

state of environment  
REPORT 2017

SOE





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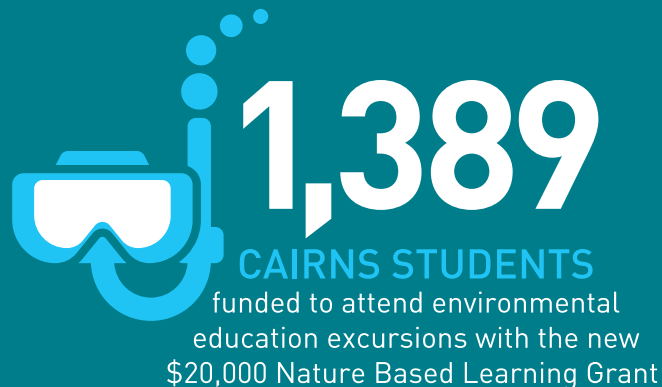
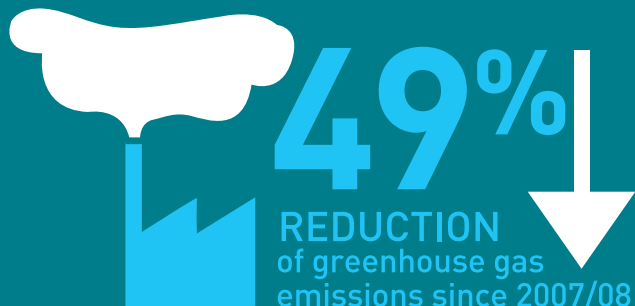


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This report has been produced by Cairns Regional Council and endorsed at the Ordinary Meeting on the 30th of May 2018.

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# STATE OF ENVIRONMENT: 2016/17 HIGHLIGHTS



**59%**  
OF WASTE  
RECOVERED



**200**  
GREEN SPACE  
OUR PLACE  
VOLUNTEERS  
SUPPORTED



**795kW** rooftop solar  
approved, bringing Council's  
total solar capacity:  
**1mW** equivalent to  
powering  
**276** households



**150ML** of water  
saved from the  
water System  
Leakage  
Detection  
Program,  
equivalent to



**4,061**

PEOPLE RECEIVED  
WATER AND WASTE EDUCATION

**\$67,500**

FUNDING FOR COMMUNITY-LED CONSERVATION  
AND SUSTAINABILITY PROJECTS &  
NATURE-BASED SCHOOL EXCURSIONS



Cairns Regional  
COUNCIL





# preface

The 2017 State of Environment (SoE) report summarises Cairns Regional Council's environmental and urban sustainability initiatives and performance for 2016/17.

The condition - pressure - response format is used throughout the report to track this progress in accordance with emerging, identified conditions of the local environment.

While SoE reporting is not a statutory requirement in Queensland, Cairns Regional Council is committed to reporting its performance to the community, with this being the twelfth release of the report.

'Cairns', 'the city' and 'the Cairns region' all refer to the Cairns Regional Council local government area.



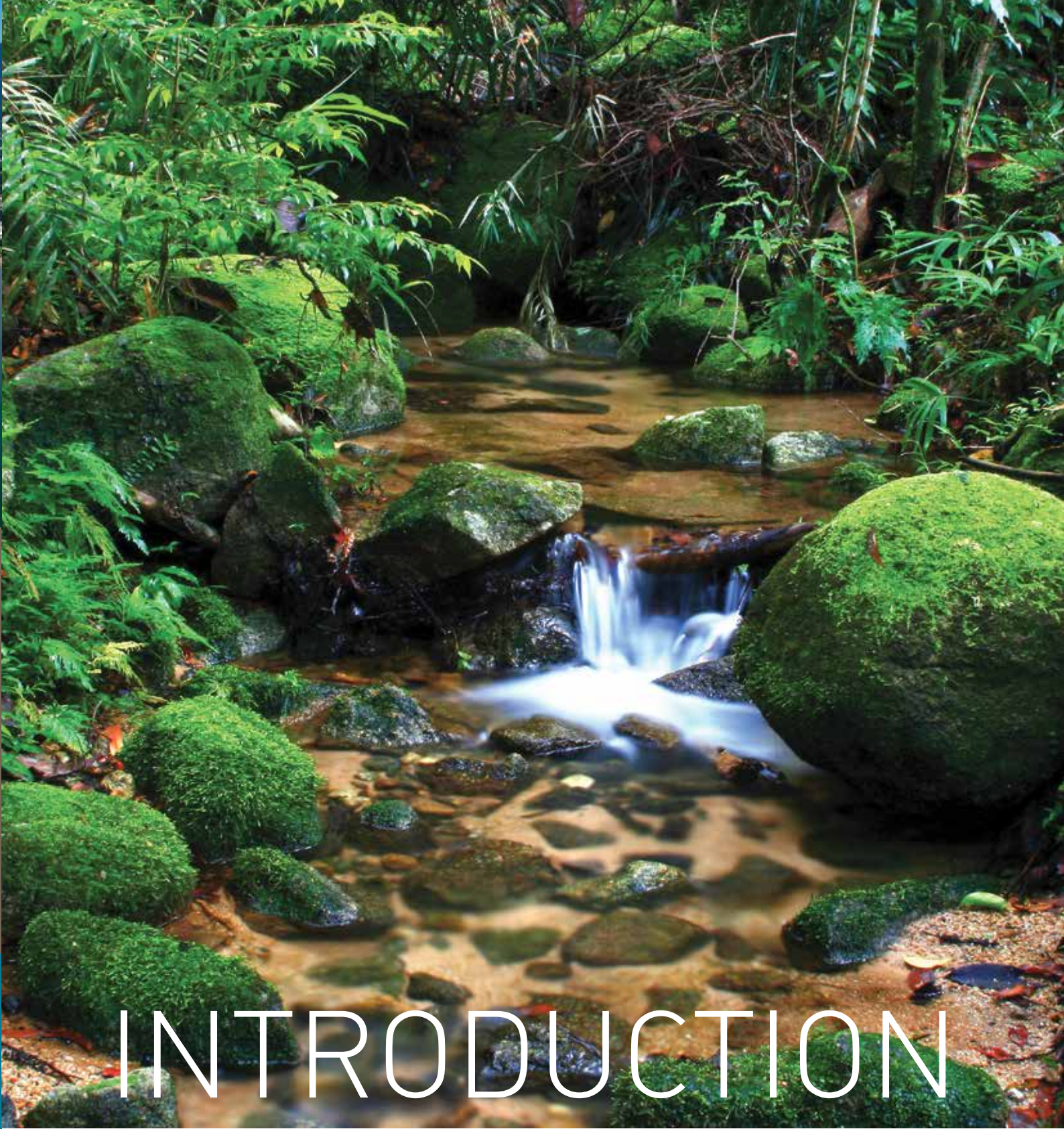
## from the mayor

The Cairns region is located on the doorstep to the World Heritage-listed Great Barrier Reef and Wet Tropics Rainforest, and our community is blessed with the lifestyle and opportunities this spectacular and diverse natural environment provides.

Cairns Regional Council remains steadfast in its commitment to reduce its impact on this environment and support residents and businesses to do the same through the various programs and initiatives you will find in this State of Environment report.

We have an opportunity to be leaders in sustainability - a job we take very seriously. So as *'there's no place like our place'*, I encourage everyone to join Council in taking care of our environment to secure the future of our region.





# INTRODUCTION

The Cairns Regional Council local government area (LGA) is located in the Wet Tropics, one of the most biodiverse regions in Australia, on the east coast of the Cape York Peninsula in a coastal strip between the Coral Sea and Great Dividing Range. It sits within the Barron, Mitchell, Mossman and Russell-Mulgrave catchments. The landscape contains wetlands and flood plains, flat coastal lands, mountain ranges and metamorphic rocks covered in rainforest and wet sclerophyll. The city is framed by the World Heritage-listed Wet Tropics Rainforest and Great Barrier Reef and more than half of the region is protected as National Park, State Forest or Forest Reserve. The region also includes a number of offshore islands including Fitzroy, Green and the Frankland Islands.

Leading environmental management in this bioregion is crucial for the resilience of local biodiversity and ecosystem services, which sustain the region's iconic natural attractions, enduring traditional connections, lifestyle and industry.



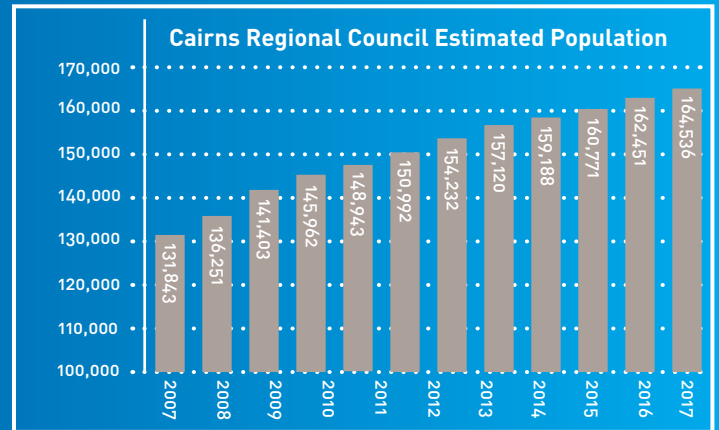
# BUILT ENVIRONMENT

## CONDITIONS

The Cairns region spans a total land area of 1,693.3km<sup>2</sup> and is home to a culturally diverse population living in both rural and metropolitan communities. As the major commercial and service centre of Far North Queensland, land is primarily managed for the following range of values:

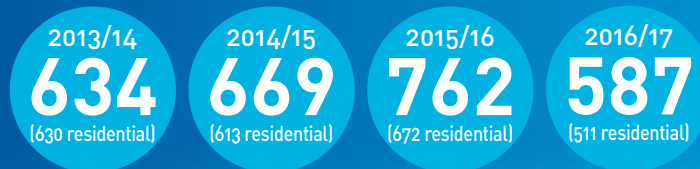
- Residential
- Industrial
- Nature conservation
- Tourism and recreation
- Cultural heritage
- Grazing, cropping and horticulture
- Mining

The Cairns Estimated Population continues to grow, with 164,536 people in 2017. The Gross Regional Product for 2016/17 was an estimated \$8.37 billion.



Australian Bureau of Statistics, Regional Population Growth, Australia [3218.0]

## BUILDING APPROVALS



Australian Bureau of Statistics, Building Approvals, Australia [8731.0]

## PRESSURES

Typically, a growing population presents the following pressures:

- Increased demand on resources, waste and waste water generation and end-point greenhouse gas emissions
- Increased infrastructure requirements
- Increased urban footprint, impacting remnant vegetation



## RESPONSE

### LAND USE PLANNING

The *CairnsPlan 2016* planning scheme, developed in accordance with the *Sustainable Planning Act 2009* sets the parameters for land use and development across the region. It balances settlement patterns, natural areas and features, economy and infrastructure to encourage growth while upholding the qualities and characteristics that make the area special. This includes a variety of planning mechanisms to address the pressures a growing population places on the local environment, overlays for environmental management and natural values and responses to climate change induced hazards.

### SUSTAINABLE BUILDINGS

Council continues its support for sustainable housing and commercial buildings with design guidelines for the tropics. It supports the annual *Sustainable House Day* and *Cairns Open House Event* that encourages local knowledge sharing.

#### NATIONAL PLANNING INSTITUTE AWARD FOR TROPICAL URBANISM POLICY

*The Tropical Urbanism: Cairns City Image Study* was a combined effort of Cairns Regional Council and a consultancy team which claimed the title of *Australia's Best Planning Idea – Small Project* at the 2017 Planning Excellence Awards. Tropical Urbanism is a contemporary built form policy that balances increased building heights and Cairns' identity as a 'city in a rainforest' with requirements for vertical landscaping. This encourages cool, shaded public spaces with shelter from the rain, passive cooling and breeze permeation with reduced heat islands and demand for energy intensive cooling. Cairns Regional Council and a team of consultants received a *National Award for Planning Excellence* for the project.



### DEVELOPMENT ASSESSMENT AND COMPLIANCE

This process involves considering assessable development proposals in accordance with the *CairnsPlan 2016* which may trigger specific conditions depending on the type of development and where it is. Once officer recommendations are approved by Councillors, landscaping and environmental plans are assessed. These plans may include revegetation, vegetation removal, or protection, weed management, erosion and stormwater control or acid sulfate soil reports. Officers form these conditions through planning triggers and onsite inspections and monitor compliance before works are permitted to commence. Ongoing education is provided to support sustainable, low water requirement landscaping which upholds biodiversity and amenity values.

In 2016/17, there was significant engagement on sediment control techniques, changes to the landscaping policy to exclude species susceptible to myrtle rust and ensuring native planting in landscaping adjacent to significant natural areas. Where non-compliance occurs, it is investigated by Council's compliance team under the *Environmental Protection Act 1994* who also respond to events such as waterway contamination and environmental nuisances like light, noise, odour and smoke.



FIND OUT MORE: [www.cairns.qld.gov.au/building-planning-business/development](http://www.cairns.qld.gov.au/building-planning-business/development)





## COASTAL HAZARDS ADAPTATION STRATEGY

Council commenced the first two phases of a Coastal Hazards Adaptation Strategy for the region with partial funding from the Queensland Government QCoast 2100 Program. The eight phase program will facilitate the development of high quality localised information and a coordinated, long term plan for adapting to coastal hazard risks in the region.

## DISASTER RESILIENCE

Council builds disaster resilience through detailed planning, partnerships and projects to help the region prevent, prepare, respond and recover from local disasters. This is guided by the *Cairns Region Local Disaster Management Plan* and a robust community education program. In 2016/17 Council:

- Developed a leading practice resilience assessment with the United Nations Office for Disaster Risk Reduction.
- Supported the region's schools with resources on environmental care and disaster resilience.
- Partnered with Cairns Community Radio to train thirty community members to do broadcast training in seven languages for delivering emergency updates in a disaster.

## URBAN ENVIRONMENTAL MANAGEMENT

### LITTER AND ILLEGAL DUMPING

Littering and dumping are illegal and Council investigates cases and enforces fines. Over 1,000 public place bins are maintained by Council, along with regular street sweeping to reduce the amount of litter and debris entering our stormwater system and marine environment.

In 2016, Council supported the annual *Great Northern Clean Up* which involved over 200 community members removing litter from parks, beaches and local waterways. Council also supports community-led clean ups throughout the year.

### VECTOR CONTROL COAST ADAPT CASE STUDY

Council took part in a case study for *Coast Adapt*, a National Climate Change Adaptation Research Facility program to better inform its on-going management of vector-transmitted diseases such as Ross River Virus in a changing climate.





Agile wallaby

### **FLYING FOX EDUCATION AND MANAGEMENT**

Council has established a Flying-fox Advisory Committee to increase the understanding of issues relation to the management of flying-foxes particularly in an urban setting. Council has also partnered with the Australasian Bat Society to deliver 30 educational sessions known as 'Bat Chats' at the Cairns City Library Spectacled Flying Fox roost site. Reaching over 1,000 locals and visitors, the sessions raise awareness about the ecological role of the often misunderstood, endangered key-stone species. This message is reinforced with the annual *Cairns Bat Festival*, held in partnership with the Cairns and Far North Environment Centre and the Australasian Bat Society.

Council has multi-faceted strategy to managing flying-foxes in urban areas, which can be found online:

[www.cairns.qld.gov.au/\\_\\_data/assets/pdf\\_file/0008/91268/Flying-Fox-Colony-Management-General-Policy.pdf](http://www.cairns.qld.gov.au/__data/assets/pdf_file/0008/91268/Flying-Fox-Colony-Management-General-Policy.pdf)

This is guided by recommendations from the Flying-fox Advisory Committee.

### **AGILE WALLABY POPULATIONS**

Council determined the need to produce Agile Wallaby management plans for proposed developments in proximity to identified populations in the region, namely in the Northern Beaches, Barron River Delta and White Rock areas. The plans aim to naturally disperse populations without culling, mustering or relocation through a staged application of temporary fencing to gradually guide populations to larger, adjacent areas of habitat over a number of years. In 2017, Council commissioned its own study to assess the density, distribution, make-up and health of these growing populations to further consider site-specific management options. Nature corridors and areas of land have also been reserved from development and designated as refuges for wallabies. This land will remain under Council ownership and will ensure wallaby populations are sustained for the future.



# LOW CARBON TRAVEL



## Electric Vehicles

In early 2017 Council, in collaboration with Economic Development Queensland installed an electric vehicle (EV) charging station at the Esplanade as a part of the Queensland Government's Electric Super Highway- the longest EV highway in any single jurisdiction in the world. The station was the first to be installed as a part of the Super Highway, paving the way for travel to the Gold Coast. The charging station is powered by Greenpower, supporting renewable energy projects in Australia.

## Active Travel

Council delivered the 4km Mann Street Cycleway in 2017 which provides a safer and more convenient route than the parallel, highly trafficked Mulgrave Road. This important connection was part of a \$1.35 million project funded by the Queensland Government. In addition to this, the Gordon Creek Underpass and Stage 1 of the Northern Cycleway were also completed.

Council promotes and encourages bicycle commuting through the provision of cycling maps, monitoring of cycling participation and hosting the annual *Ride2Work Day* event. In 2017, a survey of 250 households suggested that 20.2% of residents ride a bicycle in a typical week, with more than one third having done so in the past year - a 2.5% decrease from 2016 [Local Government Research Group, 2017].

# COMMUNITY ENGAGEMENT

Council is committed to providing the community with pathways to take environmentally responsible actions and increase sustainability skills, with the following initiatives delivered in 2016/17:



## Cairns ECOfiesta

Council held the third annual ECOfiesta, celebrating sustainability and the natural environment.

An estimated crowd in excess of 10,000 people attended the festival that featured a vibrant eco-entertainment program, local suppliers, workshops and over 120 diverse stalls promoting and encouraging sustainable living. ECOfiesta 2017 was delivered with waste-wise principles and was supported by local sustainability groups, eco-tourism operators and the presenting partner, Ergon Energy.

## ECOenergy Forum

The inaugural ECOenergy Forum was delivered as a part of the ECOfiesta 2017 program in partnership with Ergon Energy and Vector Energy. The forum provided local businesses with education for sustainable energy management including account optimisation, energy efficiency, solar PV investment, electric vehicle fleet options and renewable energy solutions and storage.



A Tropical North Queensland Innovation Awards winner, Portagrid with their transportable, re-deployable renewable generation and storage system at the 2017 Cairns ECOfiesta.

## Tropical North Queensland Innovation Awards

Council recognises, rewards and supports innovative businesses with the biannual Tropical North Queensland Innovation Awards. The Awards featured winners across renewable energy, natural resource management, waste diversion and local-made products and included an Eco Innovation category.

## Cairns District Schools Science and Environmental Sustainability Enrichment Program

Council has funded this program, run by the Holloways Beach Environmental Education Centre, since 2014 which partners talented Year 5 science students with industry mentors to develop sustainability projects in their schools and community.

During 2017, student developed projects including litter reduction and tree planting resources, erosion and aquatic life monitoring, childrens books, video games and films to reduce carbon emissions and plastics pollution.

**4,061** PEOPLE RECEIVED WATER, WASTE AND RECYCLING EDUCATION FROM COUNCIL IN 2016/17 THROUGH FACILITY TOURS, SCHOOL VISITS, WORKSHOPS AND EVENTS.



## ECOarts

Council matched funding from the Regional Arts Development Fund to support artists to produce pieces which celebrate our local biodiversity or highlight a sustainability challenge. \$4,000 was awarded to local practitioners who produced performance pieces of iconic animals, a sculpture made from marine debris and a wearable art show highlighting species impacted by climate change.

Council also delivers the annual Understory Film Festival which includes an environmental award category for emerging filmmakers.



## Nature Based Learning Grant

Council established this \$20,000 grant program in 2016 to support local schools to deliver nature based excursions. During 2017, 1,389 students from 13 schools attended excursions to learn about their local environment, history and culture.

The schools were:

- Isabella State School
- Mirriwinni State School
- Woree State School
- Smithfield State High School
- Bartle Frere State School
- Cairns School of Distance Education
- Bentley Park State School
- Gordonvale State School
- Cairns State High School
- Trinity Beach State School
- Edge Hill State School
- Trinity Bay State High School
- Redlynch State College

## Community Sustainability Grant Funding

Council has established a \$25,000 funding pool to support projects that deliver biodiversity conservation, energy and water efficiency, waste reduction, low carbon travel and sustainability education. In 2016 the following projects received funding:

- *Cairns and Far North Environment Centre*: Boomerang Bags, Cairns Chapter - a community effort to sew reusable bags for the public to reduce their reliance on single use plastic bags, whilst upcycling discarded textiles.
- *Children for Change*: Awareness & Interactions between Children and their Environment Club - a year-round after school nature-based learning program.



- *Rubber Side Down Cycling Collective*: A do-it-yourself community workshop teaching bicycle maintenance.
- *Permaculture Cairns*: Community workshop series on cultivating and cooking tropical foods.
- *Manoora Community Garden*: Community shed to support the garden's activities.
- *Cairns Youth and Recreation Centre*: LED Lighting Installation to improve energy efficiency.

An additional \$18,500 in funding was provided to Treeforce, Mulgrave Landcare and Cairns Urban Landcare for revegetation in the region.



## Green Space our Place

This Council volunteer program grows community involvement in the region's local gardens, parks, reserves, waterways and walking tracks. The community effort includes revegetation, gardening, nursery work and provision of guided tours for the public. These sites include Cattana Wetlands, Botanic Gardens, the Mt Whitfield Arrow Tracks, McLeod St Pioneer Cemetery, Jalarra Park in Stratford, Keith Edwick Park and Silky Oak Court Park as well as various resident-led reserve improvements. During 2016/17, over 200 active volunteers planted 3,267 native plants and propagated 16,000 seedlings.



## Community Gardens

Council supports community food production and in 2016/17, provided land use agreements and connection of water for the Manoora Community Garden and Holloways Beach Community Garden. Additional funding delivered fencing at Holloways Beach and the building of a large shed at Manoora.

## Tropical Tree Day

A total of 500 trees were planted by 200 volunteers at Cattana Wetlands for the annual Tropical Tree Day 2016.





**59%**  
OVERALL  
RECOVERY RATE  
AHEAD OF THE QLD  
AVERAGE OF  
**44.1%**

# WASTE & RECOVERY

Council processes waste for recovery and recycling through three major facilities shown below. Because there are no new landfills permitted in Cairns, the majority of waste that is not captured by these recovery processes is transported to landfill in Mareeba. There are three smaller private waste disposal facilities also operating in the Cairns region.

## WASTE AND RECOVERY OPERATIONS

The overall recovery rate of materials received at Council facilities is 59%. Green waste accounts for 39% of materials recovered, followed by compost at 27%, mixed recycling at 10% and metal at 7%, in terms of weight. 90% of materials collected by Council are domestic, with the remainder received from the construction and demolition, and commercial and industrial sectors. These sectors dispose the majority of their waste and recycling at private landfills in the region.



## WASTE AND RECOVERY EDUCATION

During 2016/17 over 2,800 residents participated in 57 waste and recovery education sessions including waste and recovery facility tours, school visits, workshops and events. Council supported schools with waste and recovery education resources including teaching resources and free recycling services available for schools. A robust communications strategy including press ads, public place signage and billboards, cinema advertising, social media and a dedicated 'Recycle Right' website delivers important waste and recovery messages to the public.

## GREEN WASTE

A total of 22,544 tonnes of green waste was recovered by Council in 2016/17. Free domestic green waste drop off is also available for residents twice a year. Council produces free garden mulch for residents from the material, assisting with water retention in gardens before the dry season.

## CRUSHED GLASS RECYCLING

Council installed facilities in 2015 to process and crush residual glass from the residential recycling stream. A total of 965 tonnes was produced in 2016/17 and used in applications such as the construction of the new Cairns Performing Arts Centre.

## E-WASTE RECYCLING

E-waste is one of the fastest growing waste streams in Australia. In 2016/17, 151.6 tonnes of E-waste was collected as a part of the National Television and Computer Recycling Scheme and sent to Endeavour Industries, with 125.7 tonnes of various commodities recovered.

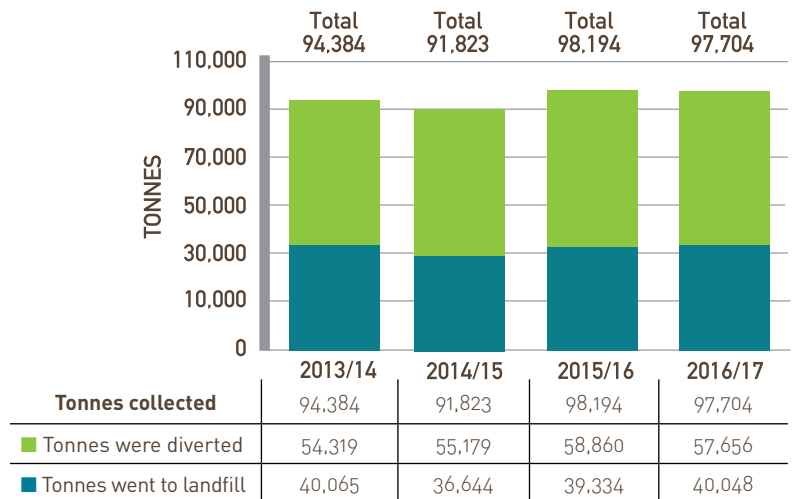
## PAINT RECYCLING

Portsmith and Smithfield Transfer Stations became collection points for the Paintback Product Stewardship Scheme in December 2016 with 49,950 litres of paint received for recycling in six months.

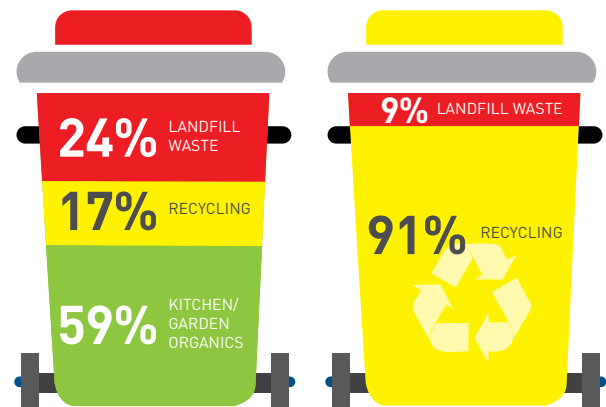
## BATTERY RECYCLING

Free household battery recycling became available at Council Transfer Stations in July 2016, with 3,050 kg of batteries collected in 2016/17. This was supported with the establishment of collection points at Cairns libraries for convenience, further reducing the amount of harmful toxins entering Cairns' waste stream.

## CAIRNS REGIONAL COUNCIL WASTE & RECOVERY



Note: Datasets from 2013/14- 2016/17 have been updated with improved accuracy.



2016 Kerbside Collection Contamination Audit

## CONTAMINATION

In terms of contamination in kerbside waste and recycling, the 2016 audit showed that 17% of kerbside waste could have been recycled and almost 9% of kerbside recycling was non-recoverable. None the less, as testament to Council's investment in waste education, current contamination rates represent a 13% reduction in kerbside waste contamination and a 6% reduction for kerbside recycling since 2010.

## BUY BACK SHOP

The Buy Back Shop processes around 600 tonnes of material annually and receives around 580 visitors per week for a variety of items that can be reused and repurposed.

## METHANE FLARING

Council has captured and flared methane from the closed Portsmith Landfill since 2012, destroying 6,552 tonnes of CO2 equivalent in 2016/17. The project earns Australian Carbon Credit Units which help to offset operational costs.



A full list of recycling services, information on The Buy Back Shop and other community initiatives can be found online: [www.cairns.qld.gov.au/water-waste-roads/waste](http://www.cairns.qld.gov.au/water-waste-roads/waste)





*Aegialitis annulata*

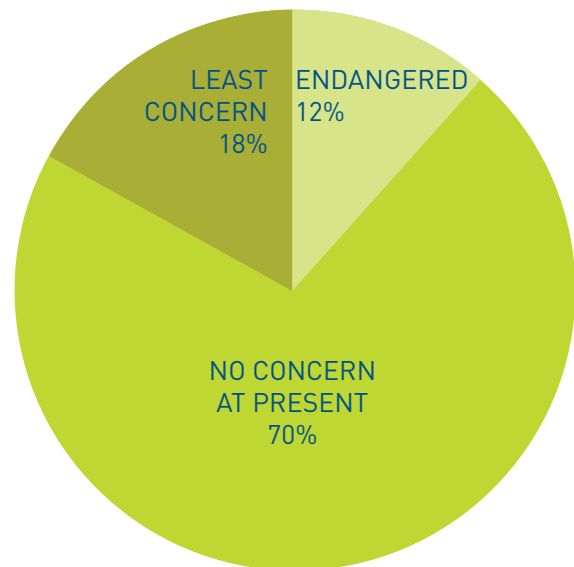
# BIODIVERSITY

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## CONDITION

Cairns is located in area of rich biodiversity and includes areas of the World Heritage-listed Wet Tropics Rainforest. From surveys released in 2017, there was 68% of remnant vegetation cover in the LGA in 2015 (Queensland Government). This represents 1,132.8 km<sup>2</sup> of original vegetation but does not include mangroves or grasslands. The biodiversity status of regional ecosystems in the Cairns LGA is highlighted to the right and is based on their status in the wider bioregion as classed in the *Vegetation Management Act 1999*. These definitions and further information can be found online.

### BIODIVERSITY STATUS OF REGIONAL ECOSYSTEMS BY PERCENTAGE OF REMNANT VEGETATION IN CAIRNS LGA (2015)



Queensland Government, 2017

### QUEENSLAND CONSERVATION STATUS OF SPECIES PRESENT IN THE CAIRNS LGA, 2017 (AS PER THE NATURE CONSERVATION ACT 1992)

**3,345**  
FLORA AND FAUNA SPECIES  
RECORDED IN THE CAIRNS LGA.  
**402**  
ARE INTRODUCED

QLD CONSERVATION STATUS	NUMBER OF RECORDED SPECIES IN CAIRNS LOCAL GOVERNMENT AREA
Least Concern	3,116
Special Least Concern	62
Near Threatened	45
Vulnerable	72
Endangered	41
Extinct in the Wild	9
<b>TOTAL</b>	<b>3,345 (402 INTRODUCED)</b>

Queensland Government, 2017

## PRESSURES

- Invasive flora, fauna and pathogens
- Habitat degradation, fragmentation and loss
- Changes in climate affecting ecosystem structure and function, species distribution, inter-species relationships and life cycle timing
- Population pressures such as traffic and increased domestic animals
- Altered hydrology patterns and fire regimes



White lipped green tree frog



## RESPONSE

Over 50% of the total Cairns LGA (1,693.3km<sup>2</sup>) is protected as Forest Reserve, National Park or State Forest and an additional 8% is zoned for conservation under the Cairns Regional Council *CairnsPlan 2016*.

COUNCIL PROVIDED  
**\$18,500**  
 in funding to  
 TREEFORCE,  
 MULGRAVE LANDCARE &  
 CAIRNS URBAN LANDCARE  
 2016/17

## REVEGETATION AND HABITAT RESTORATION

Council is committed to ensuring that natural areas are maintained, enhanced, connected and works with stakeholders across the region who are responsible for land management. Council assists local land care groups with funding, education, site coordination (site access, planting preparation and maintenance) and plant stock supplied from Council's Stratford Nursery. Through this support, the following projects were delivered in 2016/17:

### NUMBER OF SEEDLINGS PROVIDED TO GROUPS FOR REVEGETATION SITES

**2,723**  
**CONSERVATION VOLUNTEERS AUSTRALIA**  
 McPauls Creek- Kamerunga Bellenden Kerr, and Redlynch.

**2,645**  
**TREEFORCE**  
 Freshwater Creek- Redlynch and Cairns Central Swamp.

**1,000**  
**RUSSEL LANDCARE AND CATCHMENT GROUP**  
 Giddens Creek- Babinda.

**4,020**  
**TERRAIN NATURAL RESOURCE MANAGEMENT**  
 Richters Creek- Yorkey's Knob.

**1,250**  
**MULGRAVE RIVER LANDCARE**  
 Mulgrave River and tributaries.

**500**  
**DAWUL WURU ABORIGINAL CORPORATION & TERRAIN NRM**  
 Cattana Wetlands and Redlynch.

**2,092**  
**GREEN SPACE OUR PLACE VOLUNTEERS**  
 Various locations.

**500**  
**TROPICAL TREE DAY ATTENDEES**  
 Cattana Wetlands.

**584**  
**STUDENTS, TEACHERS AT LOCAL SCHOOLS & AFTER SCHOOL PROGRAMS**  
 Edge Hill SS, Gordonvale SHS, Isabella SS, Cairns SHS, Redlynch SS, Marlin Coast Family Daycare & Children for Change after school program.

**230**  
**COUNCIL - NATURAL ASSETS MANAGEMENT**  
 Sheehy St- WhiteRock and Freshwater Creek- Brinsmead.

**890**  
**COUNCIL - NATURAL ASSETS MANAGEMENT**  
 Five sites along the Russell River- Babinda for the Cairns River Improvement Trust.



## BIOSECURITY

Upholding biosecurity is essential for the integrity of local ecosystems and industry, especially agriculture and tourism. The Wet Tropics provide favourable conditions for pests to spread throughout the year, posing significant challenges to land managers. Council has a legislated role to ensure declared pests are controlled within its boundary and can also declare weeds through local laws.

### FIRE MANAGEMENT

Council has responsibilities for managing bushfire risk in the region under the *Disaster Management Act 2003* and *Local Disaster Management Plan*. In 2016/17, Council invested 577 hours into maintaining and improving fire breaks and emergency access tracks, with particular attention on the Eastern side of Mt Whitfield.

### WEED IDENTIFICATION AND CONTROL

Council has prioritised 20 weeds in the region with the following species receiving the greatest management effort in 2016/17:

- Thunbergia, Brilliantasia, Salvinia, Glush Weed, Hymenachne, Alligator Flag Weed, Giant Sensitive Plant, Kudzu, Siam Weed, Sicklepod and Leucaena.

### PEST ANIMAL MANAGEMENT

Council provides the following control of invasive fauna:

- Feral Pigs – ongoing install of traps on loan to land owners resulting in 198 feral pigs humanely destroyed.
- Wild Dogs – in 2016/17, cameras were set up on five occasions and three dog traps set by Council with no video evidence or wild dogs caught.
- Indian Myna Birds - Council provides funding to the *Cairns Remove Indian Mynas* campaign for community trapping of the aggressive species.

### INVASIVE PLANTS AND ANIMALS SURVEILLANCE PROGRAM

Council developed an *Invasive Plants and Animals Surveillance Program* in line with new powers under the *Biosecurity Act 2014* to ensure pest species are better managed on both public and private property. The program provides a long-term method for monitoring priority pest species and standard courses of action to control biosecurity risks. The program is directed at landholders and includes technical assistance and tools, the development of property pest management plans and the power to issue infringements.

### DOMESTIC ANIMAL MANAGEMENT

Council's encourages responsible pet ownership which can limit the impacts of feral and un-restrained domestic cats and dogs on local wildlife. This includes education, the re-introduction of cat registration and promotion of pet de-sexing. Around 1,800 animals are impounded each year, largely for wandering and in 2016/17 Council installed 111 cat traps to help control feral populations and set four dog traps.



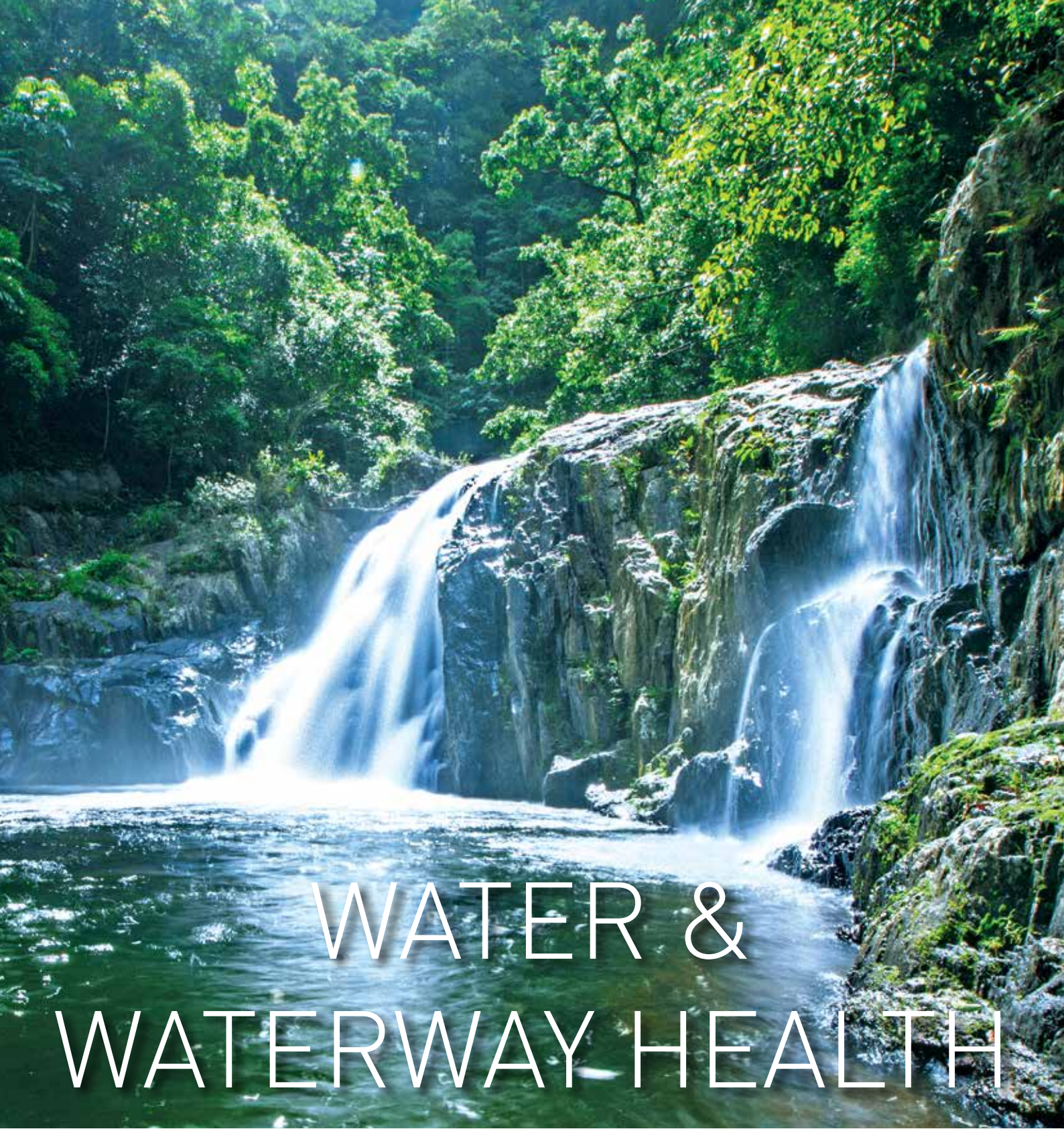
*Thunbergia laurifolia*

#### CAIRNS REGIONAL COUNCIL NATURAL ASSETS MANAGEMENT TEAM

	2013/14	2014/15	2015/16	2016/17
<b>Total Staff Hours</b>	6,532	6,794	4,880	4,687
<b>Weed Control</b>	4,652	4,914	3,189	2,960
<b>Pest Animal Control</b>	1,880	1,880	1,691	1,727
<b>Feral Pigs Destroyed</b>	135	137	138	198

[Weed control hours are down in 2016/17 with the development of an *Invasive Plants and Animals Surveillance Program* and significant fire trail upgrades].





# WATER & WATERWAY HEALTH

The Cairns local government boundary includes the Barron, Mitchell, Mossman and Mulgrave-Russell drainage basins and over 90km of wetlands. The majority are estuarine habitats (with mangrove and related tree communities), palustrine habitats (such as swamps or billabongs) and riverine habitats.

Of the wetlands in the area, nine are of national importance. These wetlands not only support great biodiversity but also the Cairns water supply, a network spanning over 2,000 kms sourced from ten locations including Lake Morris, Behana Creek and small intakes. Much of this flows into the Great Barrier Reef catchment, with Council's boundary including the Frankland, Green and Fitzroy Islands.



# CONDITION

The 2017 *Wet Tropics Report Card* assesses the health of waterways, with the latest grades based on data from 2015/16. The report card is delivered by the *Wet Tropics Healthy Waterways Partnership*, of which Council is a founding member, providing funding, in-kind support and significant data. Full details of the Report Card can be found online: [www.wettropicswaterways.org.au/report-card-2017/](http://www.wettropicswaterways.org.au/report-card-2017/)

## Regional Drivers

**Legend**

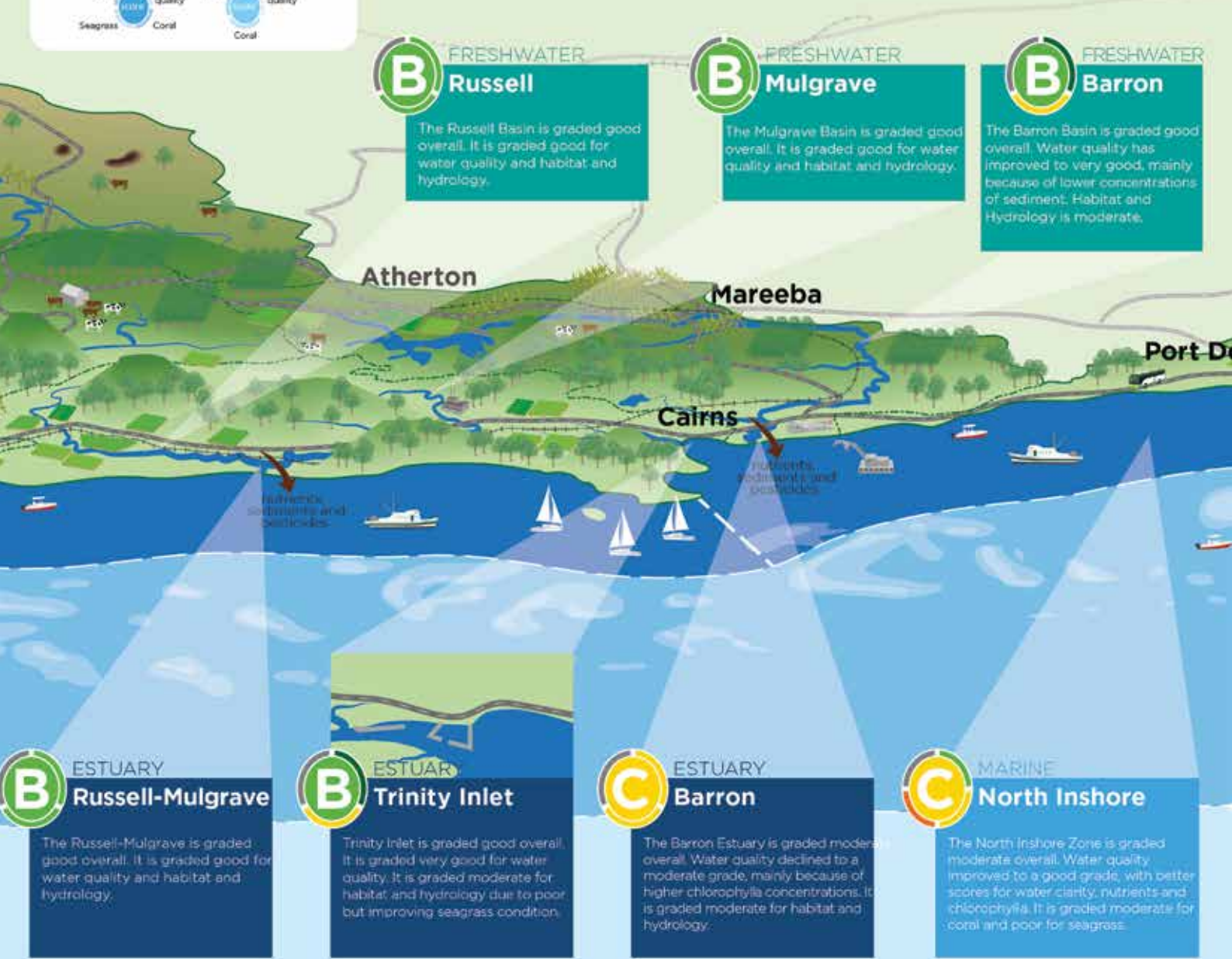
A very good    B good    C moderate    D poor    E very poor    Insufficient data

**Freshwater Indicators**  
 Fish (score)    Water quality  
 Habitat and hydrology

**Estuary Indicators**  
 Fish (score)    Water quality  
 Habitat and hydrology

**Inshore Marine Indicators**  
 Fish (score)    Water quality  
 Seagrass    Coral

**Offshore Marine Indicators**  
 Fish (score)    Water quality  
 Coral

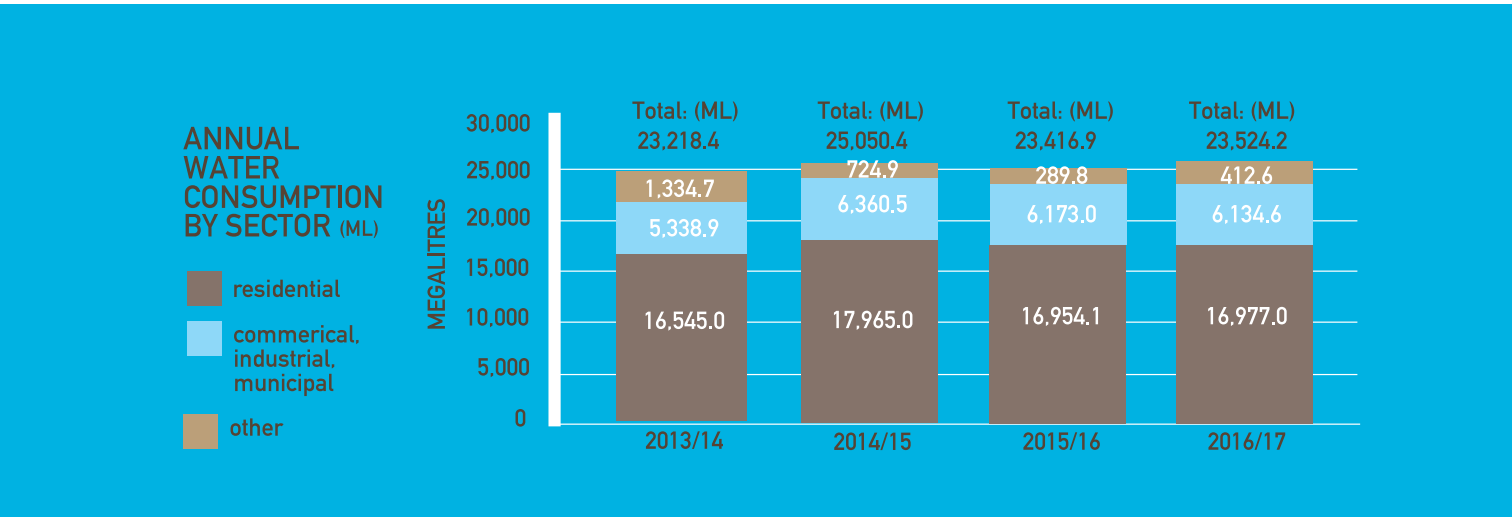




# PRESSURES

- Pollution such as sediment, nutrients and contaminants: the region is one of the highest priority areas for reducing nutrient run off into the Great Barrier Reef and is of high priority for pesticide run off (*GBR Marine Science, 2015*). Sediment and litter can also threaten marine life.
- Climate change impacts such as the increased frequency of severe weather events, ocean acidification, rising sea temperature and rising sea levels.
- Modification of hydrology and water flows.
- Habitat disturbance or loss including riparian, mangrove and saltmarsh communities.
- Invasive species.
- Unsustainable fishing and recreational impacts.
- Increased demand for potable water.

TOTAL  
WATER CONSUMED  
2016/17  
**23,524.2ML**  
(excluding recycled water and urban stormwater reuse).



# RESPONSE



## REEF GUARDIAN COUNCIL PROGRAM

Council joined the Reef Guardian Council program in 2008, a Great Barrier Reef Marine Park stewardship program which provides the framework for Council to align its education, catchment management, urban water cycle and storm water activities with the 35 local government actions identified in the Reef 2050 Plan.

## WATER QUALITY MANAGEMENT

### WASTE WATER TREATMENT, MONITORING AND REUSE

There are six sewage treatment plants in Cairns, with four upgraded as a part of the *Cleaner Seas Project* in 2009. This enabled the production of exceptionally clean Class A recycled water and significantly reduced amounts of nitrogen and phosphorus discharged into local waterways, the Trinity Inlet and inshore waters of the Great Barrier Reef.

Total wastewater treated by Council in 2016/17 was 19,257.5ML, representing 285.2 kilolitres per property. Of this, 8.8% was recycled and used in applications such as irrigation on Cairns' major golf courses, Yorkeys Knob State Primary School and the Cairns Botanic Gardens - reducing pressures on Cairns' water supply.

### WATER QUALITY MONITORING

Council undertakes on-going monitoring of receiving waters, ground water and around wastewater facilities. This data is essential for meeting Council's environmental management obligations and informs improved catchment management beyond Council's jurisdiction, through the *Wet Tropics Healthy Waterways Partnership*. In 2017, this monitoring program was externally reviewed.

Council also supports community monitoring initiatives such as the Holloways Beach Environmental Education Centre's activity in Thomatis Creek, St Monica's College monitoring in the Mulgrave catchment and James Cook University research in the Barron River catchment.

### STORMWATER MANAGEMENT

Council investigates contamination events and maintains a gross pollutant trap network to capture sediment and other debris such as litter in some areas of the stormwater system. In 2016/17 this amounted to 289.1m<sup>3</sup>. The amount not captured by the network is unknown.



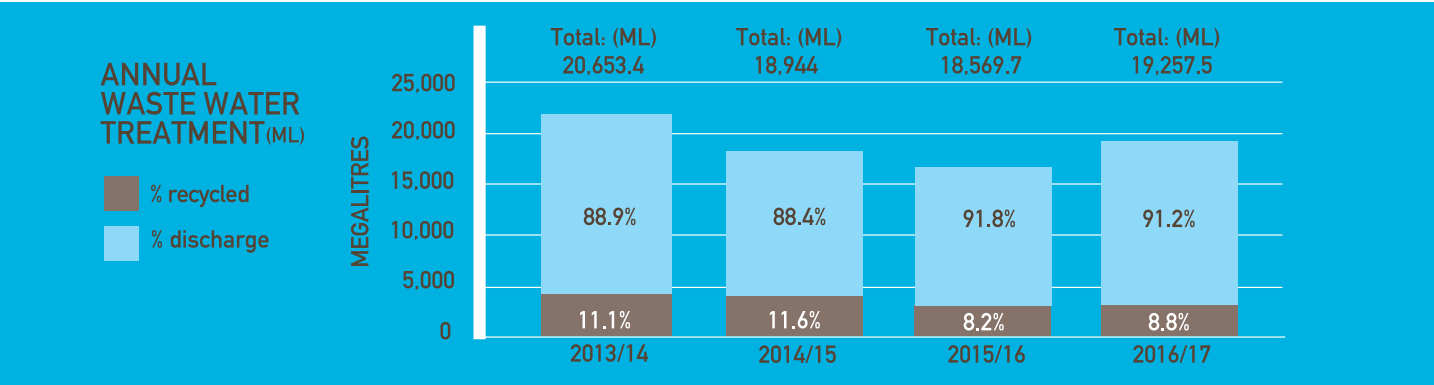
Around \$7 million is invested annually to maintain the region's network of 260 plus drains and waterways to reduce the impact of flooding from king tides and heavy rainfall on the built environment.

### WETLAND WEED MANAGEMENT

Weed infestations can affect wetlands by disrupting habitat, natural flows and drainage, fishing grounds and visual amenities.

In 2016/17, Council continued working in partnership with Jaragun Pty Ltd to control the Glush Weed infestation in Babinda Creek and the Russell River. Significant progress was made to reduce core infestations and Jaragun Pty Ltd provided riparian revegetation.

In partnership with Skyrail and Tjapukai Cultural Park, Council aimed to eradicate *Salvinia* at Avondale Creek and Cattana Wetlands. The Cairns Botanic Gardens, Coastwatcher Park (Trinity Beach), Billy Jagar Environment Reserve (Holloways Beach), Barron Waters Park (Lake Placid) and Coastwatchers Park (Trinity Beach) also received management efforts for *Salvinia*.







## WATER CONSERVATION

Water conservation is important to uphold the environmental flow of local ecosystems, conserve electricity (reducing resultant greenhouse gas emissions) and to maintain adequate storage for a growing population. Council developed a *Demand Management Strategy* in 2015 based on the recommendations of the *Water Security Advisory Group* which guided the delivery of the following initiatives in 2016/17:

### LEAKAGE DETECTION PROGRAM

Between October and December 2016 a comprehensive leakage survey spanning 726 kilometres was carried out on water pipelines between Bentley Park and the Russel River. 160 leaks were found on private property and Council's reticulation system. The savings from their repair amounted to 150ML of water per annum – the equivalent usage of 450 new, average sized residential properties.

### INTELLIGENT WATER NETWORKS

Council committed \$15.9 million dollars over five years to replace all 55,000 water meters in the region's water network with smart water meters. The technology will allow quick and easy identification of concealed leaks and the development of an interface for customers to monitor usage, reducing unnecessary wastage.

### WATER RESTRICTIONS

Permanent water restrictions are in place for private gardens and commercial watering in the region, with set times for reduced evaporation and reduced watering days. Council can also implement further restrictions and penalties under the *Water Supply (Safety & Reliability) Act 2008* when needed.

### WATER EDUCATION

Council has an ongoing water conservation education program which, during 2016/17, directly reached 1,261 Cairns Residents. Council also launched the *Thrive* campaign- a suite of materials to reduce water use in Cairns' gardens. This included a mobile phone application with recommendations on the frequency of watering for popular plants and a multi-media advertising strategy to curb unnecessary water consumption in the dry season.

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### COUNCIL SHARES EXPERTISE WITH VIETNAMESE WATER PROVIDER

In 2017, the *Australian Water Partnership*, an initiative of the Australian Government, supported Council to partner with Vietnam's Son La Water to share and develop best practice in:

- Water safety and security
- Minimising water wastage and implementing effective demand management
- Asset management, maintenance and strategic infrastructure planning.

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# COUNCIL OPERATIONS

Cairns Regional Council is committed to embedding sustainability into its operations. As one of the largest organisations in the region there are significant opportunities to lead the way to ensure benefits for the environment, economy and community for the well-being of present and future generations.

## CORPORATE PLAN

Council's *Corporate Plan 2017-2022* was informed by the *Our Cairns Community Engagement Program* which received over 6,446 responses. The Corporate Plan's strategy is to "promote an environment which values and enhances Cairns' unique lifestyle, iconic natural assets, supports a sense of community and furthers economic prosperity".

The plan also reflects Council's vision to "value our natural environment, lifestyle and surroundings" and for "iconic natural assets to be maintained, enhanced and connected".

### 2016/17 Operational Budget

\$287 million

### 2016/17 Capital Works Budget

\$178.5 million

## OUR CAIRNS SURVEY: TOP RESULTS FOR CAIRNS' FUTURE STRENGTHS

47%

A green, tropical region that values our natural assets

28%

A region with a diverse economy

24%

A vibrant region with events and activities for the whole community

23%

A region that has clean air and waterways, sustainable energy and waste resource recovery

20%

A region where traffic moves and makes it easy for locals and tourists to get to their destination

20%

A Smart region that uses technology solutions to support a livable, vibrant, productive, sustainable community



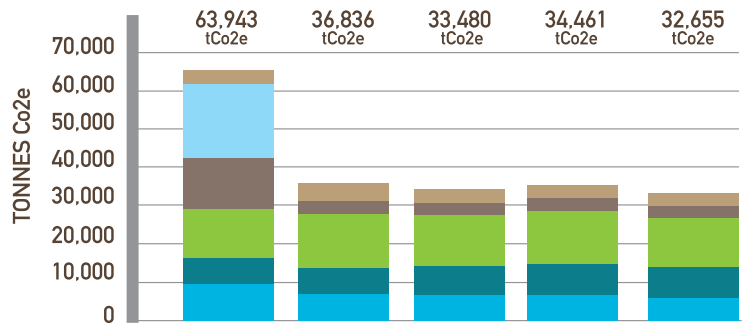
# CONDITION

## ENERGY AND EMISSIONS

### GREENHOUSE GAS EMISSIONS

In 2016/17, Council's greenhouse gas emissions decreased by 5.2% compared with 2015/16, with a 48.9% total reduction since the 2007/08 baseline. This keeps Council on track to meet its 50% reduction target by 2020.

### CAIRNS REGIONAL COUNCIL GREENHOUSE GAS EMISSIONS



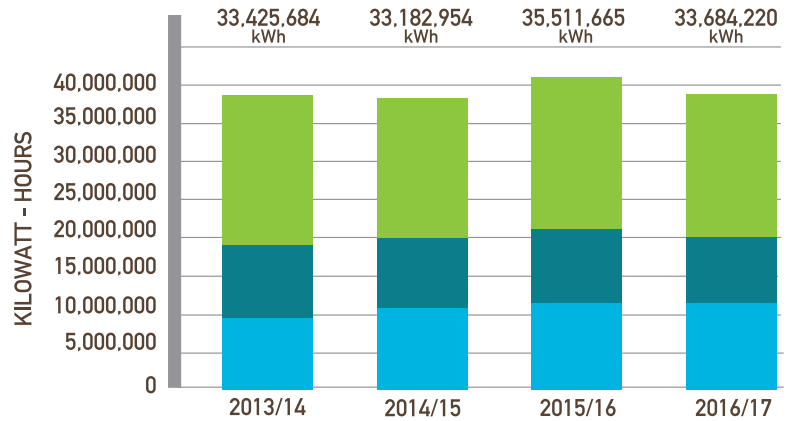
	2007/08	2013/14	2014/15	2015/16	2016/17
<b>Total Council activities emissions (including refrigerant gases, propane, etc)</b>	<b>63,943</b>	<b>36,836</b>	<b>33,480</b>	<b>34,461</b>	<b>32,655</b>
Fuel use emissions	3,500	4,569	3,363	3,248	3,252
Landfill (Portsmouth) emissions	18,927	-	-	-	-
Waste water treatment fugitive emissions	12,879	3,117	3,101	3,101	3,101
Water/sewerage electricity emissions	12,739	13,937	12,966	13,669	12,704
Street, traffic and public lighting emissions	6,391	6,729	7,564	7,878	7,751
Facilities electricity emissions	9,507	6,743	6,486	6,565	5,847

Accurate reporting on fugitive emissions remains a challenge for the organisation with changes to the National Performance Report in 2015. No significant process changes impacting nitrous oxide levels were observed in 2015/16 or 2016/17 and levels are assumed to be the same.

### ELECTRICITY CONSUMPTION

In 2016/17 Council electricity reduced by 5% in 2016/17 compared to the previous financial year.

### CAIRNS REGIONAL COUNCIL ELECTRICITY CONSUMPTION

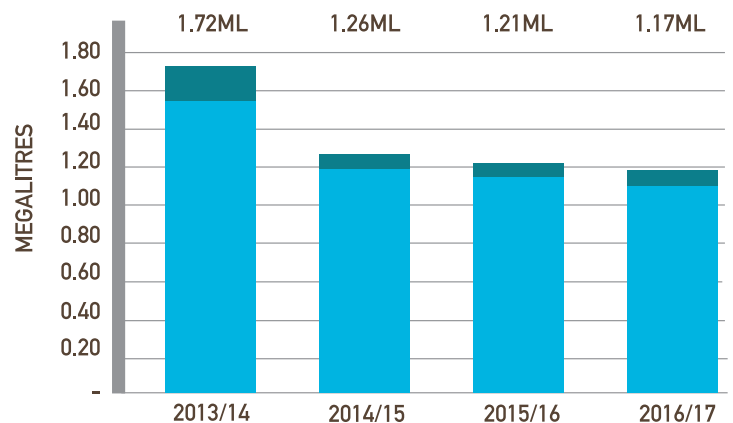


	2013/14	2014/15	2015/16	2016/17
<b>Total electricity use by Council</b>	<b>33,425,684</b>	<b>33,182,954</b>	<b>35,511,665</b>	<b>33,684,220</b>
Water and sewerage	16,996,339	15,925,994	17,267,381	16,269,266
Council facilities	8,223,012	7,966,698	8,292,768	7,487,921
Street, traffic and public lighting	8,206,333	9,290,262	9,951,516	9,927,033

### FUEL CONSUMPTION

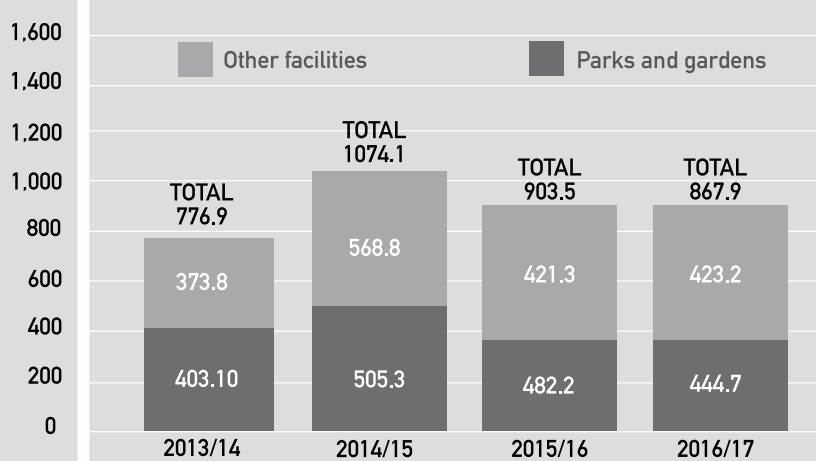
Council's fleet fuel efficiency improved by 3% since the previous financial year and overall consumption has reduced by 31% in four years.

### CAIRNS REGIONAL COUNCIL FUEL USE



	2013/14	2014/15	2015/16	2016/17
<b>Fuel use total (ML)</b>	<b>1.72</b>	<b>1.26</b>	<b>1.21</b>	<b>1.17</b>
Council vehicles - Unleaded	0.18	0.08	0.07	0.08
Council vehicles - Diesel	1.54	1.18	1.14	1.09

## WATER CONSUMPTION (ML)



## WATER CONSUMPTION

Council is one of the major water users in the region, responsible for a large network of public grounds and facilities.

In 2016/17 Council's water consumption decreased by almost 4% but remains 10% above 2013/14 levels.

## RESPONSE

Council has had an Energy and Emissions Management Policy in place since 2007 and a Corporate Sustainability Policy since 2013 which supports the following initiatives for 2016/17:

## SOLAR INVESTMENT

Council installed 165kW of solar in 2016 and invested in an additional 795kW for installation in late 2017, bringing Council's total solar capacity to 1 megawatt (MW), the equivalent of powering 276 homes. This tenfold increase represents a combined investment of over 1 million dollars, with an average pay back period of less than four years.

## ENERGY MANAGEMENT PLAN

Building on previous work in energy efficiency across the organisation, Council's *Energy Management Plan*, delivered in 2016, provides a detailed pathway to further reduce greenhouse gas emissions and costs from electricity and fleet fuel use. It includes a formalised energy management framework, tools and prioritised initiatives for Council assets.

## LED LIGHTING UPGRADES

Council has commenced a roll out of LED luminaires for its street light lamp replacement program, with upgrades at Shields St, Florence St and Munro Martin Parklands in 2016/17. All new residential streetlights managed by Council and traffic signals on Council roads are now also LED.

This will reduce greenhouse gas emissions, electricity costs, require less maintenance and enables smart monitoring for optimised management. Solar powered LED lighting was also installed in parks, along bike paths and boat ramps. Ergon Energy owns the remaining 16,000 street lights on Council's road network and undertakes its own LED pilot programs.

## GREENHOUSE GAS EMISSIONS REDUCTION

Council remains on track to meet its 50% greenhouse gas emissions reduction target by 2020, with a 48% reduction compared to 2007/08 levels. This has largely been achieved through:

- Methane flaring at the closed Portsmith Landfill, destroying 6,552 tCO<sub>2</sub>e in 2016/17.

- Ongoing energy efficiency monitoring and optimisation for waste water treatment, building retrofits and fuel efficiency fleet measures.
- Renewable energy investment and building retrofits.
- Fleet fuel efficiency through real time monitoring, optimised car pool sharing and the procurement of fuel efficient and hybrid vehicles.

## STAFF ENGAGEMENT

Council assists staff to understand and apply their role in achieving workplace sustainability. This includes:

- Sustainability inductions for nearly 200 new staff in 2016/17.
- Workplace giving program whereby Council matches staff donations to the Cairns Turtle Rehabilitation Centre, raising \$10,000 for the care of sick and injured turtles in 2016/17.
- Workplace Excellence Awards in sustainability to recognise staff initiatives which reduce environmental impacts and promote resource efficiency.
- In house recycling of batteries, fluorescent lights, mobile phones, printer cartridges and some office consumables such as coffee pods and stationary.
- *Plastic Free July Challenge* to reduce single use plastics in workplaces and homes.

## COUNCIL ENVIRONMENTAL COMPLIANCE

Council's Safety, Environment and Traffic team develops various environmental and cultural heritage management plans for Council's own operational and capital works program to comply with state and federal legislation. This often involves engaging specialist services for environmental and cultural heritage surveys, monitoring, auditing or delivering environmental offsets.



# CAIRNS REGIONAL COUNCIL DATA

2013/14    2014/15    2015/16    2016/17    CHANGE IN  
2016/17

## BUILT ENVIRONMENT

### Planning and Development

Building Approvals	634	669	762	587	-23.0%
Houses	630	613	672	511	-24.0%
Residential - other	4	56	76	74	-2.6%

### Low Carbon Travel

Length of shared pathways and cycleways (km)	490	494	504.8	509.2	0.9%
Percentage of people riding in the last week	Data not available	23.1%	22.7%	20.2%	-11.0%
Percentage of people riding in the last year	Data not available	39.8%	38.3%	35.8%	-6.5%

### Urban Environmental Management

Cat traps issued	Data not available	Data not available	114	111	-2.6%
Dog traps issued	Data not available	Data not available	Data not available	4	
Volume debris removed from Gross Pollutant Trap network (m3)	Data not available	Data not available	133.5	289	116.5%
Number of clean ups in the Great Northern Clean Up	Data not available	16	14	24	71.4%

### Waste and Recovery (tonnes)

Total collected	94,384	91,823	98,194	97,704	-0.5%
Tonnes landfilled	40,065	36,644	39,334	40,048	1.8%
Tonnes diverted	54,319	55,179	58,860	57,656	-2.0%
<b>Total recovery rate (%)</b>	57.6%	60.1%	59.9%	59%	-1.5%

### Residential Contamination Rate

Waste materials in kerbside recycling	10.8	9.4	9.9	8.9	-10.1%
Recycling materials in kerbside waste	23.3	23	20	17.1	-14.5%
Waste and Recovery Education Reach (persons)	Data not available	Data not available	2,000	2,800	40.0%

## BIODIVERSITY

### Revegetation

Trees raised for Council revegetation & conservation projects in region	17,013	18,063	18,652	18,752	0.5%
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### Biosecurity

Hours spent on pest plant control	4,652	4,914	3,189	2,960	-7.2%
Hours spent on pest animal control	1,880	1,880	1,691	1,727	2.1%
Feral pigs destroyed	135	137	138	198	43.5%

## WATER AND WATERWAY HEALTH

### Potable Water Consumption (ML)

Total	23,218.4	25,050.4	23,416.8	23,524.2	0.5%
Residential	16,544.9	17,965	16,954.1	16,977	0.1%
Commercial, industrial, municipal	5,338.8	6,360.5	6,172.9	6,134.6	-0.6%
Other	1,334.7	724.9	289.8	412.6	42.4%

### Waste Water (ML)

Total	20,653	18,944	18,570	19,257.5	3.7%
Recycled	11.1%	11.6%	8.2%	8.8%	7.3%
Discharged	88.9%	88.4%	91.8%	91.2%	-0.7%

### Water and Waste Water Education Reach (persons)

	-	-	925	1,261	36.3%
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	2013/14	2014/15	2015/16	2016/17	CHANGE IN 2016/2017
<b>COUNCIL OPERATIONS</b>					
<b>Emissions (tco2e)</b>					
Total (inc. minor emissions from refrigerant gasses & propane)	36,836	33,480	34,461	32,654.9	-5.2%
Facilities Electricity	6,743	6,486	6,565	5,847	-10.9%
Streetlight, Traffic and Public Lighting	6,729	7,564	7,878	7,751	-1.61%
Water and Sewerage Electricity	13,937	12,966	13,669	12,704	-7.1%
Waste Water Treatment Fugitive Emissions	3,117	3,101	3,101	3,101	0.0%
Portsmith Landfill	0	0	0	0	
Vehicle Fuel Use	4,569	3,363	3,248	3,252	0.1%
<b>Electricity(kWh)</b>					
Total	33,425,684	33,182,954	35,511,665	33,684,220	-5.1%
Streetlight, Traffic and Public Lighting	8,206,333	9,290,262	9,951,516	9,927,033	-0.2%
Water and Sewerage	16,996,339	15,925,994	17,267,381	16,269,266	-5.8%
Council Facilities	8,223,012	7,966,698	8,292,768	7,487,921	-9.7%
<b>Fuel Consumption (ML)</b>					
Total	1.72	1.26	1.21	1.17	-3.3%
Diesel	1.54	1.18	1.14	1.09	-4.4%
Unleaded	0.18	0.08	0.07	0.08	14.3%
<b>Water Consumption (ML)</b>					
Total	776.94	1,074.12	903.52	867.9	-3.9%
Parks and Gardens	403.1	505.3	482.2	453.7	-5.9%
Other Facilities	373.84	568.83	421.27	423.2	0.5%



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