

Executive Summary

The Chapman University 2013 Environmental Audit was conducted during Spring semester 2013. Ten areas of campus activity were examined. The authors provided historical overviews, made assessments of current practices, identified opportunities for improvement, and proposed recommendations. The following are summaries of the ten chapters included in this report.

Building Construction

Sustainability practices in building design, construction, and operating systems on campus will reduce material and energy waste, save money on utilities, and better provide for Chapman's growing student population. Chapman's two most recent constructions, Doti Hall and Cypress Street School, were built and renovated to LEED standards. To significantly improve longevity and efficiencies of Chapman's historical buildings, it is recommended for Chapman to:

- Create a comprehensive database of retrofits performed, suppliers and materials used, including the type of fixtures, appliances, and HVAC systems installed in each building.
- Implement a *New Building Specification Policy* that incorporates designs and energy system requirements for building architects and contractors to meet LEED-equivalency for all future projects.

Curriculum

The historical significance of sustainability curriculum at Chapman University has been minimal until recent years. The awareness of sustainability related issues and practices has been increasing on campus and the integration of sustainability to curriculum has begun. There is still a lot to be done before sustainability can be successfully integrated among the majority of programs and schools; specifically, Chapman should:

- Make faculty more able to integrate and teach sustainability topics within their disciplines through seminars and incentives.
- Create a campus-wide sustainability policy that incorporates how the curriculum at the university has been influenced by the knowledge and awareness of sustainability related topics and issues.

Dining Services

Over the past ten years, sustainability in dining services at Chapman University has steadily increased. The addition of various campus initiatives as well as food waste measurement devices has allowed meal preparation methods and waste disposal practices to become more sustainable. However, there is a need for increased student awareness, involvement, and proper record keeping of food waste data among other areas. To do this Chapman needs to:

- Label locally-sourced meal options in dining areas and include descriptions of the environmental life cycle of the ingredients using the Real Food Calculator.
- Within three years of the Enviropure instillation, apply the \$16,000 saved annually strictly towards campus sustainability initiatives.

Energy

Energy consumption is one of the largest expenditures for Chapman University. During the 2010-2011 fiscal year, the university spent nearly \$2 million on electricity and natural gas. The university has started to become more aware of its usage and in 2012 began installing electricity meters onto each building on campus. As the university continues to expand the focus should be on ways to reduce energy usage and minimize cost. Recommendations to do so are as follows:

- Replace light bulbs as they burn out with the most efficient versions available on the market.
- Install smart metering that would allow the university to selectively shut down electricity during peak usage, saving the university substantially.

Landscaping

Chapman University takes pride in the beautiful campus that it has created and so the landscaping has taken a central role in the management of campus and in promoting the university itself. A few initiatives have already been taken to improve sustainability in the university's landscaping such as the installment of more efficient sprinklers, switching to a slow release fertilizer, and planting native species in 2 locations on campus. Despite these progressive steps, there is still room to improve in terms of green waste production and water consumption. To do this, Chapman should:

- Decrease the number of times that seasonal flowers are changed from 4 times to 3 times each year
- Designate areas on campus for native plant gardens that would require minimal inputs of water, fertilizer and herbicide while providing an aesthetically pleasing and educational setting for a sustainable future and the cultivation of global citizens on Chapman's campus

Procurement

Chapman University's procurement practices vary widely across all departments on campus, but in general, the focus of purchasing decisions is on quality and monetary cost. The university now includes some items made with recycled content as default items on their purchase order forms, has replaced many paper-based forms with electronic systems, reuses furniture where possible, and contracts a custodial service that practices blue cleaning. Some recommendations for continued improvement:

- Contract more sustainable items for purchase order forms and streamline the process of attaining used office furniture.
- Add a 5-8% threshold increase to individual budgets for the purchasing of sustainable items.

Recycling

With the continuing push for a higher waste diversion rate, Chapman has made major improvements in recycling efficiency. The implementation of simple and advanced recycling technologies such as double-sided waste/recycle bins and water bottle refill stations throughout campus have helped contribute to an increased recycling rate. Though these improvements have significantly increased recycling at Chapman, there is still much that can be done to improve the waste diversion rate. To do this, Chapman should:

- Strategically place and increase the number of recycling receptacles throughout campus.
- Implement a ban on all plastic beverage bottle sales on campus to reduce plastics consumption at the university.

Transportation

A growing student population at Chapman University has resulted in a greater number of commuters to campus. Since this increase, Chapman has provided some alternatives to make transportation more sustainable, such as the option of purchasing a carpool hangtag parking permit, the addition of additional bicycle racks and providing a discounted rate for public transportation methods. To increase sustainability in transportation at Chapman, some recommendations include:

- Advertise and promote alternative transportation options and provide maps outlining the available transit routes that could be used to travel to and from campus
- Implement a monthly *Sustainable Transportation Day* that students and faculty are encouraged to walk, bike or use public transportation systems to travel to campus.

Waste Management

Chapman's waste management programs have improved significantly over the last 8 years, especially after hiring both Karen Swift and Mackenzie Crigger. The University has seen the most improvement in reducing its waste as various recycling, composting, and reusing initiatives have been implemented. However, there are still a few areas that need improvement that can be better identified through a campus-wide waste audit. Some recommendations are as follows:

- Set all campus computers to double-sided printing by default to reduce paper costs and consumption
- Monitor and organize waste management programs for all types of waste to identify areas of opportunity

Water

Chapman University's water usage has never been a major topic of concern due to its inexpensiveness, and thus has not been closely monitored. As the university's enrollment continues to grow and limited water resources escalate in price, water will become a more significant concern. A few initiatives have been adopted to improve the efficiency of water usage through the installation of a new dishwashing system in the Randall Dining Commons, toilet guardians in some of the residence halls to eliminate water loss from leaks and running water, and an upgraded street sweeper. Further improvements can be attained by:

- Monitoring water records to address changes in water consumption
- Installing new showerheads and faucet aerators as well as replacing old broken toilets with more water-efficient fixtures.