

Environmental ACTION PLAN 2

Progress Report

SEPTEMBER 2012



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Waverley Council's Environmental Action Plan 2 (EAP 2) was completed in 2009 as part of an integrated process to develop Council's strategic plan, Waverley Together 2 (WT2).

This report outlines progress against EAP2 and WT2 environmental targets in the areas of waste, water, biodiversity and greenhouse (across the local government area (LGA) and Council operations) as well as an update of actions achieved in each of these areas.

This replaces Council's annual State of Environment Report.

Waverley Together 2

Directions: Council's strategic targets

- E1 Waverley's community contributes to the reduction of greenhouse gas emissions
- E2 Waverley and its community is well prepared for the impacts of climate change
- E3 Waverley's community, including its visitors, reduces the amount of waste it generates and increases the amount it reuses and recycles
- E4 Water is used carefully and sparingly in Waverley's buildings, gardens, businesses and Council operations
- E5 The waterways and beaches are clean and free of pollutants
- E6 A network of parks and coastal reserves, street trees and other plantings provides a habitat for a thriving local ecology
- E7 Our coastal waters provide a habitat for a thriving marine ecology
- E8 Waverley is an environmentally educated and committed community
- L7 People frequently walk and ride their bikes, particularly for local trips.
- L8 People frequently use public transport, particularly for trips to work.

Our targets

Waverley LGA: Council and the wider community

Greenhouse Gas Emissions (E1, E8)

30% reduction of 2003/04 levels by 2020

70% reduction of 2003/04 levels by 2050

Energy (E1, E8)

30% of electricity by renewables by 2020

Waste (E3, E1, E8)

No net increase of 2004/05 waste generation levels by 2020

75% resource recovery of residential and commercial waste by 2020

Transport (E1, L7, L8, E8)

40% of total daily distance travelled by residents is by public transport, walking or cycling by 2020

Average kilometres travelled by Waverley residents per day by private car declines by 15% on 2007 levels by 2020

Water (E4, E8)

Zero increase of 2005/06 levels of mains water consumption by 2020

Water quality (E5, E8)

Greater than 345 clean beach days per annum (>95%) based on DECCW Beachwatch Water Quality Results

Biodiversity (E6, E7, E8)

Continually improve the quality and ensure no loss of native vegetation based on 2009/10 levels

Waverley Council operations

Greenhouse Gas Emissions (E1)

30% reduction of 2003/04 levels by 2020

Water (E4)

50% reduction of 2005/06 levels in mains water consumption by 2020

NB: The codes in brackets refer to the Waverley Together 2 directions that our environmental targets align with.

Terminology

EAP2 Environmental Action Plan 2

gge Greenhouse Gas Emissions

Kg Kilogram

kL Kilolitre

kW kilowatt

kWh kilowatt hour

LGA Local Government Area

T Tonnes

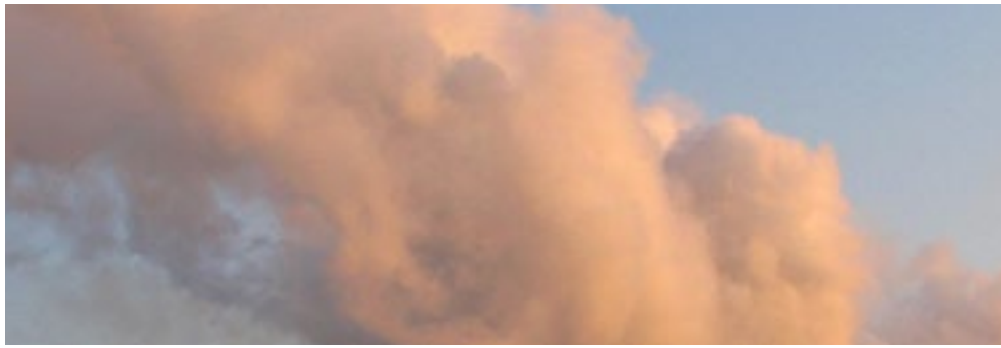
tC02e Tonnes of carbon dioxide equivalent

WT2 Waverley Together 2



Reducing our greenhouse gas emissions – Waverley Council

**Target: 30% reduction in Council greenhouse
gas emissions by 2020 based on 2003/04 levels**



Waverley Council has reduced its greenhouse gas emissions by 6% on the base year. Further reductions are anticipated as a result of energy saving projects implemented in 2011/12.

Key activities:

- The Bondi Junction Greenhouse Gas Review is complete and as a result, Council is investigating district tri-generation as part of redevelopment of Council sites in Bondi Junction.
- Waverley Council purchases 100% GreenPower for one quarter of the electricity used at the Waverley Library, Eastgate Carpark, Council Chambers, Zetland Depot and Bondi Pavilion. This amounted to 820,110 kWh in 2011/12, avoiding 722 tonnes of greenhouse gas emissions annually.
- The Waverley Energy Management Plan 2011 was completed along with the subsequent tender process. Energy efficient lighting, lighting sensors and timers, hot water boiler timers, appliance timers as well as heating, ventilation and air conditioning efficiencies are currently being implemented. Saving Council \$173,000 in energy costs and maintenance each year, the projects will pay for themselves in 4.4 years.
- Waverley Library has already received its new energy efficient air conditioning chiller which will save \$13,000 in electricity costs each year.
- Combined, the energy saving retrofit and chiller replacement will achieve a 15% reduction in Council greenhouse gas emissions.
- 131 park and outdoor lights are receiving energy efficient upgrades as part of the aforementioned project. Further opportunities for energy efficiency upgrades to public lighting will be explored as part of EAP3.
- Council continues to work with AusGrid and the Southern Sydney Regional Organisation of Councils (SSROC) Street Lighting Improvement Program to improve the energy efficiency of AusGrid owned street lighting in Waverley. Energy efficient compact fluorescent; high pressure sodium; and, light emitting diode (LED) street lights are being installed and/or trialled throughout the LGA.
- The Bondi Lifeguards now shower with solar heated hot water due to the three new systems installed on Bondi Pavilion.
- Solar power systems installed on Council buildings have increased from a generation capacity of 4kW in 2011/12 to 31 kW in 2012/13. This will result in an estimated output of 38,000 kWh of solar generated electricity at Bondi Pavilion, Margaret Whitlam Recreation Centre (Waverley Pavilion), Bronte Childcare Centre and the new Bondi Junction Early Learning & Care Centre.
- The Waverley Council Sustainable Fleet Action Plan was developed and the subsequent review of Council's fleet and plant policy was completed. As a result, Council is seeking to improve the fuel efficiency of its heavy vehicle fleet such as garbage compactors and recycling trucks.
- Council added an electric bike to their fleet for use by staff and shower facilities have been improved for staff based at Council Chambers.

Reducing our greenhouse gas emissions – Waverley LGA

Target: 30% reduction of 2003/04 levels of Waverley LGA Greenhouse Gas Emissions

Waverley LGA gge have increased 17% on the base year. It is anticipated that increases in commercial and residential building floor areas have contributed to this.

Key activities:

- The Bondi Junction Greenhouse Gas Review was completed in 2011. As a result tri-generation and/or other low carbon technologies are being investigated as part of re-development of Council sites and discussed with Westfield Bondi Junction. Planning instruments are also being reviewed to encourage energy efficient design and technologies, use of trigeneration and on-site renewable energy technologies, especially in new mixed development.
- An engagement program targeting medium to high energy using buildings will also be developed and delivered as part of EAP3.

Target: 30% of electricity used in the LGA is to come from renewable sources by 2020

The capacity of solar power systems installed in Waverley increased by 225% between 2010 and 2011 and it is anticipated that the majority of these systems contribute towards the 6% of energy from renewable sources in the standard electricity supply.

6% of NSW's total standard electricity usage is currently provided from renewable energy sources and this is anticipated to rise to 20% by 2020 in response to the Australian Government's Renewable Energy Target. Therefore, all electricity users in Waverley are using a portion of renewable electricity.

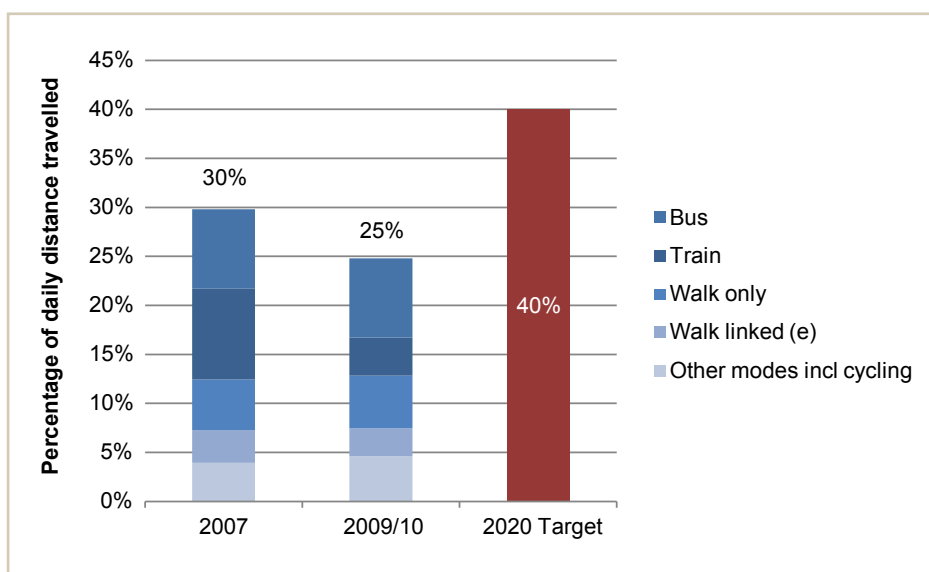
Key activities:

- Accredited GreenPower is also used in some households and businesses in Waverley however GreenPower usage data is not available by LGA.

- 87 solar power and solar hot water systems were installed across Waverley, Woollahra and Randwick Council areas as part of the Go Solar program, resulting in abatement of 300 tonnes of CO₂e per year for next 25 years.
- Installed solar power capacity in the Waverley LGA increased from 259 kW in September 2010 to 844 kW in December 2011. An estimated 963,000 kWh of solar generated electricity was produced in October to December 2011.
- Council commissioned the Institute of Sustainable Futures to complete a wind feasibility study in 2010. This found that LGA limitations in terms of disturbance from buildings, trees and power lines meant that return on investment was likely to be relatively low.



Target: 40% of total daily distance travelled by residents is by public transport, walking or cycling



Target: Average kilometres travelled by Waverley residents per day by private car declines by 15% on 2007 levels by 2020

The NSW Government's Transport Data Centre survey results suggest that the distance driven by Waverley LGA residents per day is steady (10.7 km) but the proportion of daily distance travelled by sustainable transport has decreased. Caution must be taken in interpreting this data due to the small sample size and the methodology; car passengers are not included in the daily distance travelled by car and other modes includes motorcycles as well as cycling.

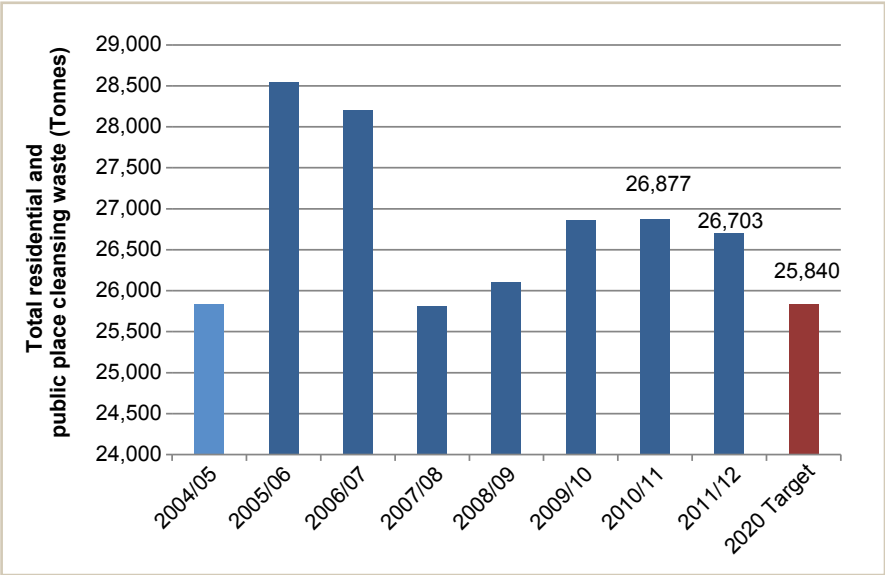
Key activities:

- The Waverley Transport Plan was completed in 2011. This provides a framework for addressing key focus areas including Bondi Junction, Bondi Junction to Bondi Beach corridor, land use and parking, public transport, schools, bike network and facilities, pedestrians, access and mobility.
- Studies are currently being completed for light rail and/or improvement of public transport options along Oxford St and from Bondi Junction to Bondi Beach. Public consultation on the options is due to take place in 2013.
- 155 residents attended cycling skills and bicycle maintenance workshops in 2011/12. 100 cyclists attended the Ride to Work Day breakfast in Bondi Junction mall and 65 cyclists participated in Bike Safety in the Mall activities.
- Work is underway on a new Waverley Bike Plan, due for completion in early 2013.
- 61 car share car park spaces are currently available in the Waverley LGA, providing residents and businesses access to a car for when they need it and reducing the number of vehicles on our streets.
- Local schools participated in Walk to School Day. Council provided a fruit breakfast and presenters including Buzzy Bee for Waverley Public School, St Charles Primary School, Clovelly Public School, Bondi Public School, Bondi Beach Public School and Bronte Public School.
- Green Links walking routes linking key recreational facilities and transport nodes are now clearly marked throughout the LGA with stencilling and signage.



Recycling and recovery of resources

Target: No net increase on 2004/05 levels of waste generation by 2020 (residential and public place waste)



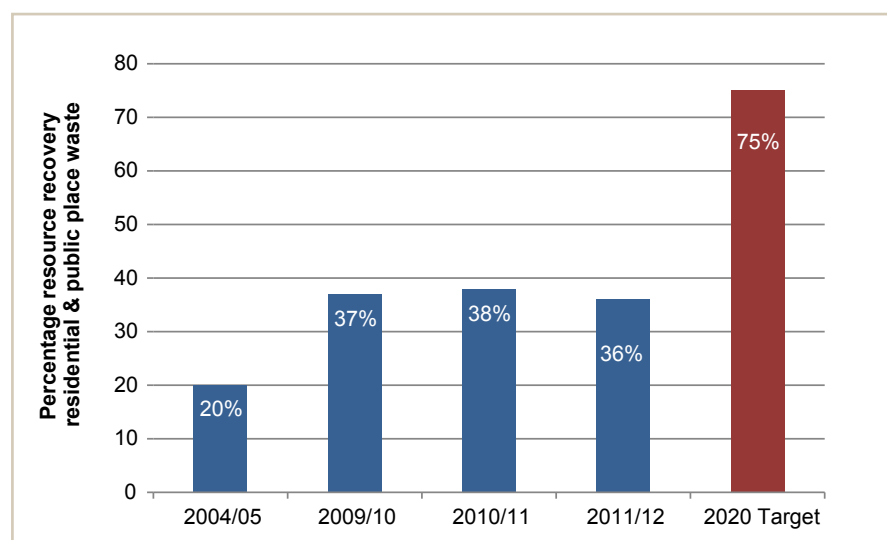
The overall amount of waste collected from Waverley residents and public place cleansing has been decreasing in recent years. A further 4 % reduction is required to achieve the target.

Key activities:

- All Waverley households are provided with container (yellow), paper (blue), green garden waste (green) and general waste (red) bins and collection services.
- Households are also provided with three free clean up services per year: one scheduled clean up and two Your Call collections, scheduled upon request.
- Public place recycling is provided at Bondi and Bronte beachside parks.



Target: 75% resource recovery of residential and public place waste by 2020



36% of residential and public place waste is currently recycled. Maximising recycling and utilising alternative waste treatment (AWT) technology there is potential to increase diversion to 75%, depending on the facility. Waverley Council is participating in a regional tender for AWT which is due to be finalised in late 2012.

Key activities:

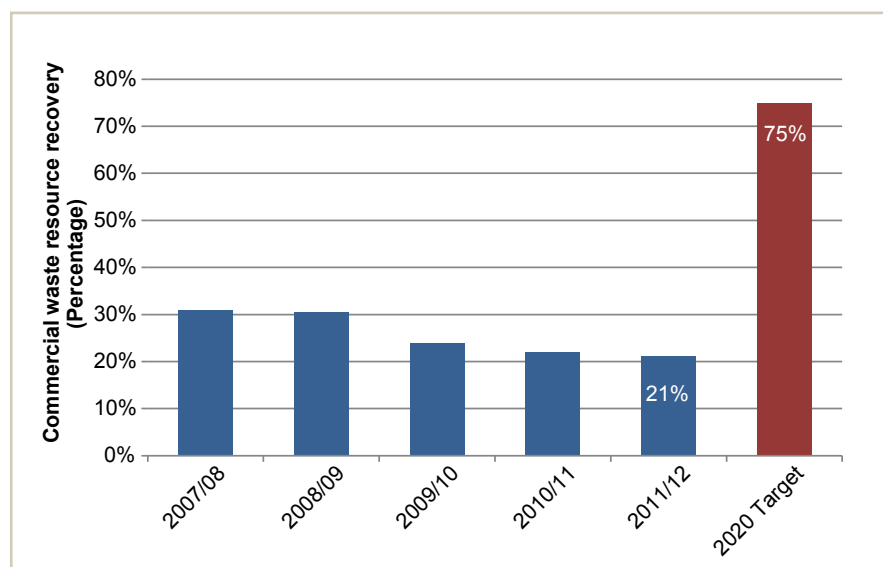
- Waverley Council undertook a six month pilot program in 2011 with six high density apartment buildings to determine the most effective ways to increase recycling and improve overall waste management performance. The results of which are being used to inform future engagement programs.
- The Bondi Beach Automated Waste Collection System Feasibility Study is due for completion in November 2012 and will determine whether this technology is suitable for the Bondi Beach area and the potential for improved recovery of recyclable materials.

- Council also provides and/or supports services that deal with hazardous waste or wastes of concern:
- A recycling drop off point for batteries and mobile phones currently operates from Council's Customer Service Centre.
- Electronic waste including televisions and computers, contain hazardous waste components. Council collected over 60 tonnes of e-waste for recycling via e-waste drop off days in 2011/12. A permanent drop off facility is being investigated as part of the new Council Depot development.
- Council supports delivery of chemical clean out drop-off days to collect and recycle materials such as paint, car batteries and compact fluorescent lights.

- Sharps are a problem waste for Council operational staff and waste processing facilities. Waverley Council coordinates collection of community sharps including syringes, needles and lancets by liaising with local participating pharmacies and engaging the disposal service provider.
- Smoking is banned on Bondi, Tamarama and Bronte Beach. Educational programs have been delivered including signage, chalk art, street performers and advertising to increase awareness. Ashtrays have been installed along promenades.
- Mattresses are an item of concern for illegal dumping and are prevalent in clean up collections in Waverley. 4,129 mattresses were collected for recycling in 2011.
- 68 working second hand fridges were collected by Fridge Buyback from the Waverley LGA in 2011 for degassing and recycling.
- 232 garage sales were registered in the Waverley LGA in 2011/12 Garage Sale Trail. This program encourages the reuse of materials and was developed in the Waverley LGA as a partnership between Waverley Council and Garage Sale Trail.
- 785 Waverley residents are now active participants in the Compost Revolution. Compost bins and worm farms are provided to residents upon completion of an online or in person Compost Revolution tutorial. 240 people participated in Compost Week activities including a movie screening, compost cocktails, and workshops (compost making and gardening with compost).
- The Waverley Littering and Illegal Dumping Action Plan was completed in 2011 and is currently being implemented.



Target: 75% resource recovery of commercial waste by 2020



Only 21% of commercial waste is currently recycled. In maximising recycling and utilising alternative waste treatment (AWT) technology there is potential to increase diversion to 75% depending on the facility. Waverley Council is participating in a regional tender for AWT which is due to be finalised in late 2012.

Key activities:

- Recycling bins provided to all commercial customers as part of the standard service.
- Schools and pre-schools are provided with free recycling and educational support. Bronte Public, Clovelly Public, Galilee, Waverley Public, Rose Bay Secondary College, St Catherine's School, Waterford Pre-School, Waverley College as well as Bronte, Gardiner and Waverley Early Education Centres all actively recycle and take advantage of this free service.

Initiatives to reduce and/or recycle waste from Council operations:

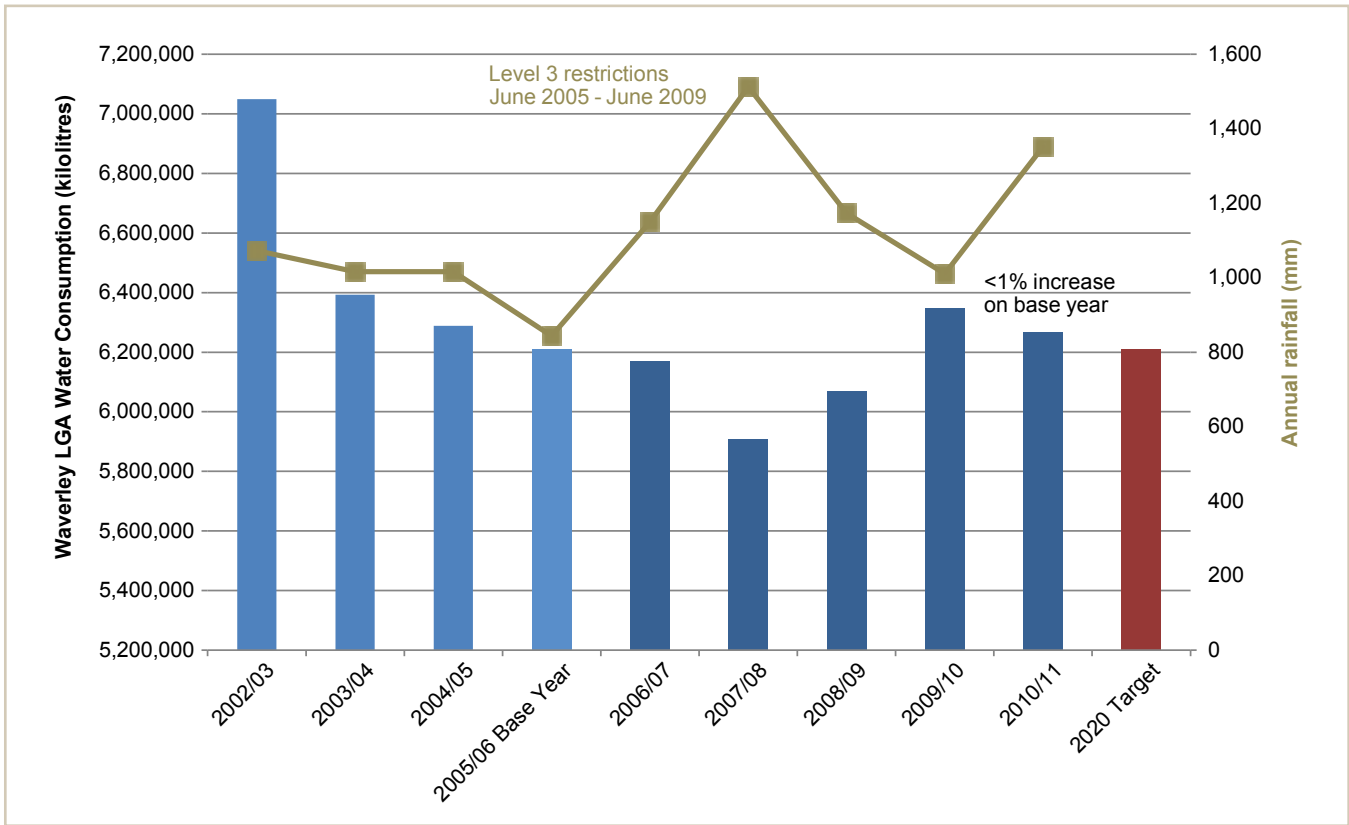
- Completion of the Sustainable Events Policy in 2011 to encourage waste recycling (as well as management of noise, spills, energy, water and biodiversity impacts) at council and privately run events.
- Completion of the Sustainable Procurement Action Plan in 2011. Implementation is focusing on the use of reusable and/or recyclable materials in Council activities and operations.
- Access to paper and container recycling in Council buildings.
- Food waste collection trials with worm farms and bokashi buckets at various Council offices.
- Recycling of used oils and lubricants when servicing Council's vehicle fleet and equipment.
- Mulching green waste from Council sites and reusing the mulch in Council operations.
- Reuse of construction waste as fill in construction works.



Reducing our water use

– Waverley LGA

Target: Zero increase in Waverley LGA's 2005/06 levels of mains water consumption by 2020



Waverley LGA is on track to achieve its mains water target with a further reduction in consumption of less than 1% needed.

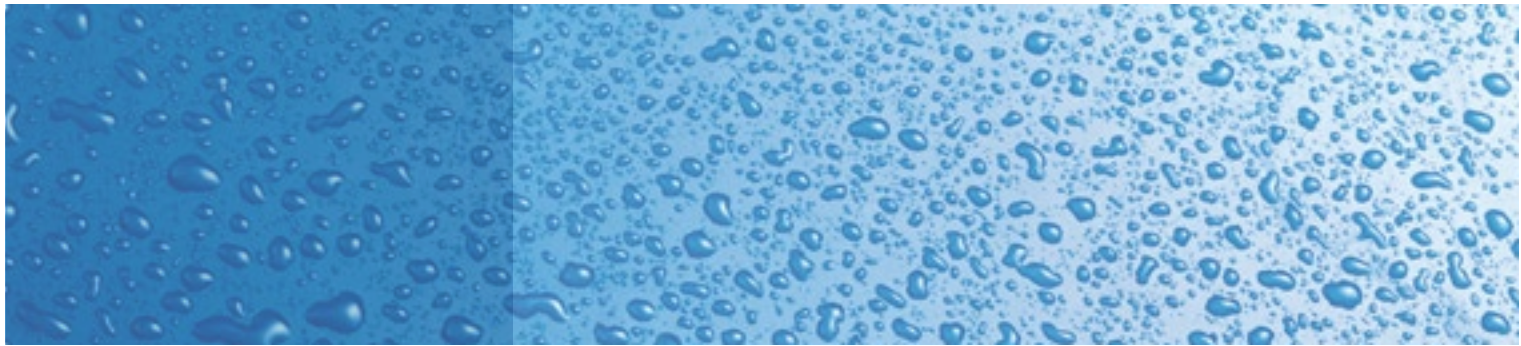
Key activities:

- In recent years, Waverley residents and businesses have adjusted their water use in accordance with Sydney Water restrictions (level 3) and rainfall patterns.

- 13,342 Waverley residents and organisations received Sydney Water rebates (for water efficient washing machines & rainwater tanks) and subsidised programs (to fix water leaks and/or receive water efficient showerheads, flow restrictors and dual flush toilets) between 2000 and 2011, when these programs ceased.
- The Eastern Suburbs Sustainable Business Program continues to be delivered in partnership

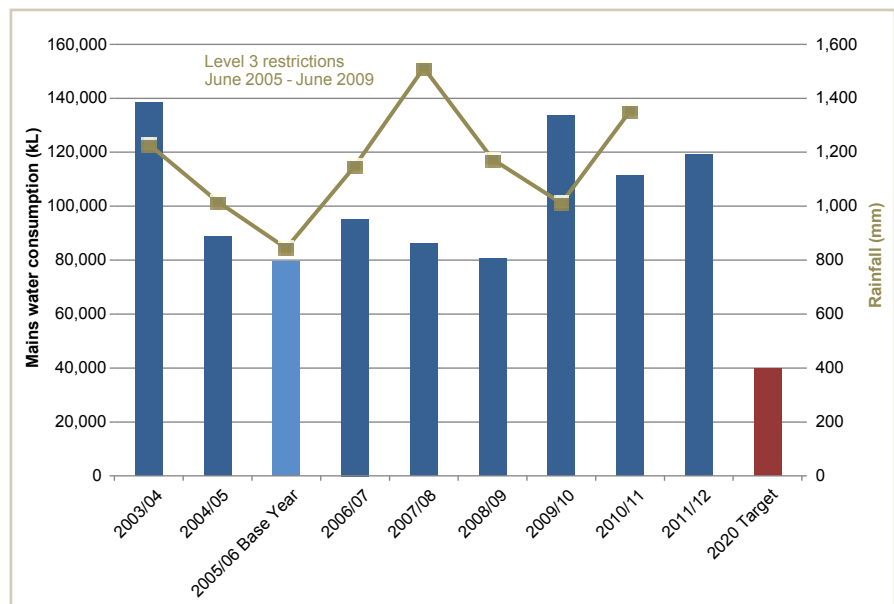
with Sydney Water, Woollahra and Randwick Council's and has assisted organisations in Waverley to save 1,777 kL of water each year.

- Educational workshops (including sustainable apartments) and resources (including free shower timers) were also provided by Council to assist residents and owners corporations to reduce their water use.



Reducing our water use – Waverley Council operations

Target: 50% reduction in Council's mains water consumption from 2005/06 levels by 2020



Council mains water use is currently 50% higher than the base year (set during level 3 water restrictions). Reductions are anticipated for 2012/13 as a result of recycled water and efficiency projects implemented at Bondi and Waverley Park in 2011/12.

Key activities:

- Since September 2008 the Bronte stormwater reuse system has provided 16 ML of recycled water each year for irrigation, toilet flushing, pool cleaning and bush regeneration. Beach water quality is also improved.
- Bondi Park stormwater reuse system came online in March 2012 and will provide 50 ML of recycled water each year for irrigation and toilet flushing. Beach water quality is also improved.
- Waverley Park stormwater reuse system was commissioned in September 2011 and will provide an estimated 35 ML of recycled water each year for irrigation of Waverley Oval, sports fields and ornamental gardens as well as toilet flushing.
- An average of 12 ML of groundwater is used for irrigation at Barracluff Park, North Bondi each year.
- Rainwater tanks at Bondi School of the Arts, Mill Hill Childcare Centre and Marks Park supply rainwater for toilet flushing and/or garden irrigation.
- Savings of approximately 51,438 kL of mains water each year are anticipated as a result of efficiencies implemented in 2011/12 as part of Council's participation in the Sydney Water Irrigation and Landscape Efficiency Program (ILEP).
- The Waverley Water Efficiency Plan 2011 was completed and water saving actions identified at Council's top water using sites. Water leaks were identified as an issue of concern and as a result, an automated leakage detection system is being sought in order to more quickly identify and fix water leaks.

Keeping the water clean

Target: Greater than 345 clean beach days per year (>95%) based on Beachwatch water quality results

BEACH SUITABILITY GRADES	2009/10	2010/11
Bondi Beach	Good	Good
Tamarama Beach	Good	Good
Bronte Beach	Good	Good

STORMWATER CATCHMENT BOUNDARIES IN WAVERLEY



Beachwatch monitors water quality at swimming beaches and Council undertakes additional monitoring at Bronte and North Bondi Pool. From May 2009, Beachwatch has reported Beach Suitability Grades instead of percentage clean beach days. The ‘good’ grade means that microbial water quality is generally good and water is considered suitable for swimming for most of the time, except for following heavy rain. The target is being reviewed as part of the development of EAP3.

Key activities:

- Untreated sewage continues to be discharged from Sydney Water infrastructure into the ocean from three cliff face outfalls, one of which is located in the Waverley LGA at Diamond Bay. Council continues to advocate to Sydney Water to address this issue.
- Council maintains 7 gross pollutant traps along the coastline to prevent litter, leaves and sediment from entering into Bondi, Tamarama and Bronte Beaches and the ocean near Dover Heights. Pit baskets are also used to capture these pollutants further upstream.
- The Bondi and Bronte stormwater reuse systems remove microbial and other pollutants from millions of litres of stormwater each year, keeping ocean beaches clean.
- Filtration of nitrogen and phosphorus will occur as part of the planned underground filter at Bondi Beach and a biofiltration system (also known as a raingarden) for Bondi Junction.
- 342 kL of trade waste was removed by Sydney Water from commercial properties in Waverley in 2010/11.
- 42 residents attended ‘Living with less chemicals’ educational workshops. Chemical clean out drop off days were also supported by Council.



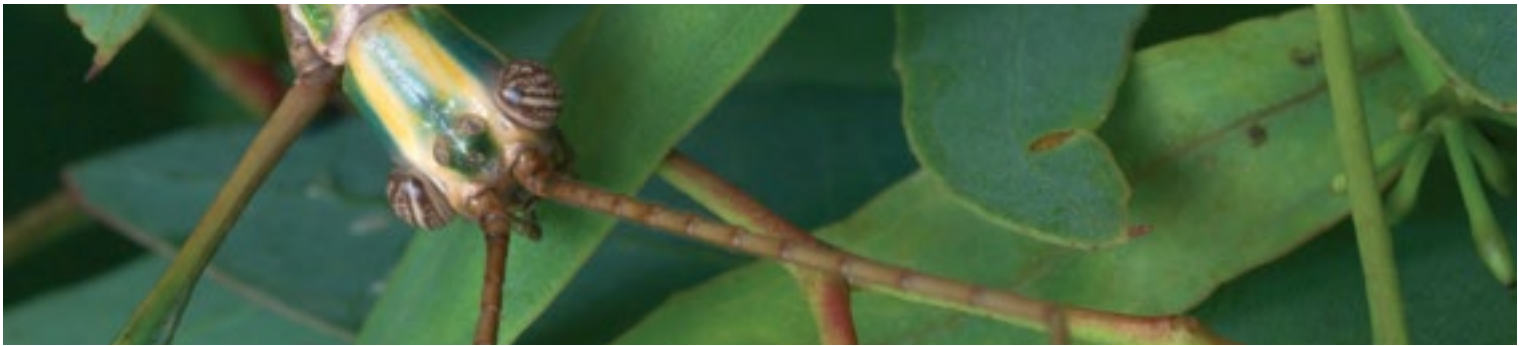
Conserving biodiversity

Target: Ensure no loss from 2009/10 levels of remnant vegetation

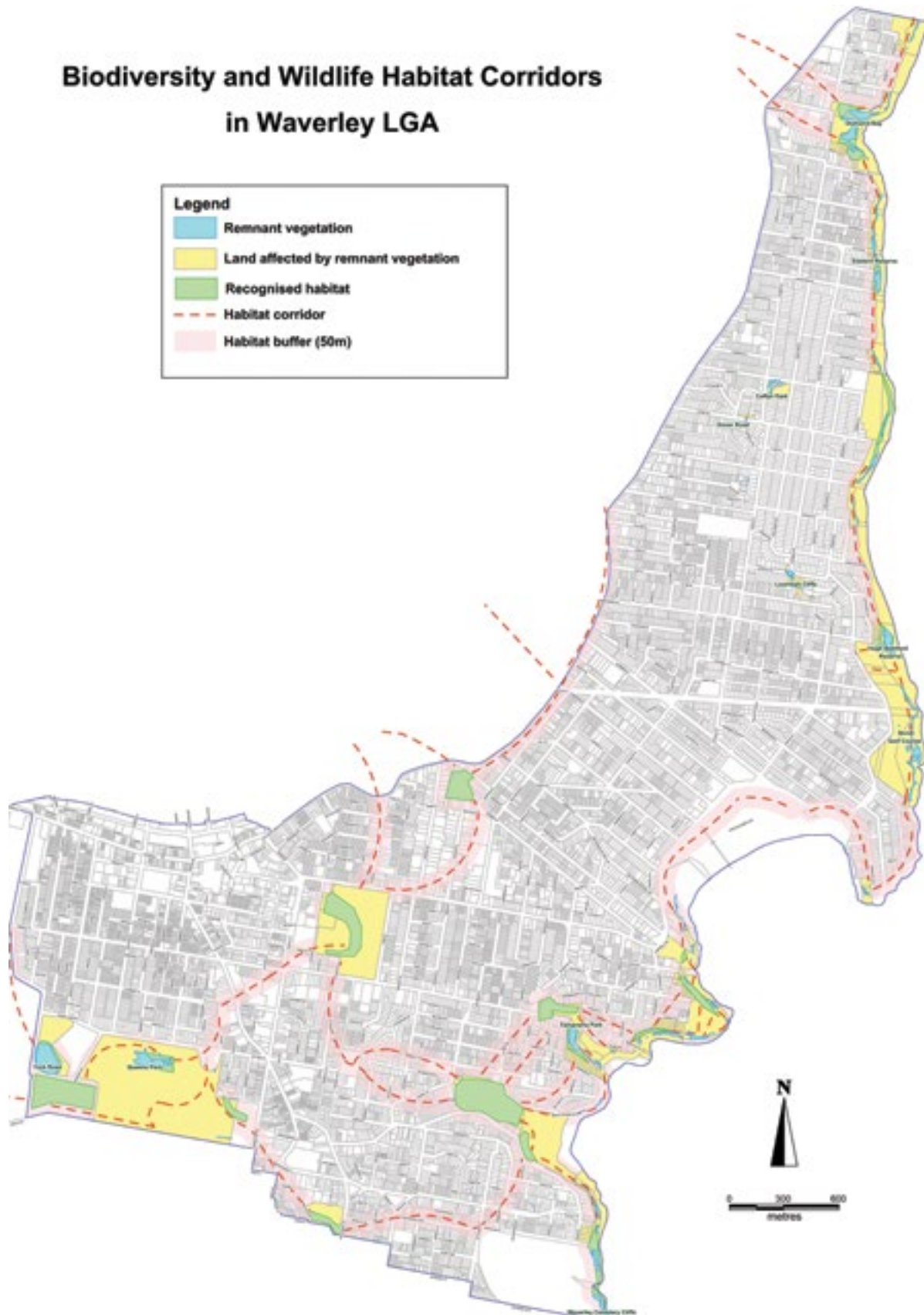
LOCATION OF REMNANT VEGETATION	2010 AREA (M2)
Diamond Bay Reserve, Vaucluse	7,800
Eastern Reserve, Dover Heights	4,800
Caffyn Park, Dover Heights	1,100
Raleigh Reserve, Dover Heights	1,600
Loombah Road Cliffs, Dover Heights/North Bondi	1,036
Hugh Bamford Reserve, Dover Heights/North Bondi	4,500
Tamarama Park, Tamarama	3,500
Waverley Cemetery Cliffs, Bronte	3,100
York Road Bushland, Queens Park (Council road verge & Centennial and Moore Park Trust land)	11,000

Target: Continually improve the quality from 2009/10 levels of remnant vegetation

REMNANT VEGETATION CONDITION ZONING	TOTAL AREA OF CONDITION ZONE (HA)	TOTAL AREA OF CONDITION ZONE (%)	NUMBER OF INDIVIDUAL AREAS OF CONDITION ZONE
Good	0.2726	4.6	9
Fair	1.2046	20.3	16
Poor	0.5428	9.1	23
Very poor	3.9147	66.0	88



Biodiversity and Wildlife Habitat Corridors in Waverley LGA





Prior to the endorsement of EAP2, areas of remnant vegetation were being lost as a result of development and degradation. Remnant vegetation and habitat corridors have now been mapped and included in planning instruments, along with controls to protect them. Improving the condition of remnant vegetation has become an increasing priority and will be addressed in EAP3.

Key activities:

- The Waverley Flora and Fauna studies were completed in 2010 and provide a baseline for the LGA. They also inform future management of Council's precious remnant vegetation and opportunities for revegetation and habitat creation.
- The Upper Bronte Gully Creek restoration project was opened in 2011. The works reduce erosion and pollutants, enhance native vegetation and improve the aesthetic and ecological value of the area.
- 56 Bushcare volunteers have provided 585 hours of rehabilitation work at publicly owned remnant vegetation at five remnant sites (Bronte Gully, Diamond Bay Reserve, Eastern Reserve, Hugh Bamford Reserve and Tamarama Gully) in 2011/12.
- Council engages contractors for regeneration works in remnant vegetation, revegetation works of other native vegetation and activities such as Coral Tree removal, seed collection and general weed control. Activities are often dependent on grant funding with supplementary funding provided by Council. Regeneration works have occurred in: Eastern Reserve; Rodney Reserve; Diamond Bay Reserve; York Road Reserve; Tamarama Gully; Eastern Reserve; Caffyn Park and Raleigh Reserve; Hugh Bamford Reserve; and Rodney Reserve. Revegetation works were undertaken in Bronte Cutting, Bronte Gully, Marks Park, Diamond Bay Reserve, Loombah Cliffs, Calga Boardwalk; Eastern Reserve; and, Gaerloch Reserve.
- Community tree planting days, pocket-parks groups and adopt-a-tree programs also contribute towards conserving and improving our local biodiversity. Over 6,000 native trees were planted in Waverley LGA in 2011/12 by community members, Council staff and contractors.
- Bondi Beach Public School, Bondi Public School, Bronte Public School, Clovelly Public School, Kesser Torah College and Rose Bay Secondary College have all received grants and/or plants, mulch and support from Council to establish native plant gardens.
- Native street trees continue to be planted in designated areas (as per the Street Tree Masterplan) and to replace trees that have been approved for removal.
- Research of Blue Groper populations within the Bronte-Coogee Aquatic Reserve was undertaken by Macquarie University with the support of the NSW Office of Environment and Heritage, Waverley Council and Randwick Council. The study concluded that the current boundaries of the Bronte-Coogee Aquatic Reserve have been effective in providing protection and habitat for the local blue groper populations. The findings were released at a Waverley Council hosted community forum with 40 attendees.
- 220 residents participated in educational workshops to increase awareness of terrestrial and marine biodiversity in 2010/11. Subsidies and grants were also provided to the Marine Discovery Centre (MDC) for delivery of further marine education programs



Additional activities

Waverley Council continues to further research the local impacts and management of coastal and climate change risks. Activities include:

- The Waverley Coastal Zone Risk and Hazards Vulnerability Assessment was completed in 2011 and is now publicly available. Planning instruments are currently being updated to reflect the study findings and identify properties subject to geotechnical and/or coastal inundation risks.
- A climate change risk assessment of Council operations was completed in 2012 in accordance with NSW Government requirements.

Council also delivers a range of programs to engage and collaborate with local residents, community groups and organisations to improve environmental outcomes. These include:

- 388 participants enjoyed environmental themed trivia, comedy and other activities as part of the 2011/12 Green Brains series.
- Overall, Waverley Council environmental events and workshops attracted 4,233 participants in 2011/12.

- The annual Bondi the Beautiful festival continues to deliver thousands of residents with a range of environmentally themed activities, entertainment and the opportunity to meet local environmental community group members.
- Grow it Local was successfully delivered for the first time in 2012 to encourage residents and businesses to grow their own food. Grow It Local is another high profile program, originating in Waverley, and delivered by Council in conjunction with Garage Sale Trail and Republic of Everyone. 123 residents also attended Balcony & Kitchen Gardening workshops in 2011/12.
- 17 schools and 199 educators and parents participate in the Eastern Suburbs Sustainable Schools Network. Waverley Council partner with Woollahra Council to facilitate the exchange of ideas, knowledge and resource through quarterly meetings of the network.

Approximately \$12,000 in Council funded environmental grants are awarded to community groups and schools each year. Grant funded projects implemented in recent years include:

- Bondi Beach Public's children's garden and environment learning program; and, chook run; Bondi Beach Playgroup native habitat garden and family educational day; Sustainability Street Group Waverley communal veggie garden in Waverley Park; Clovelly Public School native gardens and outdoor learning circles; and, excursion to the Marine Discovery Centre; Transition Bondi Group's delivery of an aquaponics workshop; Waverley Public School's Kind Kids program; Bronte Public School's garden regeneration and water efficient irrigation system; Our Big Kitchen's permaculture food production program; Rose Bay Secondary College's Gadigal Gardens; St Clare's College's water fountains and no bottled water program; WAYS POEM School's Smart choices Program; Kesser Torah College's courtyard greening; and, Wairoa Special School's wheelchair accessible garden.