

a healthier environment for healthier people

SUSTAINABILITY REPORT 2012-2013



Austin Health Service Overview

Austin Health is a major academic medical centre providing health services, health professional education and research to its local community, across the northeast of Melbourne and a range of highly specialised services to the whole Victorian community.

Austin Health employs approximately 8,000 people across the Austin Hospital, the Heidelberg Repatriation Hospital, and the Royal Talbot Rehabilitation Centre.

Our primary catchment population includes the municipalities of Banyule and Darebin with over 263,000 people. Our extended catchment is in excess of 1.28 million people and includes an additional seven local government areas to the north and east of Melbourne.

Austin Health operates 984 beds across acute, sub-acute and mental health, with a 2012/13 annual operating budget of \$702 million.

In 2012/13, 93,001 inpatients and 95,958 outpatients were treated. The Emergency Department was one of the busiest in Victoria in 2012/13 – with 71,391 people presenting for treatment.

Environmental Management Strategy

Austin Health's first Environmental Management Strategy (EMS) was launched in 2009-10 outlining three years of planned sustainable improvement activities, along with reduction goals of 10 per cent for stationary energy and water consumption and waste generation across all sites.

In 2013, Austin Health is better placed to understand its resource use through improved reporting techniques, better data management and increased access to global information sources.

Graphs displayed in this report show the annual results against the 2009-10 EMS goals.

This report includes a range of infrastructure projects that have been successfully completed as well as many educational and behaviour change

activities aligning to the improved environmental sustainability aspirations.

In 2012, Austin Health became a founding member of the Global Green and Healthy Hospitals Network, joining a worldwide movement of improved environmental practice within healthcare. Committing to the international framework and hoping to achieve a more holistic approach to sustainability, the organisation's next EMS will cover these ten goals:

1. **Leadership** - Prioritise environmental health
2. **Chemicals** - Substitute harmful chemicals with safer alternatives
3. **Waste** - Reduce, treat and safely dispose of healthcare waste
4. **Energy** - Implement energy efficiency and clean, renewable energy generation
5. **Water** - Reduce hospital water consumption and supply potable water
6. **Transportation** - Improve transportation strategies for patients and staff
7. **Food** - Purchase and serve sustainably grown, healthy food
8. **Pharmaceuticals** - Safely manage and dispose of pharmaceuticals
9. **Buildings** - Support green and healthy hospital design and construction
10. **Purchasing** - Buy safer and more sustainable products and materials

CEO'S MESSAGE

Health services have a big environmental footprint. They are huge 24-hour businesses with substantial demands on energy, water and waste disposal, as they provide the care for millions of Australians.

Health services also have a strong sense of social and community responsibility, reflected in our staff at all levels, but in particular in the passionate generation of young clinical staff, who care deeply about the environment. Environmental sustainability is, therefore, driven as much by our internal values as it is by our wider obligations to the community.

Austin Health is very proud of the pioneering work that we have done in environmental sustainability in recent years and, particularly over the last three years since we launched the Environmental Management Strategy. We are pleased to report on the performance against this strategy in this Sustainability Report.

Environmental management is a key element of all capital investment projects and we are very pleased that our latest facility, the Olivia Newton-John Cancer & Wellness Centre, is the first Victorian hospital building to be accorded a 4-star green star rating under the Green Building Council of Australia's latest benchmarking system.

I would like to thank our environmental sustainability team and all Austin Health staff for their ongoing commitment to the environment.

ENERGY

Electricity consumed by Austin Health this year could power more than 5,500 Victorian homes for a whole year.

An essential resource

The energy consumed in Victoria's public buildings - the health sector is the largest user with 26 per cent is used by health servicesⁱⁱ.

Energy security is critical for running a 24 hour healthcare service. Extensive systems are in place at Austin Health to provide heating, cooling and ventilation systems; operate information technology and communication infrastructure and essential medical equipment.

Efficiency Projects & Activities

Austin Health has been replacing failed lights with light-emitting diodes (LED) in areas such as elevators, foyers, service link ways requiring 24 hour access and some car parking spaces. This type of lighting can use 70 per cent less energy than older lighting types yet give the same light output. Financial savings from these upgrades will be seen in coming years.

An environmental energy audit of administration areas identified significant opportunities to reduce electricity consumption from devices such as computers, screens, printers, heaters and air conditioning as well as lighting.

More than 470 devices were left on overnight. If this occurred every night for a year, the possible greenhouse gas emissions annually would be more than 670 tonnes. Many myths still surround office equipment energy consumption. Education campaigns and repeat audits are planned to measure progress.

A number of energy efficient and effective hand driers have been installed in toilets across the organisation. Each unit is expected to avoid the use of 2,000 sheets of paper towel each day with a financial payback of less than 40 days.

The hand drier units use a small amount of electricity to effectively dry

hands. This consumption is offset by the benefits of:

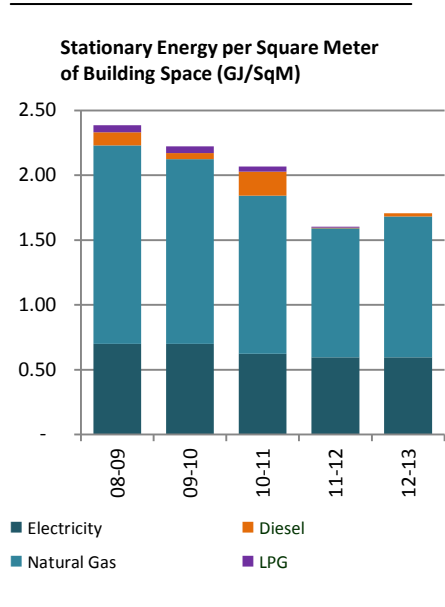
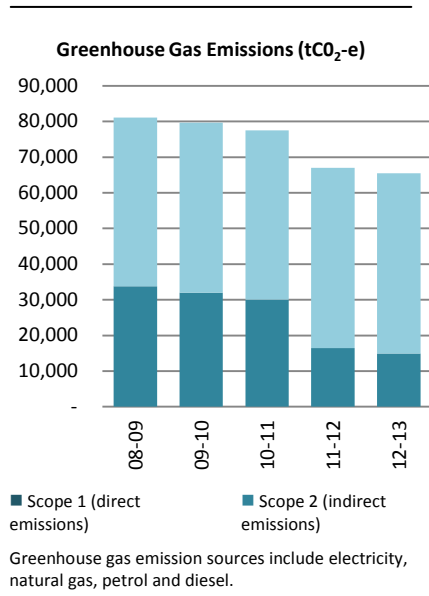
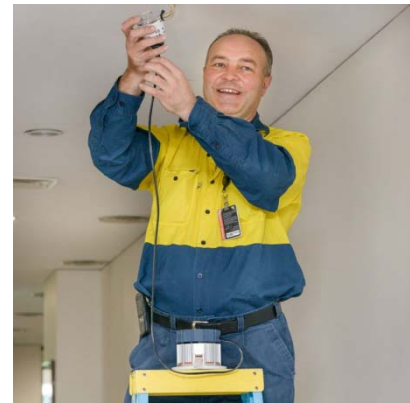
- improved hand hygiene;
- no paper towel usage;
- no paper towel disposal costs;
- no unhygienic overflowing bins near basins;
- reduced labour time refilling and cleaning up paper towel.

The new car park extension near the Austin Hospital will include environmentally friendly technology such as rainwater harvesting, natural ventilation and LED lighting. Twenty four -hour lighting is required for a number of reasons including safety. In order to minimise the electricity consumed, lighting has been strategically placed throughout the structure and efficient LEDs installed.

A water tank has been installed and the rainwater harvested will be used for watering the landscaped areas and plants around the perimeter of the car park. The facade design has been very creative with the installation of the louvers. The specifically designed louvers allow natural cross ventilation through the upper floors whilst concurrently projecting an interesting facade.

Natural ventilation reduces the need for forced mechanical systems which would decrease operating costs. The ongoing operating costs are minimised through reduced need for electricity and water usage.

Whilst the project has been funded through a Treasury Corporation Victoria loan, Austin Health has ensured that the design meets the Department of Health's Sustainability in Health Care capital works (2010) guidelineⁱⁱⁱ requirement of at least 2.5 per cent of total construction cost spent on sustainability initiatives.



WATER

Reverse osmosis systems for toilet flushing save over 18,000 kiloliters of potable water annually.

An essential resource

Water at Austin Health is used for heating, cooling and food preparation purposes and also for patient care activities including the pool facilities for rehabilitation, dialysis and bathing.

Water is a precious resource and as such Austin Health has implemented strategies to reduce consumption.

Ongoing monitoring of waste water discharged from the sites assists with responsible management and compliance.

Efficiency Projects and Activities

The Austin and Heidelberg Repatriation Hospitals have reverse osmosis (RO) dialysis facilities. The waste water from the RO plant is captured for toilet flushing at both sites. This initiative has been in place throughout the life of the EMS and has saved over 40,000 kilolitres of potable water. Annually, nine percent of water consumed at both these sites has been recycled for toilet flushing.

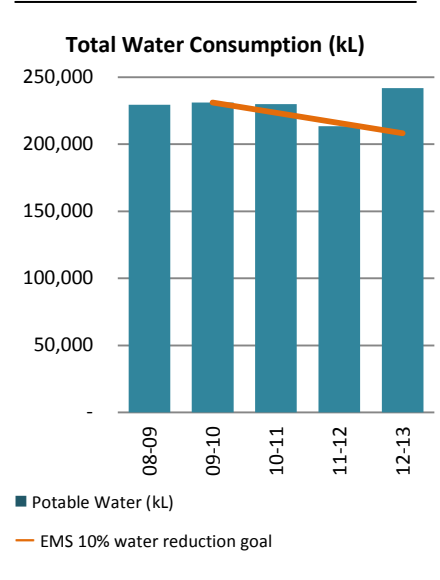
Additional tanks for rain water capture were installed at the Heidelberg Repatriation Hospital near the Fromells Garden. The future intent is to create an outdoor garden space in the area. This increases the on-site rain water capacity to 15,000 litres.

A new floor cleaning machine has been purchased for the Austin Hospital. While no direct water savings are achieved, through the use of ec-H2O technology the reliance on chemical cleaning is reduced. The water in the machine is electrolysed and therefore does not require the addition of chemicals for floor cleaning. It is estimated that 600 litres of chemicals will be saved annually. Previously the floor machine waste water containing chemicals was discharged to sewer. With the introduction of the floor machine only water is discharged to sewer, further protecting our valuable water ways.

A number of unexpected water leaks were responded to by the engineering and maintenance teams. This resulted in deviations from the planned water consumption goals for the year.

The Olivia Newton-John Cancer & Wellness Centre has been benchmarked to reduce potable water demand by 40 per cent compared to a conventional, new health care facility. The following water efficiency measures have been incorporated into the design of the centre to achieve this outcome:

- The highest water efficiency fittings and fixtures available are installed throughout;
- Rainwater is collected from the roof and balcony areas into a 120kL rain water storage system for reuse for irrigation and toilet flushing;
- Water rejected from the reverse osmosis system from the laboratories areas. This provides up to eight per cent of the toilet flushing requirements for the facility;
- Fire sprinkler testing water is recirculated using a Zonecheck recirculating pump system and not expelled from site. Approximately 95 per cent of fire testing water is reused this way;
- Evaporative pads are fitted to the air cooled chillers reducing the building's energy consumption in peak summer conditions. These pads use 95 per cent less water than traditional cooling towers.



WASTE

More than 18 per cent of all waste generated this year was recycled.

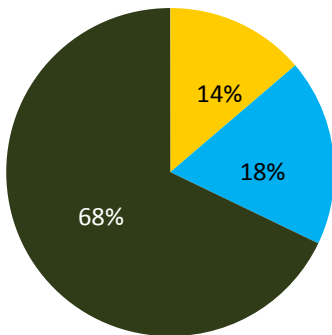
Waste Management

It is estimated that 260,000 tonnes of solid wastes are generated by Victorian hospitals annually^{iv}. The safe treatment and disposal of all wastes generated by the healthcare services provided at Austin Health is an operational priority. Complying with relevant legislation and aiming to avoid the generation of waste are key to the waste management systems, procedures and policies.

Austin Health annually audits waste by weight at the three main sites. Findings from the audit revealed that in the following streams correct segregation was achieved:

- Recycling 99.5 %
- General 89.8 %
- Clinical 97.2 %

Waste treatment and disposal by weight



- General waste is disposed of in landfills.
- Clinical waste, depending on its type, is typically shredded and sterilised to be disposed of in a landfill or incinerated.
- Commingled recycling is sorted at a materials recovery facility, sent to a recycler for further processing and made into new products.

*This graph represents the total weight of solid waste generated at all Austin Health sites during 2012-13.

Waste Reduction Activities

The Food Services department at Austin Health have commenced a trial with the aim to divert 3.5 tonnes of food waste from landfill each week through composting.

An organics composting machine has been installed at the Austin Hospital; it uses heat, physical agitation and microbes to break down the food waste rapidly, producing compost within 24 hours.

The trial project began in May 2012 and despite experiencing a number of challenges during the commissioning phase, kitchen food waste has been successfully turned into compost.

Composting aligns with the Victorian Government's *Conserve, Invest and Save* strategy^v which aims to divert food waste from landfill. Additionally, it can reduce waste disposal costs.

Traditionally more than 16,000 paper payslips are printed annually for employees. The Human Resources team are transitioning to an electronic system that will allow for online payslip access. It is anticipated that 50 per cent of employees will be using the system by the end of 2013, with significant potential for paper savings.

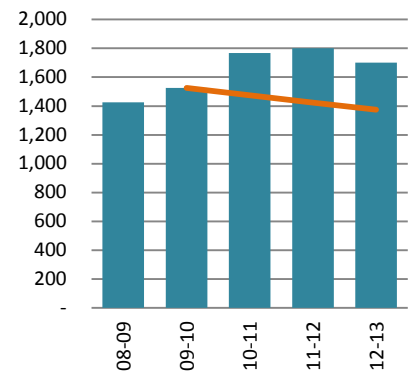
A printer cartridge and toner recycling program continues, this year sending more than 100 cartridges for remanufacturing and 50 for plastics recycling.

During National Recycling Week in 2012, a roving display, themed activities, a competition and give-aways encouraged conversation about waste and recycling among staff, visitors and patients.

The continuation of the online Stationery Reuse List, implemented in 2011, has seen more than 250 stationery items listed and swapped between staff. This simple and low-maintenance system helps reduce waste to landfill and avoids unnecessary spending on new stationery.



Total Waste Generation (T)



- Total Waste (T)
 - EMS 10% waste reduction goal
- Data presented in the graph includes all patient related wastes and recyclable items, it excludes materials such as construction and building waste.

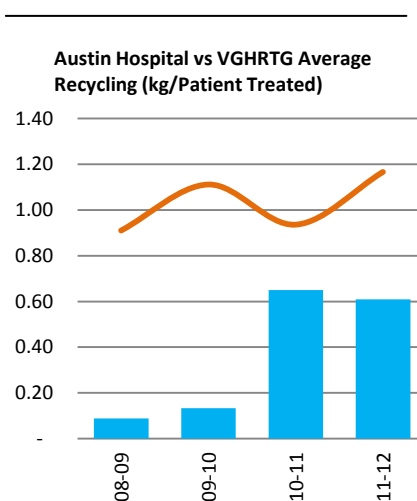
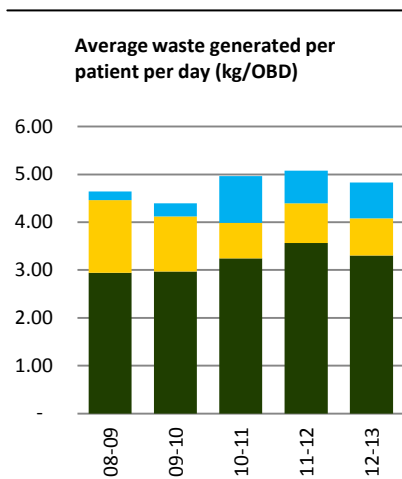
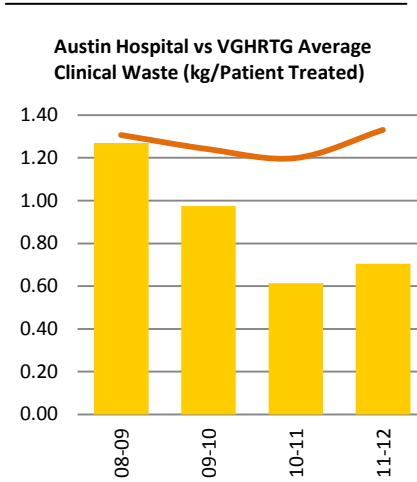
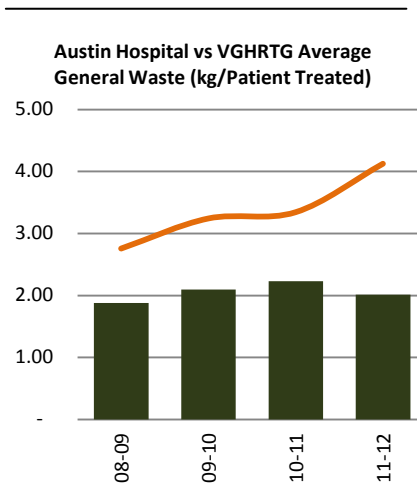
Benchmarking

In 2012-13, the treatment of a single patient averaged less than five kilograms of waste per day.

Austin Health is a member of the Victorian Green Health Round Table Group (VGHRTG), which provides a forum of information sharing for member organisations. One key activity undertaken by the group is comparing waste volumes generated. Each organisation provides data for their most representative site e.g. usually the largest site that includes an emergency department, inpatient and outpatient services.

During the last few years, Austin Hospital has come close to or bettered the average results across the member organisations. It is rewarding to see employees waste reduction efforts achieving results.

Along with the increased focus in this area with the implementation of the first Environmental Management Strategy in 2012-11, the amount of waste generated has decreased along with the reduction of clinical waste and an increase in recycling.



- General waste excludes hard rubbish and construction waste.
- Clinical wastes.
- Commingled recycling excludes all 'other' recyclables: batteries, light globes, printer cartridges, food and garden waste, confidential paper and electronic waste.

- General waste
- Clinical waste
- Commingled recycling
- Victorian Green Health Round Table Group (VGHRTG) members Average

"Patient Treated" is the sum of Occupied Beds, Emergency Department presentations and Outpatient attendances.

GREENING

Gardens and Grounds

More than 1,000 additional plants were planted on hospital grounds this year.

The Gardens and Grounds Project at Austin Health has continued to be a successful initiative, with the primary aim of increasing gardens and vegetation for the benefit of our patients, visitors and staff, and for the environment. Previous projects have proven to be successful with high use and engagement of these gardens which has enabled further projects to be implemented.

A collaborative doctoral research project continues between Austin Health and Deakin University to explore the health and wellbeing experiences of patients, visitors and staff in accessing gardens and nature within a health care setting. Data is currently being gathered via interviews. Ongoing partnerships with Avocare, Amgrow Fertilisers and Neutrog Fertilisers continue to support the gardens through in-kind donations.

The Gardens and Grounds Project won the business category of the 2012 Cities of Darebin and Banyule Sustainability Awards for its focus on improving the hospital environment through sustainable gardens. The gardens and grounds project officer and horticultural therapist, Steven Wells, was also named the 2012 ABC Gardening Australia's Gardener of the Year. As a result of these accolades there has been significant interest from community groups, healthcare organisations and various forms of media that have provided many forums for sharing the vision, gardens and success of this initiative.

Recent garden projects undertaken include:

Heidelberg Repatriation Hospital

- Darley House West aged care balcony garden;
- Coral Balmoral Building revegetation.

Austin Hospital

- Paediatric Ward relaxation garden;
- Radiology Department staff courtyard;
- Intensive Care Unit staff courtyard;
- Olivia Newton-John Cancer & Wellness Centre courtyard and balconies;
- Austin School;
- Austin Child Care Centre master plan.

The Gardens and Grounds Project at Austin Health joined the social media site Facebook in 2011. Using this space to connect with staff, patients and the wider public about garden project updates, has highlighted the overall positive effect the garden spaces have on people.



"We are providing places and areas for patients, visitors and staff to have respite, recovery and a chance to leave the clinical hospital setting and sit in a more natural garden environment,"

Steven Wells



Transport

With improved vehicle management the number of tyre replacements has halved.

A number of internal travel optimisation projects commenced as a result of surveying staff on transport and travel habits. Activities have included improving signage and communication of facilities such as bike cages and providing more user friendly information on the organisation's intranet.

Investigations are underway to increase patronage of local public transport, the use of the organisation's fleet vehicles and the staff shuttle bus services for the coming years.

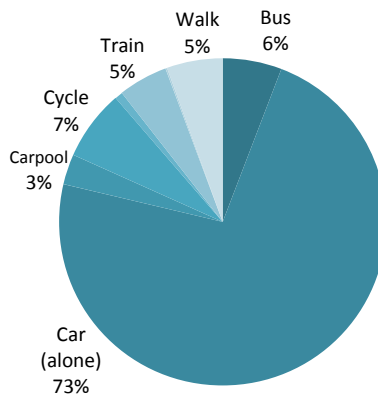
In the three years of the EMS, changes to the way fleet vehicles are maintained have resulted in significant greenhouse gas emission and financial savings.

Austin Health is trialling an electric vehicle in the fleet as part of the Victorian Department of Transport's electric vehicle trial. Electric vehicles may suit the travel requirements of some staff regularly travelling to locations within the community. Initial analysis of current fleet vehicles show running costs could be reduced from \$16 to \$2 per 100 kilometres travelled and in some cases approximately 80 per cent of the trips made by staff are for distances less than 20kms.

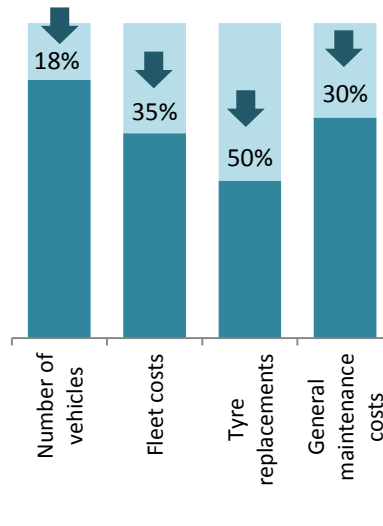
Assistance from a local car dealer, one of Austin's car leasing contractors and the Austin Health Veterans Liaison Office enabled participation in the trial to become a reality.

Charging units have been installed at the Heidelberg Repatriation Hospital site and data collection from the vehicle's use is underway.

Staff travel preferences to work



Fleet management improvements 2010-2013



ACKNOWLEDGEMENTS

All data presented in this report was obtained from resource suppliers, contractors, internal sub-metering, audits, the Victorian Department of Health and other relevant Victorian healthcare organisations (benchmarking).

This report has been prepared by the Sustainability Unit with assistance from the following departments: Fleet Management, Human Resources, Facilities Maintenance, Corporate Communications and Capital Works.

Photography by Lauren Poulton, Steven Wells and Madeline Dorman, as well as Sustainability Photo Competition finalists: Geraldine Richards, Tessa Young and Marieke Kersten.

Austin Health
145 Studley Road
Heidelberg VIC 3084
☎ (03) 9496 5000
www.austin.org.au

REFERENCES

- ⁱ [Green Building Council of Australia \(GBCA\) - developing a sustainable property industry for Australia](#)
- ⁱⁱ http://www.audit.vic.gov.au/reports_and_publications/latest_reports/2012-13/20120912-Energy-Health-Sector.aspx
- ⁱⁱⁱ [http://www.capital.health.vic.gov.au/Assets/Files/Guidelines%20for%20sustainability%20in%20health%20care%20capital%20work%20\(July%202010\).pdf](http://www.capital.health.vic.gov.au/Assets/Files/Guidelines%20for%20sustainability%20in%20health%20care%20capital%20work%20(July%202010).pdf)
- ^{iv} <http://www.capital.health.vic.gov.au/sustainability/>
- ^v <http://www.sustainability.vic.gov.au/www/html/1812-grants-and-funding.asp>

ABBREVIATIONS

| | |
|---------------------|--|
| tCO ₂ -e | tonnes of carbon dioxide equivalent greenhouse gas emissions |
| GJ | gigajoules |
| SqM | square meter |
| kL | kilolitre |
| T | tonne |
| Kg | kilogram |
| OBD | occupied bed day |