



UC SANTA CRUZ

Sustainability



**2012
Annual
Progress
Report**

Sustainability is forever.

Getting excited about an idea and its potential is just a beginning. It's an energy source all its own. But it takes more than excitement, it takes commitment to *sustain* the focus. It takes hard work, knowledge, and leadership—*ability*.

At UC Santa Cruz we recognize that this passion for sustainability is our very own natural resource — one that is renewed and nourished year after year.

The following pages reflect the progress we have made in the past year toward our goals.

Sustainability is a part of who we are and what we value.

Cover image: Solar energy research in the lab of Sue Carter, professor of physics, includes the development of luminescent solar concentrators, which can be used to capture sunlight over a large area and concentrate its energy on a smaller area of solar cells. Luminescent solar concentrators, with solar cells arrayed along the edges, can be integrated into the windows of a building.



Campus Sustainability Plan

Most successful projects have their roots in a well-thought-out plan. That is true for our sustainability efforts. Goals, objectives, metrics, and policy are all part of our Campus Sustainability Plan. In fact, our plan is part of a bigger plan guided by University of California system-wide policies and influenced by state regulation and best practices.



Highlights





Largely due to student support, the Cowell Student Health Center met the goal of becoming certified LEED gold

63% of campus land is designated as undeveloped areas

Annual water use reduced by an estimated 30 million gallons

12,000 vehicles trips kept off local roads in spring 2012, through alternative transportation programs

2010-13 Campus Sustainability Plan. Our progress.

	Achieved	Progressing	We can do better
 <p>Buildings and Facilities</p>	<p>For new construction and renovations over \$5 million, achieve LEED "Silver" and strive to achieve LEED "Gold" or equivalent, exceed the energy efficiency standards of CA Energy Code (Title 24) by at least 30% and exceed Labs21 EPC by 20% or more</p> <p>Criteria for selecting leased space should include a interior rating that is equivalent to a LEED certified commercial space</p> <p>Consistently incorporate "green workshops" early in the Detailed Project Program and Project Planning Guide project phase; base design decisions on thorough life cycle cost analyses</p>	<p>Define criteria and set targets for implementation of sustainability guidelines for new projects and operation of built spaces and developed outdoor areas</p> <p>Define, incorporate and comply with sustainability guidelines in campus design standards for new projects and operations of built spaces and sustainable maintenance and operations policies</p>	<p>Develop and document opportunities to integrate and communicate "economic and "social" benefits of sustainable design into construction, operation and maintenance of campus buildings and facilities</p> <p>Develop internal criteria, guideline and credits for sustainability performance of existing building; develop pilot auditing template and test on various building types; begin tracking conversion of existing building as % of total square footage, develop metrics, set targets</p>
 <p>Land, Habitat and Watershed</p>	<p>50% increase of student interns and volunteers actively engaged with land and habitat stewardship projects on the main campus</p>	<p>Secure and phase in staff and operational resources to implement critical stewardship programs and initiatives that 1) support instruction and research, 2) support environmental compliance and protect sensitive species and habitats, and 3) enhance community safety and enjoyment of campus natural areas</p>	<p>Initiate a Landscape Management Plan for main campus that includes a Fire and Vegetation Management Plan and provides strategies for effective habitat and sensitive species management</p> <p>Develop a Collaborative Plan for increasing the use of campus lands for education and research</p>
 <p>Transportation</p>	<p>Maintain ADT to UCSC's main campus below levels defined by the Comprehensive Settlement Agreement</p> <p>Create and implement a policy that integrate sustainability criteria and Fleet Services review into the approval process of UCSC fleet vehicle purchases</p>	<p>Decrease percentage person-trips to and from UCSC's main campus using single occupancy vehicles modes of transportation from 40% to 35%</p> <p>Reduce campus fleet fuel use by 15%</p>	<p>Develop UC system-wide alternative funding mechanisms for sustainable transportation initiatives</p>
 <p>Water</p>	<p>Maintain or decrease student per capita water use</p> <p>Maintain or decrease campus water irrigation</p> <p>Complete 19 high-priority water conservation projects identified in the Water Efficiency Survey</p> <p>Install metering on unmetered irrigation points identified by the Water Curtailment Task Force</p>	<p>Reduce water use in non-residential areas by implementing programs that provide incentives for conservation</p> <p>Create mechanisms for tracking cost savings resulting from reduced water use and redirecting said savings to future water conservation measures</p>	

Highlights

Achieved 2000 greenhouse gas levels ahead of 2014 goal

Exceeded the UC system goal of 20% sustainably-sourced food, leading the Chancellor to set a new target of 40%

Enabled campus purchasers to search for products flagged as “green” to increase environmentally responsible purchasing options

Conducted the first ever campus-wide waste assessment, revealing that 1/3 of the entire campus’ waste stream consists of used paper towels and napkins



Achieved

Progressing

We can do better



Energy and Greenhouse Gas

Reduce campus energy use (BTUs per Assignable Square Foot - ASF) by implementing planned energy efficiency projects in the Strategic Energy Plan

Reduce greenhouse gas emissions to 2000 levels by 2014 to the extent resources permit

Generate at least one megawatt of on-site renewable energy

Create a policy on growth related emission

Increase integration of energy and sustainability criteria into the design of new buildings and major renovations

Create a Green Fund for projects including mechanisms to track and reinvest savings



Food

Compost 100% of potentially compostable and biodegradable materials from dining operations

Increase total food purchased for UCSC dining that meet one or more “sustainable” criteria to 25%

Complete green certification of remaining dining facilities and encourage certification of vendor- or self-operated coffee shops/café facilities on campus

Reduce purchase of meat by UCSC dining operations by 10% from 2008 levels to 19% of total food purchases and evaluate the mitigation impacts of UCSC’s carbon footprint

Phase in sustainable procurement practices for remaining campus dining and vendor- or self-operated coffee shops/café facilities

Establish experiential learning garden sites at all colleges



Recycling

Compost 100% of potentially compostable and biodegradable materials from UCSC Dining operations

Conduct baseline campus-wide audit to effectively identify, prioritize and engage waste reduction/diversion strategies

Increase percentage of total reported waste self-hauled by Physical Plant to 90% for non-construction waste and 65% for construction waste by increasing capacity of waste management equipment, facilities, and staff to the extent resources permit

Increase non-construction waste diversion to 75%

Develop a sustainable recharge rate to support long-term viability of waste diversion activities and strategies



Procurement

Sustainable Purchasing Guide

Increase percentage of total spend for purchases of office supplies with recycled content using Cruz-Buy e-procurement tool

Reduce print and copy paper use and move toward adopting 100% post consumer waste office paper standard

Review campus printing and copying requirements and match requirements with appropriate Energy Star-rated network equipment

Develop appliance replacement plan based on cost-avoidance study and facility renovation schedule, and identify funding sources required to implement



Awareness, Education, Engagement

Sustainable practices are integrated throughout UC Santa Cruz. From classrooms to dining halls to the Chancellor's office—people are changing their behavior and they are helping others to change theirs, too. This is a passion with a purpose, a passion worth sharing.

This section characterizes the curricular and co-curricular learning opportunities presented to students at UCSC. Some are in the classroom, while others are experiential and occur among peers or in informal situations.

Education (Curricular and Co-Curricular) and Research

Campus Sustainability Internship Program (CSI)

Curricular and Co-Curricular

A year-long combination course/internship that helps students develop competencies necessary to become effective environmental professionals and leaders. Students are paired with staff or faculty mentors with whom they work collaboratively.

Chancellor's Undergraduate Internship Program (CUIP)

Co-Curricular

Competitive internship program that provides offices on campus an opportunity to hire students to assist with campus projects. While projects are not necessarily related to sustainability many previous sustainability projects have been supported through the program.

Curriculum

Curricular

When last assessed in 2006-07, UCSC offered 163 courses, internships and field studies from a broad range of disciplines and departments that provided students an opportunity to learn about sustainability (38 graduate courses, 98 upper division undergraduate courses and 27 lower-division undergraduate courses). Of the 1,313 General Education classes identified in 2006-07, only 25 were sustainability-related. We plan to complete an assessment of campus curricular opportunities during the next Campus Sustainability Planning Cycle 2013-16.

Education for Sustainable Living Program (ESLP)

Curricular, Student Initiative

A collaborative and interdisciplinary student-led effort to reshape the way students learn and engage in projects that support sustainability on campus. Supports student-led 2 and 5-unit sections, guest speakers, and inspires participants to internalize the concept of sustainability within academia and greater society.

Food Systems

Co-Curricular

Students have many opportunities to learn about sustainable agriculture and become involved in making the campus' food system more sustainable including: Center for Agroecology and Sustainable Food Systems; Life Lab Science Program (environmental education for schools); Food Systems Working Group; Students for Organic Solutions (Student Environmental Center campaign); College Gardens and garden internships.

Friends of the Community Agroecology Network (FoCAN)

Research and Co-Curricular

"A student-initiated community that supports CAN's mission of promoting rural livelihoods and sustainable food systems through action, education and participatory action research."

Green Office Certification Program

Co-Curricular

Educates and encourages faculty and staff to work toward a more sustainable campus by providing them with a framework for implementing waste reduction and conservation practices in their workplace.

Impact Designs: Engineering and Sustainability through Student Service (IDEASS)

Research and Education

Interdisciplinary 5-unit upper division capstone course open to students from all majors but emphasizing building relations between Social Science (especially Environmental Studies) and Engineering. Students plan, implement and evaluate "green-tech" community-based (mainly off campus) service-learning projects.

Office of Physical Education, Recreation and Sports (OPERS)

Co-Curricular

Offers day and weekend trips, ongoing classes (not for credit), free bicycle repair and licenses every Thursday, and wholesale prices for bike lights. Hosts special events at Earth Day, offers workshops on sustainability topics and organic farm tours, and visits to Native American Reservations to learn their approach to sustainability.

Program in Community and Agroecology (PICA)

Co-Curricular, Student Initiative, Communication

The PICA residential program offers students an alternative to standard dorm living on campus and demonstrates the link between healthy communities and healthy food systems. PICA residents grow organic food together, direct a composting program, participate in weekly community meals, and organize 3 campus-wide sustainability events a quarter.

Sierra Institute

Co-Curricular

Introduces students to outdoor experiences as a venue for learning about the environment. It is a for-credit outdoor learning program that gives students fifteen units per academic quarter of learning, traveling and outdoor activities.

Sustainable Living Center (SLC)

Research, Curricular, Co-Curricular, Student Initiative, Communication

A model action education center that provides students an opportunity to engage meaningfully with food systems, sustainability, and justice through experiential learning.

UCSC Natural Reserve

Research and Co-Curricular

Provides outdoor classrooms and living laboratories for students and faculty across academic disciplines. The Reserve offers internship, volunteer, and hands-on opportunities to apply classroom learning in the field.

Student Fee Measures

Student Fee Measure 24: Transportation

Co-Curricular and Student Initiative

The Student Transit Fee originated in 1972 to fund unlimited “fare-free” ridership by UCSC students on the Santa Cruz Metropolitan Transit District (SCMTD) buses operating within Santa Cruz County. In 1988 use of the fee was extended to include Campus Transit operations. In 2011-12, the fee generated \$6.4 million in revenue—which funded the transport of 2.199 million UCSC student riders on SCMTD and another 2.305 million passengers on Day, Night, and Night Owl buses operated by TAPS Campus Transit. In 2012-13 SCMTD ridership (and billings) is expected to rise by 4-6% due to restoration of service cuts implemented in September 2011.

Student Fee Measure 43: Food, Health and Wellness

Co-Curricular and Student Initiative

Provides funding for programming and educational support related to sustainable food, health and wellness initiatives for on-campus and off-campus undergraduate students through a compulsory fee of \$3.75 per quarter, per student. The fee generates more than \$100,000 a year, which is administered by the Center for Agroecology & Sustainable Food Systems in conjunction with student and faculty representatives.

Student Fee Measure 44: Carbon Fund

Co-Curricular and Student Initiative

In 2010, UCSC students voted, in record numbers, to pass Measure 44, creating UCSC’s Carbon Fund to provide funding for projects that reduce greenhouse gas emissions. In 2011-

2012 academic year, the Carbon Fund received an allocation of \$111,420. In Fall 2011, five projects were awarded grants totaling \$108,146. In Winter 2012, three projects were awarded grants totaling \$26,130.

Student Fee Measure 45: Sustainability Internships

Co-Curricular and Student Initiative

Provides funding for the Sustainability Office to hire student interns, fund collaborative projects outlined in the Campus Sustainability Plan, and initiate a revolving loan fund for projects that implement sustainable and cost saving technology and practices. In 2011-12, the measure supported a full-time Sustainability Internship Coordinator; 26 student interns working in the Sustainability Office; eight students working across campus departments and units; and six professional development trainings for student interns. In 2012-13, we will expand the Campus Sustainability Internship Program and develop strategies for piloting the revolving loan fund.

Campus Sustainability Council

Co-Curricular and Student Initiative

Provide funding to registered UCSC student organizations for programs and events that create, implement, and monitor environmentally-sound practices on campus as established through the protocol outlined in the Blueprint for a Sustainable Campus. In 2011, CSC funded projects in 11 organizations in winter and 10 organizations in spring for a total of \$153,313.

Initiatives

Real Food Commitment

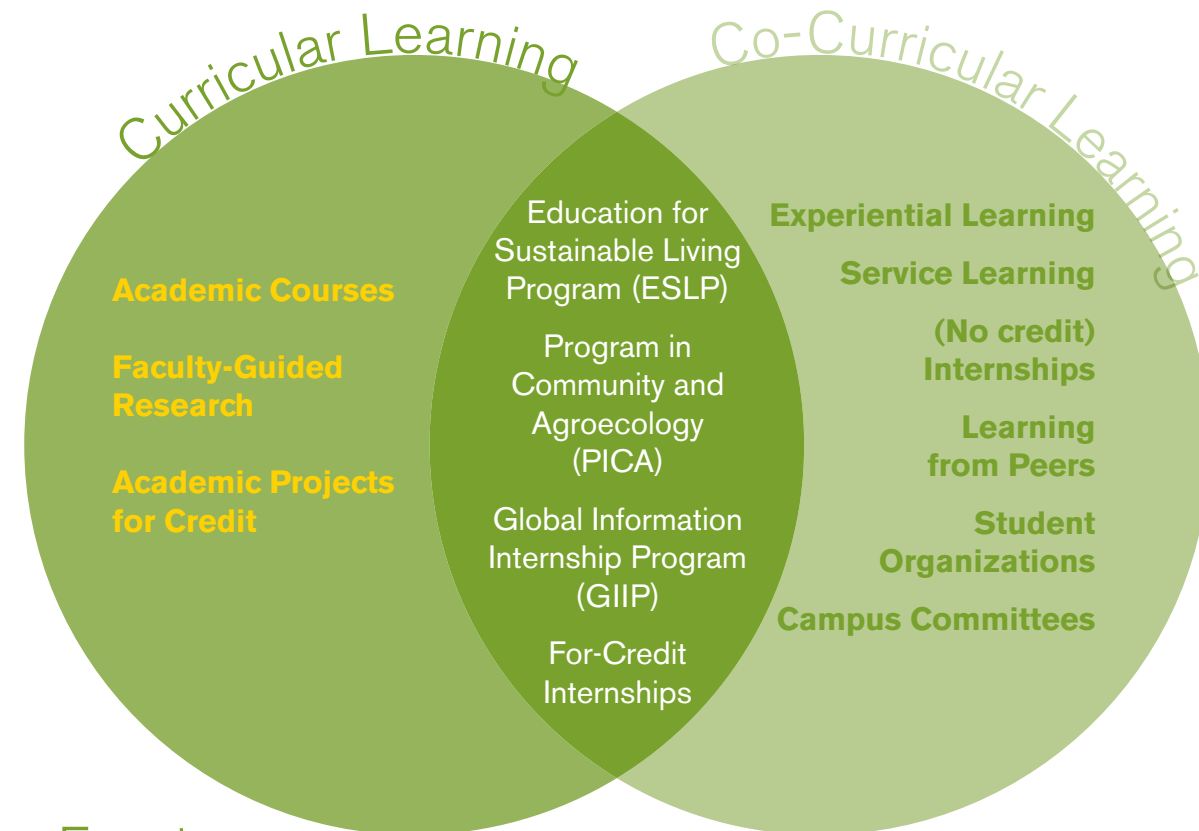
Student Initiative

Commits UCSC to meet or exceed 40 percent “real food” purchases in dining services by 2020. Currently, UCSC is operating at a 28 percent “real food” level, which exceeds the UCOP Sustainability Practices Policy mandate of 20 percent by 2020.

Zero Waste Programs

Co-Curricular

Zero Waste initiatives are implemented collaboratively and strive to reach the UC system-wide goal of Zero Waste by 2020. In 2011-12, the EVC charged the Landfill & Solid Waste Diversion Task Force to conduct UCSC’s first-ever campus-wide waste assessment. Several successful pilot projects were initiated to address the findings including: Stevenson College dormitory paper towel removal; Porter, Merrill and Crown Colleges trash chute conversions and closures; campus-wide educational resources; recycling bin label re-design, and acquisition of a recycling sorting line to help separate high-value materials from the recycling stream.



Events

Annual End-of-Year Sustainability Celebration

Co-Curricular/ Communication

Annual event where students, staff and faculty across campus reflect on sustainability accomplishments and set priorities for the coming year.

Earth Summit

Student Initiative

A student-initiated event for the campus community to determine their involvement and action for the topic areas covered in the Blueprint for a Sustainable Campus. Much of the event is formatted by students and usually includes project planning, opportunities to tackle the issues raised at the Student Environmental Center (SEC) breakout events, and workshops about current campaigns and efforts to increase campus sustainability.

Hosting National and International Partners

Communication and Public Engagement

Events that connect UCSC to national and international partners provide an opportunity to learn and collaborate on sustainability. In the past year, UCSC welcomed Francis Moore-Lappe to discuss her book “Eco-Mind”, representatives from Taiwan toured campus and shared sustainability efforts happening in their Universities, and the Real Food Challenge came to UCSC for a national youth conference.

Sustainability Inter-Organizational Retreat

Communication and Public Engagement

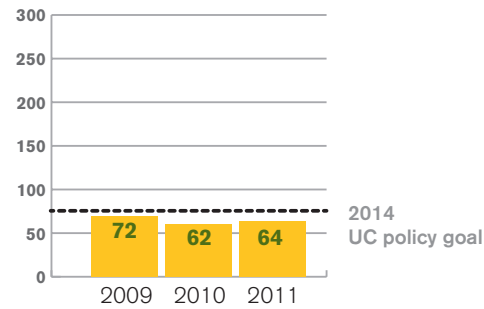
The Sustainability Inter-Organizational Retreat brings students and staff together to foster a shared vision of sustainability, share best practices, learn through workshops, and develop collaborations to implement innovative

solutions to environmental challenges on campus.

University of California system-wide sustainability goals.

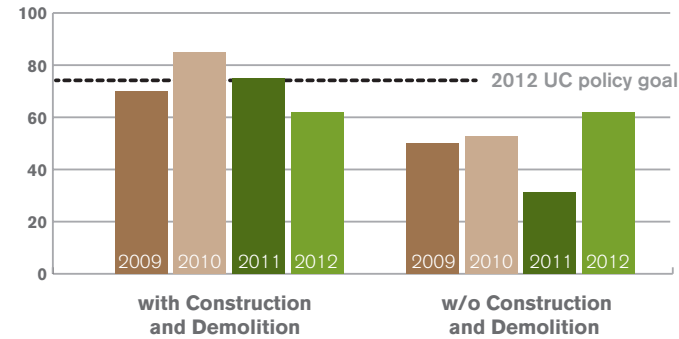
In addition to progress made towards system-wide goals, UCSC currently remains below the 25,000MTCO₂e emissions threshold by California's AB32 Cap and Trade regulation.

Greenhouse Gas Emissions
(Thousand Metric Tons of CO₂eq.)



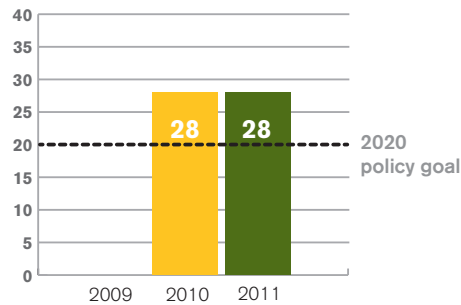
The 2011 greenhouse gas emissions fell below the 2014 UC Policy goal. Planned abatement measures include approximately 3,300 metric tons of projects that are underway or imminent, and an additional 5,500 tons that do not yet have certain funding or are only conceptual.

% Solid Waste Diverted from Landfill



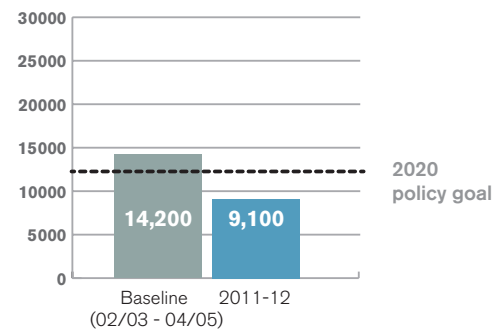
In FY 2011-12, the Santa Cruz campus diverted 64% of its waste from the landfill, a 10 percentage point decrease from FY 2010-11. However, this decrease is completely due to having no construction and demolition (C&D) waste in FY2011-12 after having a large volume of C&D waste in FY 2010-11. For non-C&D waste, the campus nearly doubled its diversion rate, increasing it to 63%. This rate is still below the 2012 goal.

% Sustainable Food Purchases for Residential Dining Facilities



The amount of sustainable food purchases for the residential dining program stayed constant from FY2010-11 to FY 2011-12. The Santa Cruz campus' residential dining program has already surpassed the 2020 policy goal of 20% sustainable food purchases.

Potable Water Consumption (Gallons per Capita)



In FY 11-12, the Santa Cruz campus consumed 9,100 gallons of potable water per capita. This is a 36% reduction from its FY 2002-03 to FY 2004-05 baseline, enabling the campus to surpass the 2020 Policy goal of reducing potable water consumption by 20% below the baseline.



Looking forward

In the coming year we will continue to reach across departments and divisions to integrate sustainability into our daily operations and our campus planning. The next Campus Sustainability Plan is currently under-development. It will offer an opportunity to refine our goals and “dig-deeper”. It will reinforce the impact of our hard work, making sure our campus sustainability efforts do indeed, last forever.

Annual Sustainability Metrics for UC Santa Cruz

Data in Fiscal Years (unless otherwise noted)	1989-90	1999-2000	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Buildings & Facilities								
LEED buildings (Outside Gross Square Footage)			151,550	151,550	281,908	281,908	316,942	430,729
Total Campus Outside Gross Square Footage		3,915,623	5,551,431	5,572,695	5,716,352	5,693,505	5,729,245	5,659,559
UCSC Leased Property (Square Footage)			359,324	372,745	408,332	314,202	309,516	165,431
Energy ¹ *All energy data is reported in Calendar Years*								
Greenhouse gas emissions (MTCO ₂ e)	56,512	66,077	77,579	71,903	64,764	64,584	62,185	Pending
MMBTU/MGSF			0.104	0.101	0.096	0.098	0.099	Pending
Maintained Gross Square Footage (MGSF)			5,434,555	5,434,555	5,462,599	5,545,980	5,585,634	Pending
Electricity (kWh)			41,482,850	34,743,147	36,992,630	35,960,026	35,780,618	Pending
Natural Gas (Therms)			4,185,742	4,243,682	4,013,890	4,253,414	4,376,251	Pending
Propane (Gallons)			44,862	41,499	38,132	24,096	31,362	Pending
Diesel (Gallons)			8,444	17,272	26,451	11,556	19,246	Pending
Food								
Pounds of Meat Purchased per transaction (lbs)				0.21	0.19	0.19	0.18	0.20 ¹
Dining Hall Compost Trucked (tons)					105	300	510	494
Land, Habitat, Watershed								
Annual Interns & Volunteers					36.0%	Interns: 55 Volunteers: 144	Interns: 14 Volunteers: 173	Interns: 41 Volunteers: 145
Procurement & Business Contracts								
% of Total Spend - OfficeMax Purchases with Recycled Content				11.0% ²	15.7%	35.9%	31.25%	Pending
Paper Purchases in Cases: Virgin/0% PCW 30% PCW 50% PCW 100% PCW				Virgin: 381 30%: 6,162 50% : 8 100%: 34	Virgin: 271 30%: 4,075 50% : 22 100%: 44	Virgin: 263 30%: 3,615 50% : 35 100%: 325	Virgin: 195 30%: 2,567 50% : 56 100%: 185	Virgin: 346 30%: 2,595 50% : 92 100%: 217
Ave % PCW Content of Purchased Paper				28.7%	29.0%	33.7%	32.8%	32.0%
Transportation								
% of UCSC Traffic in Single Occupant Vehicles				38%	35%	35%	34%	35%
Annual Weekday Average Daily Vehicular Trips	18,517	21,898	22,359	21,904	21,242	22,136	21,248	20,201
Campus Fleet Fuel Use Breakdown (Gallons)	Pre-July 2008 fuel data reported in calendar years, and hence excluded from the data set				Diesel: 70,255 Unleaded: 164,847 CNG: 2967	Diesel: 77,886 Unleaded: 139,306 CNG: 3,741	Diesel: 88,805 Unleaded: 140,660 CNG: 3,302	Diesel: 90,859 Unleaded: 130,659 CNG: 5,671
TOTAL Campus Fleet Fuel Use (Gallons)	Pre-July 2008 fuel data reported in calendar years, and hence excluded from the data set				238,069	220,933	232,768	227,189
Water								
Water Usage (mGal)			219.83	216.29	187.54	169.28	178.28	160.49
Water Use Per Student (Gallons)		16,810	15,037	14,419	11,852	10,365	10,837	9,608
Irrigation Use (Thousands of Gallons)			44,923	44,705	40,178	33,054	34,835	51.425
Waste								
% Non-Construction Waste Self-Hauled				84%	84%	82%	undetermined ³	undetermined ³
% Construction Waste Self-Hauled				59%	62%	65%	undetermined ³	undetermined ³
% Non-Construction Waste Diverted				46%	55%	54%	59%	58%
% Construction Waste Diverted				37%	90%	96%	93%	83%
% Total Diverted				45%	73%	87%	74% ⁴	63.7% ⁴
Other								
On-Campus Students (3-Quarter Ave)	10,863	11,735	14,619	15,000	15,823	16,332	16,451	16,704

¹ CY12 as of May 2012

² FY08 as of Q4 (Apr-Jun 2008)

³ Reduced staffing levels have affected the ability to accurately track and report these figures

⁴ Reduction in capital construction as well as change in diversion calculation methodology at the system-wide level have contributed to lower overall diversion rates