Out activities
- FRESH festival activities
- Markets by the Lake stall
- CSU O Week Market Day stall
- Sprout and About stall
- Lutheran Sustainable Living Festival stall.



627

Subscribers to the Sustainable Wagga eNews



492

Likes on the Sustainable Wagga Facebook page



11

EnviroChat radio spots

Awards

NSW 2017 Environmental Health Team of the Year Award, Environmental Health Australia Industry Excellence Awards

Education and awareness programs including Council's Scores on Doors program, development of an illustrated book and the 'Be Sharp' campaign

Sewerage Services Most Improved Large Local Water Utilities Award, Sam Samra Awards

Making efficiencies in the sewerage network

Excellence in the Environment Award for Behaviour Change in Waste Management, Local Government NSW

"Don't Dump, It's Dumb" illegal dumping prevention campaign

Natural Environment Protection and Enhancement Award, Local Government NSW Environment Awards

The Marrambidya Wetland project







Contact us

General enquiries? Requests? Feedback?

There are many ways you can get further information or provide feedback on this report:

Talk with us

Phone 1300 292 442 or (02) 6926 9100,
or chat online with a Council representative.

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Write to us

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Come see us

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Wagga Wagga NSW

Visit our website

wagga.nsw.gov.au

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and emergency information straight from the source.