


SUSTAIN | ABILITY  
FOR CAL POLY FACILITIES & OPERATIONS

CAL POLY

Developed by Facility Services, Facilities Planning & Capital Projects  
And in cooperation with the Sustainability Advisory Committee



A photograph of a campus scene. In the foreground, a paved road with a yellow double line runs from the bottom left towards the center. To the right of the road is a concrete curb and a grassy area with a large, leafy tree. In the background, there are more trees and a building with a light-colored facade. The sky is blue with a few white clouds. A semi-transparent white box is overlaid on the right side of the image, containing a quote.

“ As a polytechnic university, it is at the core of our mission to examine the ways in which knowledge may be applied to improve society, manage scarce resources and protect and preserve our environment. Sustainability is a high priority for the university and a key issue that should cut across all we do, including teaching, research and the practices we engage in on the campus.

— President Warren Baker



## TABLE OF CONTENTS

---

■ The Talloires Declaration	06
■ Sustainability in Facilities and Operations	08
■ Sustainability Highlights 2008 – 2009	10
■ Energy Use	12
■ Transportation	16
■ Water Resources	18
■ Solid Waste and Recycling	22
■ Greenhouse Gas Emissions	23
■ Land Use and Development	24
■ Operations Sustainability Plan	26

## A CONCEPT OF SUSTAINABILITY

---

Sustainability refers to ways that we as individuals and as a community can use natural resources to meet current needs without jeopardizing the needs of future generations. At Cal Poly, we strive to be responsible stewards of our lands, water, energy and other natural resources. This stewardship occurs in the context of furthering our principal academic mission and must reflect financial reality. Thus, sustainable operations and development can be viewed as a triad of interrelated forces that must become mutually supportive.



*The goal of a sustainable campus involves balancing Environmental Protection, Academic Program Needs and Financial Viability.*

## THE TALLOIRES DECLARATION

---

*In response to the problems of environmental pollution and degradation, and the depletion of natural resources, university leaders from around the world have recognized that universities have a major role in the education, research, policy formation and information exchange necessary to address these issues. The Talloires Declaration articulates the following key actions that are especially relevant to institutes of higher education:*

---

- Increase Awareness of Environmentally Sustainable Development
- Create an Institutional Culture of Sustainability
- Educate for Environmentally Responsible Citizenship
- Foster Environmental Literacy for All
- Practice Institutional Ecology
- Involve All Stakeholders
- Enhance Capacity of Primary and Secondary Schools
- Collaborate for Interdisciplinary Approaches
- Broaden Service and Outreach Nationally and Internationally
- Maintain the Movement



*Signed by Cal Poly  
President Warren Baker  
April 23, 2004*



## SUSTAINABILITY IN FACILITIES AND OPERATIONS

---

*At Cal Poly, sustainability is both a subject of teaching and research, as well as a principle that, in balance with other core values, guides campus planning, operations and maintenance. This report focuses on the University's efforts to run the campus in a more sustainable way.*

---

Understanding sustainability requires a systems perspective: an appreciation that many interrelated social, economic and environmental factors affect efficient resource use. Consider that Cal Poly's energy demand can be altered by conservation efforts of students living on-campus, by budget cuts that delay the implementation of energy-efficiency building upgrades and by weather fluctuations. The best approach to gauge changes in such a complex system is to focus on certain key indicators — variables that are clearly linked to sustainable practices and outcomes, and that can be measured by a consistent methodology over time. Cal Poly has identified several environmental indicators that the University regularly tracks.

This is the latest in a series of biennial reports highlighting the University's sustainable practices and showing trends among the indicators. Cal Poly has committed to long term environmental monitoring and reporting in recognition that developing more sustainable practices and facilities is an ongoing endeavor and that trends are more meaningful than any specific "snap shot" of conditions. This report covers trends through 2009.

## CAL POLY SUSTAINABILITY INDICATORS

---

### Energy Use

- *BTUs per square foot of building*
- *Percentage of electricity from renewable resources*
- *Percentage of vehicles in the campus fleet using alternative fuels*

### Transportation

- *Commuter parking permits sold per student*
- *Public transit ridership*
- *Percentage of student population living on campus*

### Greenhouse Gases

- *2006 baseline for ongoing emissions monitoring*
- *Percentage of electricity from non-GHG emitting sources*

### Solid Waste and Recycling

- *Percentage of solid waste diverted from landfills*

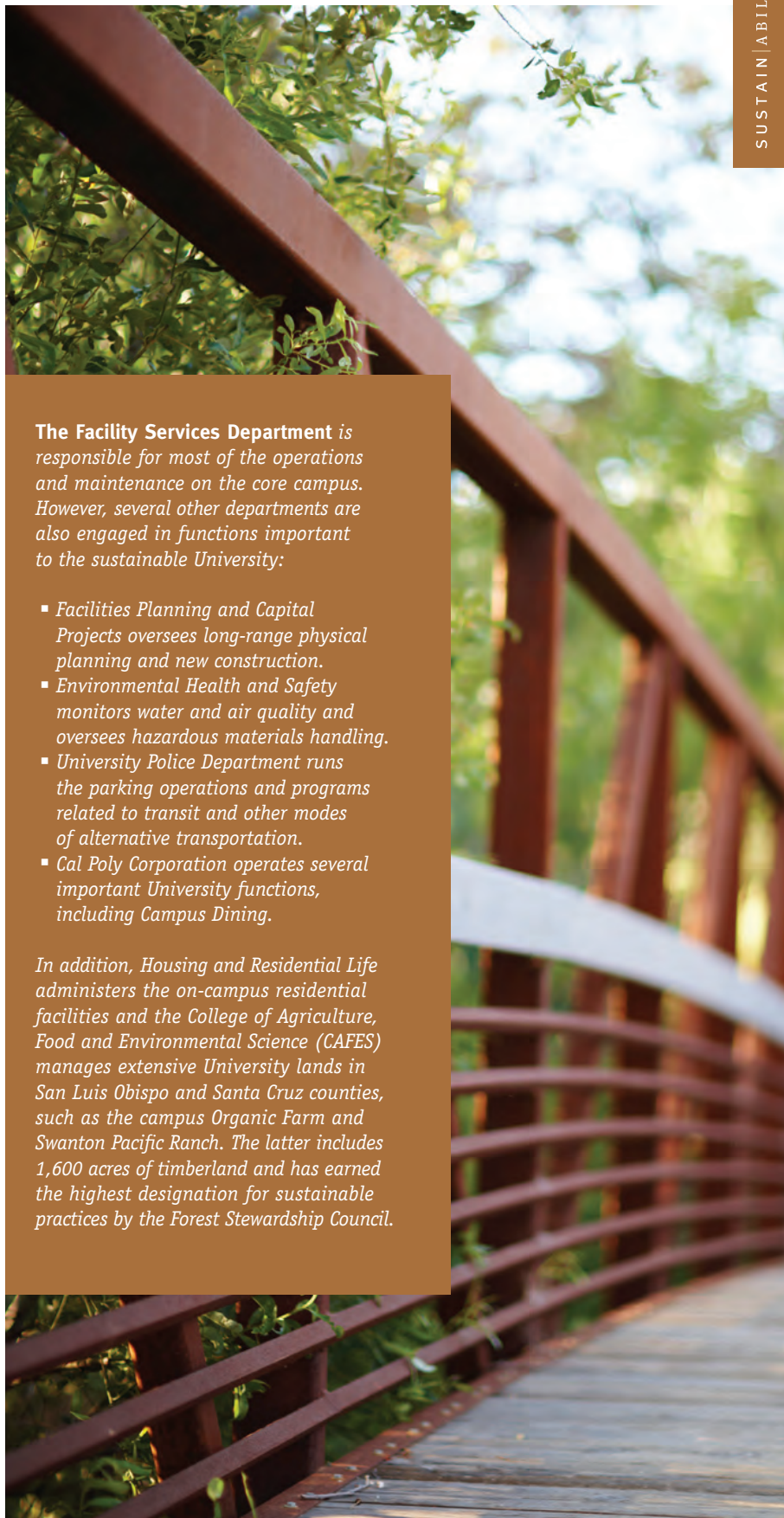
### Water Resources

- *Total domestic water use*
- *Total delivered water*
- *Indoor water use*
- *Pollutants in wastewater*
- *Nitrates in groundwater monitoring wells*
- *Fecal coliform in Stenner Creek*

### Land Use and Development

- *Percentage of campus square footage in LEED certified buildings*
- *Habitat restoration projects*





**The Facility Services Department** is responsible for most of the operations and maintenance on the core campus. However, several other departments are also engaged in functions important to the sustainable University:

- *Facilities Planning and Capital Projects* oversees long-range physical planning and new construction.
- *Environmental Health and Safety* monitors water and air quality and oversees hazardous materials handling.
- *University Police Department* runs the parking operations and programs related to transit and other modes of alternative transportation.
- *Cal Poly Corporation* operates several important University functions, including Campus Dining.

*In addition, Housing and Residential Life administers the on-campus residential facilities and the College of Agriculture, Food and Environmental Science (CAFES) manages extensive University lands in San Luis Obispo and Santa Cruz counties, such as the campus Organic Farm and Swanton Pacific Ranch. The latter includes 1,600 acres of timberland and has earned the highest designation for sustainable practices by the Forest Stewardship Council.*

## SUSTAINABILITY HIGHLIGHTS 2008-2009

*Although budget issues often overshadowed other operational concerns and certainly constrained capital funding during the last two years, Cal Poly still significantly advanced its sustainability efforts, many of which have now been recognized at the state and national levels.*

**Cal Poly hosted the 2008 UC/CSU/CCC Sustainability Conference to a record number of attendees.** Professor Margot McDonald of the College of Architecture and Environmental Design led the program, with the cooperation and support of Cal Poly's Administration and many campus departments including Facility Services, Facilities Planning, Cal Poly Corporation and University Police.

**Poly Canyon Village (PCV) – a new on-campus residential community that embodies “smart growth” principles – was completed and rapidly filled.** The 1.4-million-square-foot mixed-use complex, which provides apartment-style housing for over 2,600 students, achieved **Leadership in Energy and Environmental Design (LEED) Gold**, by far the largest LEED Gold project in the region and in the CSU.

**In accordance with the Master Plan, Cal Poly continued the conversion of the core campus into a more pedestrian-oriented place.** New paths over and along Brizzolara Creek now connect PCV to the academic center, and major portions of Via Carta, Polyview Drive and the south end of University Avenue have been repaved as plazas. Perhaps most dramatically, in conjunction with the remodel of the University Union Plaza and Recreation Center, South Perimeter Road has been closed to vehicular traffic and will be redeveloped as a new car-free zone for walkers and bicyclists.

**Cal Poly retrofitted and re-commissioned Faculty Office East, Building 25, to earn LEED Existing Building (EB) Silver.** This is the first LEED EB certification on campus and other upgrades to existing buildings are planned on a regular basis over the next several years.

### Academic Senate Adopts Sustainability Learning Objectives.

*Apart from the University's operational efforts, sustainability has also been recognized as an essential element of the Cal Poly educational experience. In 2009, upon the recommendation of its Sustainability Committee, the Academic Senate adopted university-wide Sustainability Learning Objectives, so that all Cal Poly graduates are expected to understand sustainability concepts and their relevance to our communities and society.*



UC/CSU/CCC Sustainability Conference



PCV Bike Racks

## SUSTAINABILITY HIGHLIGHTS 2008-2009

*Cal Poly's leadership in sustainability is increasingly recognized. During 2008-2009, the University earned the following awards and accolades for its sustainability efforts:*

### 2008

*Best Overall Sustainable Design  
(Bonderson Engineering Building)  
Best Practices in New Construction, HVAC  
(Satellite Central Plant)  
Best Practices in Sustainable Operations,  
Waste Reduction  
(Campus Waste Management Program)*

- The National Wildlife Federation's "National Report Card on Sustainability in Higher Education" rated Cal Poly as "Leading School for Environmental Sustainability Goal Setting" and "Leading Employer of Environmental Management and Sustainable Professionals."

### 2009

*Best Overall Sustainable Design  
(Science Center)  
Best HVAC Design/Retrofit  
(Various Projects)  
Best Lighting Design/Retrofit  
(Various Projects)  
Best Student Energy Efficiency Project  
(Green Campus Program)*

- GreenReportCard.org's 2010 College Sustainability Report Card cited Cal Poly as a "Sustainability Leader" and awarded Cal Poly a B+ grade — the highest rating among all CSU campuses.
- University of South Florida's National Center for Transit Research awarded Cal Poly its "Gold" medal as "Best Workplaces for Commuters." The US EPA recognized Cal Poly with similar awards in previous years.

### 2010

*Best HVAC Design/Retrofit  
(Recreation Center Expansion)  
Best Student Sustainability Program  
(Green Campus Program)  
Best Lighting Design/Retrofit,  
Honorable Mention  
(Recreation Center Expansion)*



*Green Campus Program*



*Bonderson Project Center*



**PCV Co-generation.** Poly Canyon Village uses a co-generation process: the waste heat from two high efficiency on-site electricity generators provides space heating and domestic hot water for the complex, as well as heating the swimming pool.

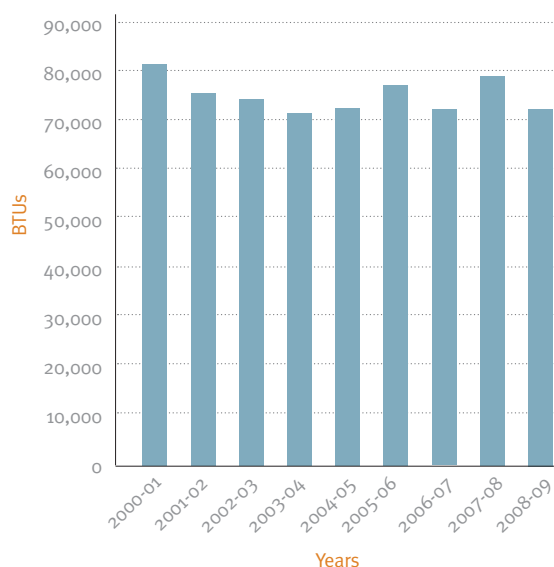


## ENERGY USE

*During the first half of the past decade, Cal Poly's total energy use per square foot of building steadily declined as the campus engaged in several energy-efficiency projects. Since mid-decade, average annual energy use per square foot has moved slightly up and down, with no clear trend.*

Several factors, some off-setting, may be at play. For example, new energy-intensive buildings have opened, including engineering labs and on-campus apartments. Recent budget issues have slowed the implementation of conservation projects and general building maintenance. These kinds of factors contribute to higher energy use per square foot. On the other hand, all new buildings are built and commissioned to be energy-efficient and some existing buildings have been retrofitted despite budget cuts. Furthermore, enrollment and staffing have declined over the past two years. These conditions have reduced energy demand. The relative contributions of these and other factors in the overall picture are hard to tease out at this time.

Figure 1:  
BTUs per Square Foot of Building



## ENERGY CONSERVATION

A multi-phase energy audit of the campus was completed in early 2010; it identified several millions of dollars in potential energy efficiency projects. Facility Services is sorting through the list and setting priorities based on how quickly the initial capital investment on improvements will be paid back through reduced costs from energy savings. Work on some of the projects has already begun and is expected to continue for many years. The audit also identified sites with potential for significant solar electricity-generating facilities. Proposals from solar generation vendors are expected in 2010, and opportunities for wind generated power are also being investigated. Budget cuts have meant fewer bond-supported dollars for upfront costs for energy-saving projects. This has slowed implementation of the audit's list of potential projects.

In the face of budget reductions, Cal Poly has worked to find alternative sources of funding through grants and utility incentives in order to continue work on energy efficiency projects, albeit at a slower than normal pace. For example, in 2008 Cal Poly partnered with the California Energy Commission (CEC) Public Interest Energy Research (PIER) program to implement 16 different HVAC and lighting technology demonstration projects that were fully funded by utility incentives and a CEC grant.

In 2009 Cal Poly installed network-based power management software on over 1,500 university-owned computers. The project, which reduced computer energy use by 30 percent, was fully funded by utility incentives and is now being expanded campus wide. Also in 2009, the University completed a lighting retrofit of the Grand Avenue parking structure that reduced its energy use by over 50 percent. That high-efficiency lighting design was then used in the two new parking structures at Poly Canyon Village. In early 2010, a complete lighting retrofit of 10 campus buildings reduced their energy use by over 20 percent. In total, over \$1 million was invested in energy efficiency projects over the last two years with more than \$450,000 from grants and utility incentives. These projects reduced campus electricity use by 1.4 million kWh per year, natural gas by 23,000 therms and water use by 740,000 gallons, resulting in annual savings of over \$190,000 in utility costs.

New projects already underway and future projects being developed include additional lighting and HVAC upgrades, low flow plumbing fixture retrofits, street and parking lot lighting retrofits and Monitoring Based Commissioning (MBCx) of several large campus buildings. MBCx optimizes building performance using metering equipment and the campus’s computerized energy management system.

## VEHICLE FLEET

Cal Poly has made a dramatic shift to vehicles that use alternative fuels including rechargeable electric, propane, bi-fuel (gasoline/propane), gasoline hybrid and biodiesel. Facility Services now runs almost half its fleet on alternative fuels.

## RENEWABLE SOURCES OF ELECTRICITY

By 2009, Cal Poly’s electrical power mix supplied by PG&E included about 16 percent from renewable sources such as geothermal, solar and wind generators, up from 13 percent two years before. Almost half of Cal Poly’s electricity comes from sources that do not emit greenhouse gases, including a small percentage produced by solar arrays on the roof of Building 21.

Figure 2: Percentage of Fleet Vehicles Using Alternative Fuels

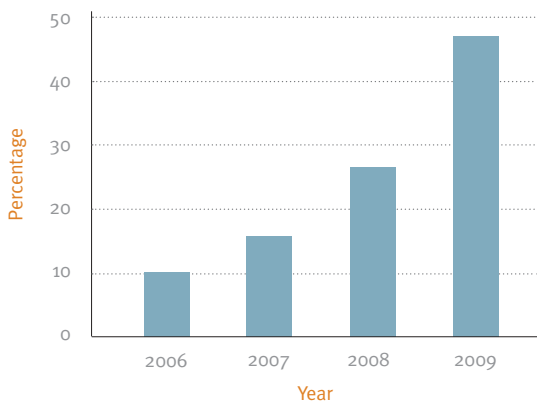


Figure 3: Electric Power Mix 2009

	Percent	Eligible Renewable	Non-GHG Emitting
Biomass and Waste	4%	Yes	No
Geothermal	4%	Yes	Yes
Small Hydro	4%	Yes	Yes
Solar	1%	Yes	Yes
Wind	3%	Yes	Yes
Large Hydro	16%	No	Yes
Nuclear	20%	No	Yes
Natural Gas	47%	No	No
Coal	1%	No	No
<b>Total</b>	<b>100%</b>	<b>16%</b>	<b>48%</b>
<b>2007</b>		<b>13%</b>	<b>45%</b>

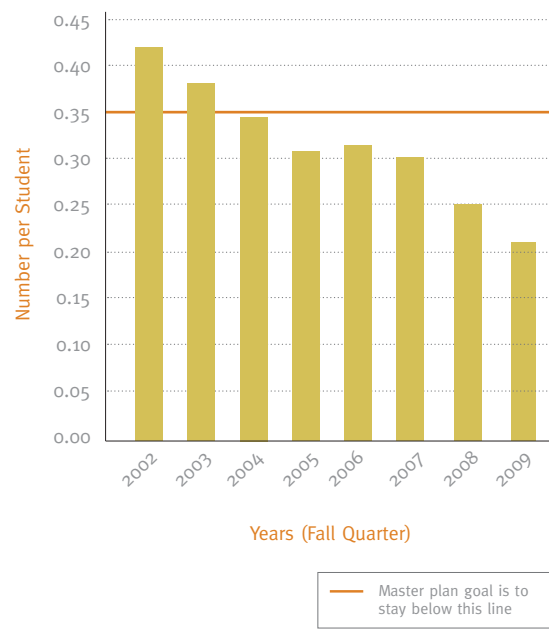


## TRANSPORTATION

*In accordance with the Master Plan, Cal Poly continues its transformation into a fuller residential campus; the attendant environmental benefits are perhaps most clearly apparent in the decrease in commuter parking permits. Ten years ago, the University sold one commuter parking permit for about every two students. In 2009, Cal Poly essentially halved that rate, selling less than one permit per every four students.*

This remarkable decline in automobile commuting is due to several factors, probably foremost, the construction of on-campus housing for 3,500 students since 2004. Other likely variables are the increased cost of parking, the relocation of parking lots farther from the core campus to make room for new academic buildings, the increased cost of gasoline, a recessionary economy and the ongoing efforts of Cal Poly to encourage alternative transportation, including free public transit for students and employees.

**Figure 4:**  
Commuter Parking Permits Per Student



**Bike racks.** PCV residents generated unexpectedly large increases in bicycle use. In response, Cal Poly increased its bicycle racks and bicycle lockers by more than 125 percent, to 4,975 and 206, respectively, over the last three years.

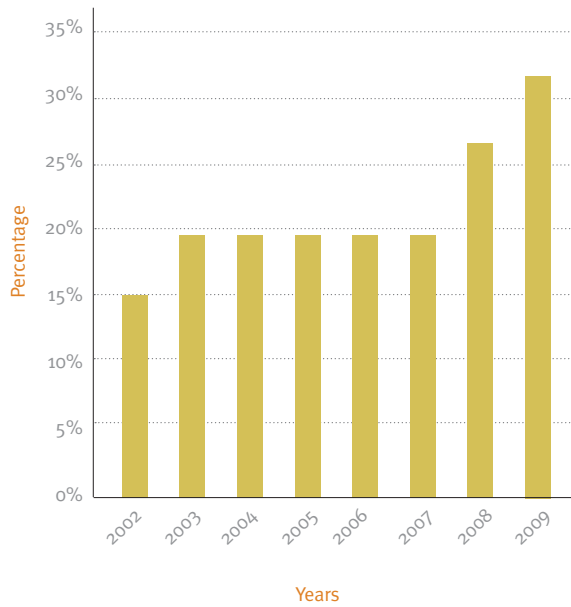




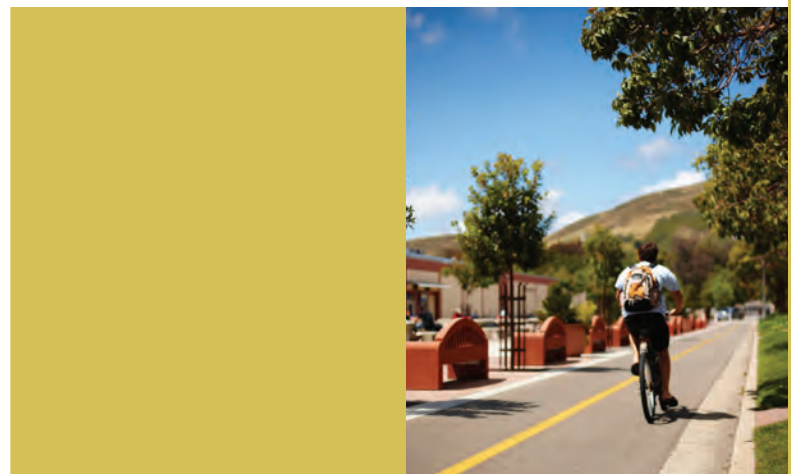
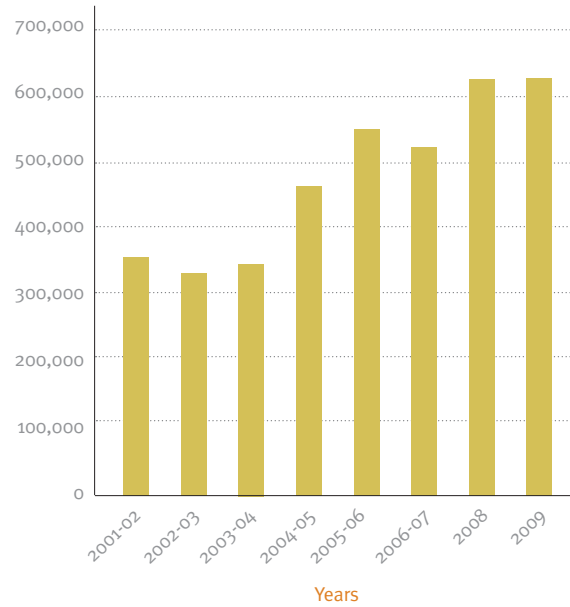
## TRANSIT RIDERSHIP

Cal Poly continues to contribute over \$330,000 each year to the City of San Luis Obispo transit system so that the University community can use local buses free of charge. In the early part of the decade, transit ridership hovered just above 300,000 rides per year. In 2008 and 2009, Cal Poly students, faculty and staff rode the City buses over 600,000 times.

**Figure 5: Percentage of Student Population Living On Campus**



**Figure 6: Cal Poly SLO Transit Ridership**



## WATER RESOURCES

*Cal Poly's water use increased after the opening of Poly Canyon Village as hundreds of students moved into the on-campus apartments during the first phase. That effect is reflected in the recent jump in indoor water consumption. Undoubtedly, those students would be using similar (or very likely higher) quantities of water if they were living off-campus in conventional housing.*

Moving students on campus into new, high-density, energy- and water-efficient residences has significant overall environmental benefits from the community-wide perspective. However, it does also result in higher levels of campus water demand. With the completion of PCV, Cal Poly has effectively set a new benchmark for tracking ongoing campus-wide water conservation efforts whose impacts are expected to be observed in the longer-term future.

Interestingly, even with the additional residential water demand, overall water consumption was still lower than earlier in the decade. Based on past usage, the 2001 Master Plan Environmental Impact Report estimated that the overall annual demand for water after PCV would be over 1,200 Acre-Feet (AF)/year. Actual use in 2009 was about 1,000 AF/year, considerably less than projected. This is due to the ongoing retrofit of water efficient fixtures throughout the campus, water efficiency in new construction, and greater conservation efforts in landscaping and agricultural operations. Total delivered water remains well below Cal Poly's "safe annual yield" which is the amount Cal Poly can withdraw from Whale Rock Reservoir (the campus's principal water source) without running short of water even under prolonged drought conditions.

Figure 7: Total Delivered Water

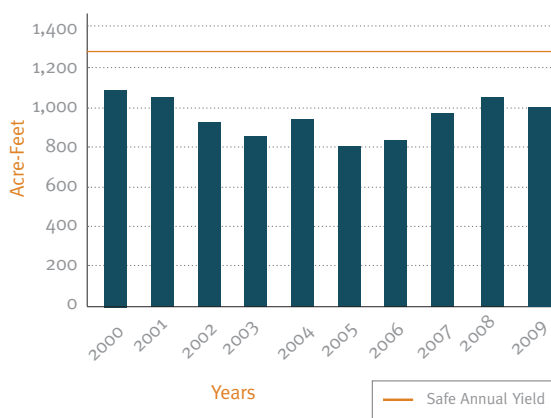


Figure 8: Total Indoor Water Use

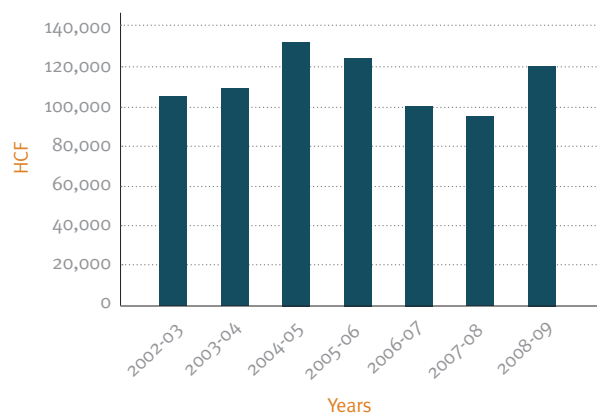
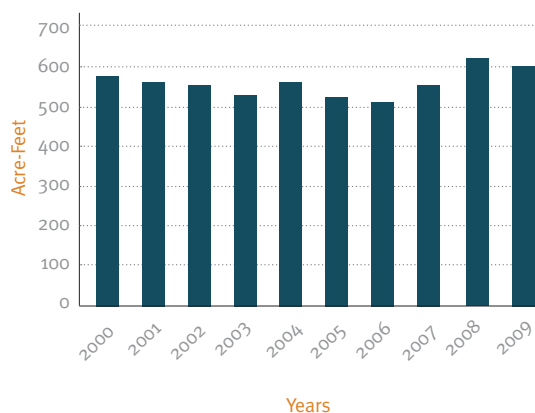


Figure 9: Annual Domestic (Treated) Water Use



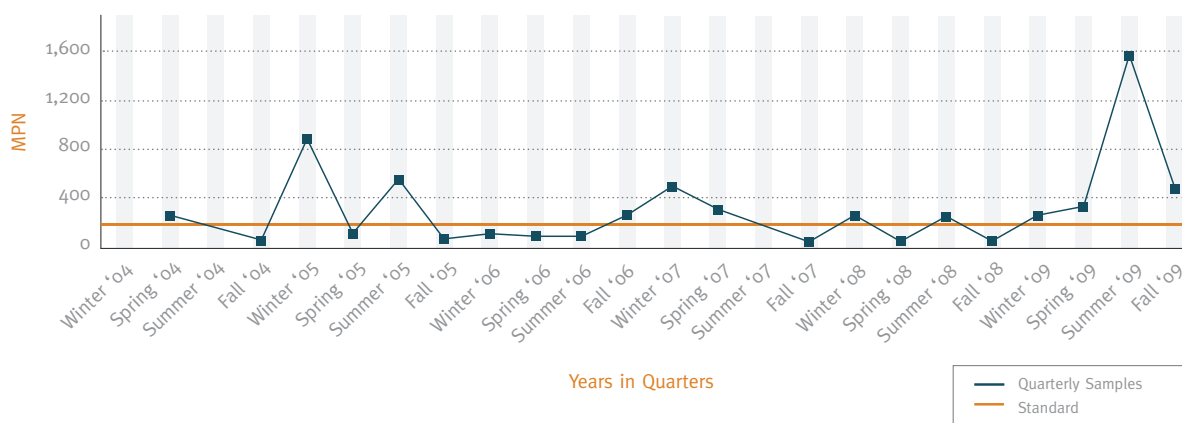
## WATER QUALITY

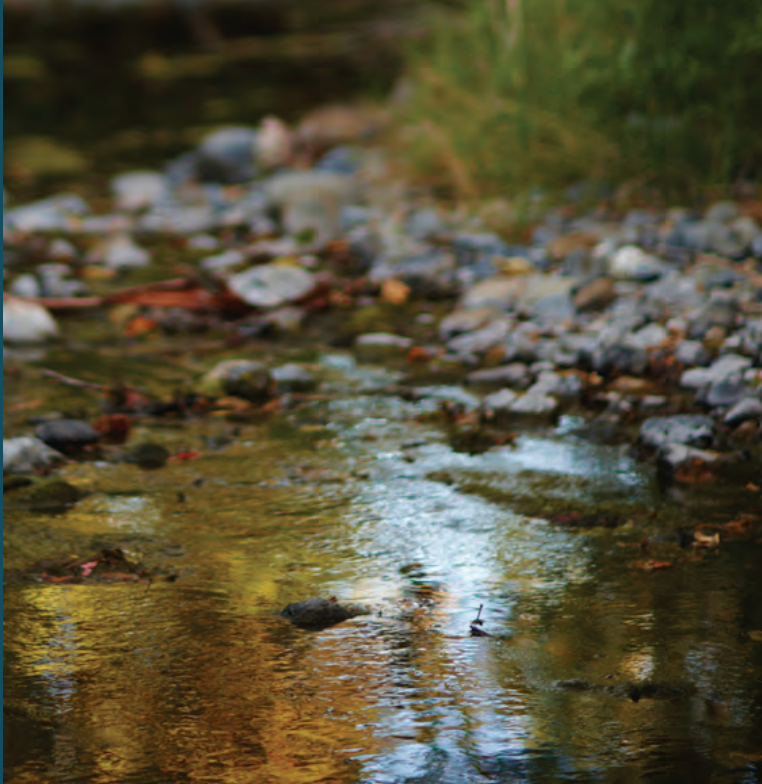
*Cal Poly measures pollutants in the creeks running through campus, in groundwater flowing under the campus, and in wastewater that leaves the campus through the sanitary sewer system.*

**Surface Water.** Every quarter, Cal Poly samples the water in Stenner Creek for the presence of fecal coliform, a measure of bacterial contamination. In 2009, levels of this pollutant exceeded water quality standards throughout the year, including a very high spike during the summer. After two years of unusually scant rainfall, the resultant low water flows in the creek probably account for the unacceptably high concentrations. Improvements are expected as flows return to more typical levels after the wet 2009-10 winter. However, the large numbers of animals on the core campus that are used for teaching and learning in the College of Agriculture, Food and Environmental Science (CAFES) constitute an ongoing challenge to water quality. CAFES and the University's Department of Environmental Health and Safety monitor the situation and have undertaken measures to reduce potential water quality impacts in the short term and are investigating options for more permanent solutions. CAFES has hired a new Farm Operations Manager whose focus will be on sustainable practices and regulatory compliance.

**Ground Water.** Measures of groundwater quality over the last two years generally reflected long-standing patterns. Based on concentrations of nitrates, a pollutant associated with fertilizers and animal waste, groundwater enters the campus relatively pollution-free, picks up additional nitrates as it moves under the campus, but meets nitrate standards as it leaves the campus. The samples are taken at monitoring wells set at different campus locations.

Figure 10: Stenner Creek Fecal Coliform





**Waste Water.** Campus wastewater flows through the sewer system to the City treatment plant; it is regularly monitored for the presence of a large number of pollutants. Most pollutants are simply not present or present only in amounts well below adopted standards. However, a few constituents are found to exceed usual standards based on monthly sampling. Copper, for example, continues to be an issue. Potential sources have been proposed and tested, but so far, no consistent solution has been found. The most likely culprits are existing copper pipes installed over many decades throughout the campus, a situation common to buildings and infrastructure in most places. Minute amounts of the metal slough off as water moves through them, eventually entering the sewer system waste flow.

Ammonia, another persistent problem, showed some improvement in 2008 only to rise again the following year. High ammonia levels, perhaps ironically, are exacerbated by water conservation measures. Low flow toilets and urinals save water but they also diminish the dilution of the ammonia associated with human waste.

Zinc and other metals did not exceed standards at any time. One odd observation is the frequency that suspended solids exceeded usual standards after years of improvements along this parameter. It is not clear whether this one-year spike reflects a new persistent problem or some unusual occurrence.

Figure 11: Nitrates in Groundwater

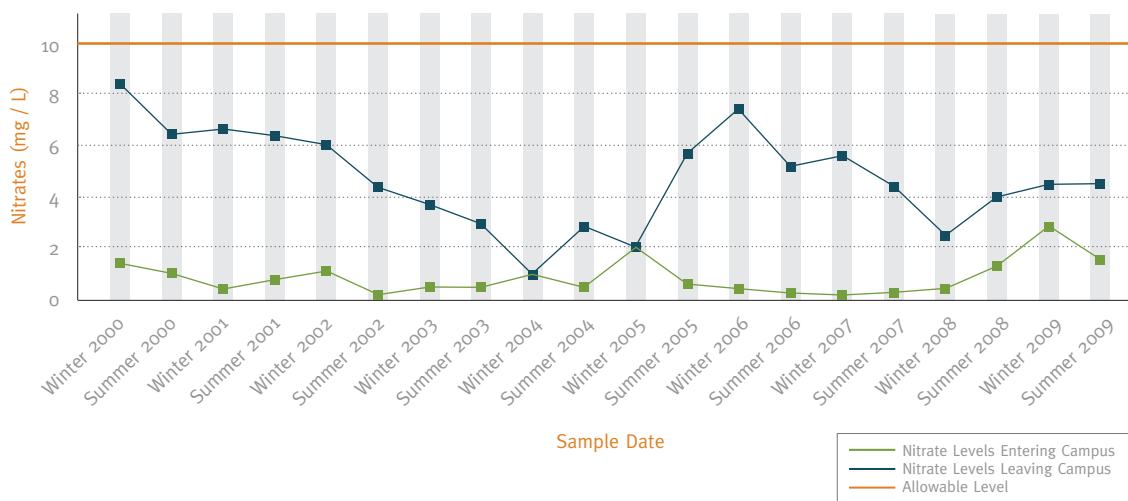
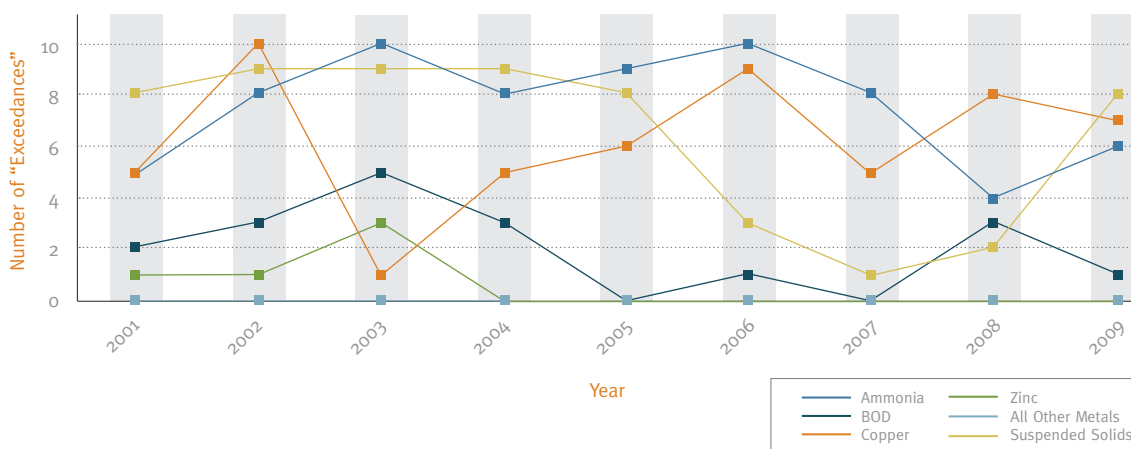


Figure 12: Wastewater Pollutants



## SOLID WASTE AND RECYCLING

*The majority of Cal Poly's solid waste is recycled or otherwise re-used. Cal Poly has a staff position devoted specifically to recycling operations.*

Landscape green waste is either used on campus or sent to off-campus composting facilities. Paper, aluminum, glass and plastics are taken to recycling facilities. Cal Poly requires contractors to ensure most construction-related waste is recycled or re-used, as well. Animal manure is composted and used on campus or sold off campus as fertilizer. The University has a goal of diverting at least 50 percent of its solid waste from landfill disposal, which has been continually met since 2003.

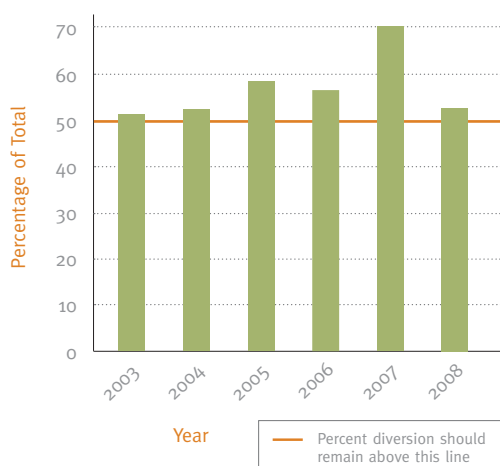
In 2007, Campus Dining, with the cooperation of CAFES, instituted an on-campus, post-consumer food waste composting program. The on-campus facility was discontinued, however, when monitors suspected

the compost may have contributed to surface water pollution, and solutions to that problem were found impractical and costly. Currently, post-consumer, biodegradable food waste is temporarily stored on campus and then taken to an off-campus composting facility.

Campus Dining has eliminated all polystyrene cups and containers, and uses only compostable or recyclable products. Campus Dining continues to recycle waste cooking oil into bio-diesel as fuel for their vehicles.

Cal Poly also operates an "e-surplus" program through which old furniture and equipment no longer needed by the University is sold for re-use, rather than simply trucked to a landfill.

**Figure 13: Percent of Solid Waste Diverted from Landfill**



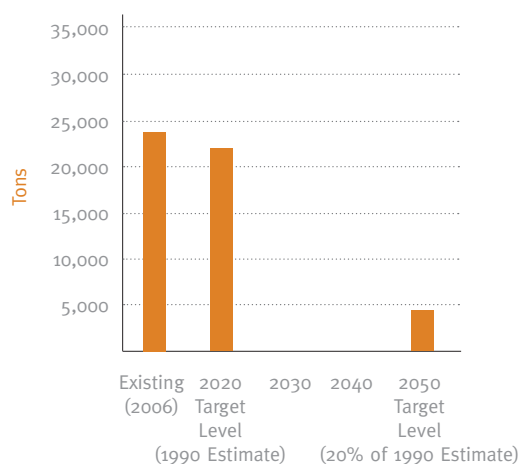
## GREENHOUSE GAS EMISSIONS

*Responding to the challenge of climate change is now adopted public policy in California. The Global Warming Solutions Act (AB 32) sets a statewide target of reducing Greenhouse Gas (GHG) emissions to 1990 levels by 2020.*

The CSU is charged with meeting that goal as a system and has established baselines and targets, accordingly. However, analyzing data supplied by the individual campuses using a consistent methodology has proved difficult given their many idiosyncrasies. Furthermore, the CSU does not account for emissions associated with the transportation sector, although, for example, Cal Poly estimates that automobile commuting and business-related air travel contribute about 40 percent of this campus's GHG total. An updated report from the CSU Chancellor's Office is expected in 2010.

No sustainability topic better illustrates the problem of boundaries than GHG and climate change. Consider the construction of Poly Canyon Village. If the campus is fixed as the appropriate boundary and the GHG target is set from estimates based on 1990 campus electricity and natural gas consumption, the addition of on-campus housing results in significantly more GHG emissions and appears to be a problem. However, if one draws the boundaries more widely, then PCV appears to be part of the solution to the problem: a "smart growth," high-density, mixed-use housing complex, that reduces students' daily commute to walking distance and with highly energy-efficient (LEED Gold) buildings. And certainly, global climate change warrants the widest boundaries when analyzing an environmental problem. Thus underlies at least part of the difficulty a 23-campus statewide university system has in quantifying and monitoring progress on this parameter.

Figure 14: Estimated GHG Emissions (Natural Gas and Purchased Power)



## LAND USE AND DEVELOPMENT

*Poly Canyon Village was contracted to meet minimum requirements for LEED certification. The project greatly exceeded the minimum, earning the rare LEED Gold level.*

This large complex not only includes student apartments, but also retail stores, restaurants, laundry and dry-cleaning services, recreation facilities, study areas and meeting rooms, and parking for residents' cars and bicycles. The high density project houses 2,640 students on 30 acres, and incorporates many principles of "smart growth." The project includes a co-generation plant for water heating; high-efficient energy lighting and appliances; window shading and orientations to reduce lighting, cooling and heating needs; low-flow water fixtures; and water-conserving landscaping.

Cal Poly has also embarked on a long-term program of retrofitting and re-commissioning existing buildings to meet LEED standards. The first such building, Faculty Offices East (Building 25), exceeded minimum certification requirements, earning the Silver level. This is the first on-campus LEED EB building in the CSU. Facility Services plans on LEED certifying at least one existing building every three years.

With the PCV complex and Building 25 earning LEED Gold and Silver, respectively, more than 25 percent of the University's total building square footage is LEED certified.

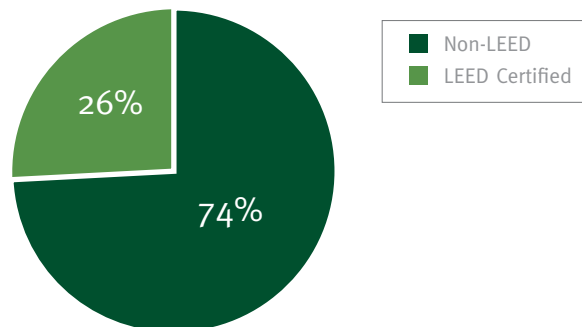
Before the PCV project, several old facilities, long in need of upgrade, were located on both sides of Brizzolara Creek in that vicinity. In conjunction with PCV, Cal Poly relocated and modernized the Beef Evaluation Center and Animal Nutrition Center; will shortly build a new Meats Processing Center; removed restrooms on septic systems, parking lots and several small storage buildings; and replaced a bridge and culvert that had impeded the passage of Southern Steelhead, a threatened species. The creekside areas, that only recently were paved parking lots and buildings, are now preserved as open space; native species have been restored on the northern bank; and fish habitat in the creek and underneath the bridges connecting PCV to the campus core has been enhanced.

#### Campus Master Plan.

*Cal Poly's Master Plan calls for an environmentally responsible campus and a high regard for land stewardship, resource efficiency, energy conservation and preservation of bio-diversity. Much more than a map, the Master Plan incorporates several guiding principles that directly address sustainability, such as:*

- Protect environmentally sensitive areas, including prime farmland
- Preserve and enhance environmental resources and wildlife habitats
- Promote sustainability in design, including energy and water conservation
- Reduce vehicle trips and promote alternative transportation
- Develop more on-campus housing with related services to reduce automobile commuting

Figure 15: Cal Poly Gross Square Footage of Building







**Walters Creek Restoration.** Working with funding partners such as the Department of Fish and Game and the Morro Bay National Estuary Program, CAFES is restoring the riparian habitat of Walters Creek in the Chorro Valley. The creek had been used as the “control” during a 10-year experiment to test various grazing Best Management Practices (BMPs). With the experiment over, the BMPs are being applied to this creek with considerable success.

## OPERATIONS SUSTAINABILITY PLAN

*Cal Poly's Administration and Finance Division articulated its plan for sustainability in 2008, which is summarized here. The plan includes principles, specific targets and actions (with implementation dates) for meeting those targets.*

Cal Poly endorses the World Commission on Environment and Development definition of sustainability as: "The concept of meeting the needs of the present without compromising the ability of future generations to meet their needs."

### GUIDING PRINCIPLES

Cal Poly operations are committed to the continued improvement in the sustainability of the physical campus. Our guiding principles include the following:

- To be careful stewards of the campus resources.
- To be leaders in sustainable practices.
- To contribute to sustainability as an integral aspect of the Cal Poly learning environment by making such practices visible and accessible.

### TARGETS

**In addition to the principles, operations have established the following more specific targets:**

Reduce campus GHG emissions annually between 2008 and 2020 by the amount necessary to achieve 1990 levels by 2020.	<i>Pending CSU Methodology</i>	<i>p.23</i>
Reduce energy use by an average of 15 percent per square foot of campus space by 2010 (relative to 2005 levels).	<i>Pending 2010</i>	<i>p.12</i>
Increase purchase (or production) of electricity from renewable sources by 3 percent per year with a goal of purchasing (or generating) 20 percent from renewable sources by 2010.	<i>Achieved 3 percent reduction</i>	<i>p.14</i>
Construct all major capital building renovation projects to LEED certification or equivalent.	<i>Achieved</i>	<i>p.24</i>
Convert one existing building on campus to achieve LEED EB status or equivalent every three years.	<i>Achieved</i>	<i>p.24</i>
Have at least 25 percent of the square feet of the conditioned space on campus LEED certified or equivalent by 2010.	<i>Achieved</i>	<i>p.24</i>
Continue to keep annual commuter parking permits to levels at least 25 percent below that of 2001.	<i>Achieved</i>	<i>p.16</i>
Divert at least 50 percent of the solid waste stream from landfills through recycling or re-use each year.	<i>Achieved</i>	<i>p.22</i>
Meet all adopted water quality standards for wastewater effluent, creeks and groundwater.	<i>Not yet achieved</i>	<i>p.19-21</i>

## OPERATIONS SUSTAINABILITY PLAN STATUS AS OF END OF 2009

<b>Leadership</b>	Create Sustainability Manager position	■
<b>Energy</b>	Complete energy/water audit	■
	Contract to perform annual projects	■
	Assess feasibility of new solar and wind generation projects	■
<b>GHG</b>	Establish baseline	■
	Monitor per CSU guidelines	■
<b>New Construction</b>	Require energy goal setting with schematic design	■
<b>Building Ops</b>	LEED EB for Building 25	■
<b>Landscaping</b>	Install centralized controls with weather station	■
	Create Landscape Mgmt Plan for undeveloped, non-ag land	■
<b>Water</b>	Continue installing water efficient fixtures	■
	Meet with City regarding using recycled water for campus	■
	Continue to monitor water quality	■
	Investigate and ameliorate pollution standard exceedances	■
	Assess feasibility of non-treated water for ITC	■
<b>Outreach</b>	Support Green Campus Intern program	■
	Employ student assistants	■
	Provide open access to plans, provide presentations	■
	Support senior projects	■
	Host UC/CSU/CCC Sustainability Conference	■
	Institute "sustainability mentors" program	■
<b>Fleet</b>	Continue transition to alternative fuels	■
	Right size fleet including vehicle sharing technology	■
<b>Corporation</b>	Continue to convert vegetable oil to bio-diesel fuel	■
	Compost 1,500 lbs/day of food waste	■
	Eliminate polystyrene containers	■
<b>Purchasing</b>	Require Energy Star	■
<b>Housing</b>	Provide on-campus housing	■
	Design housing with support facilities	■
	Provide information to residents about conservation	■
<b>Parking</b>	Continue to subsidize transit	■
	Continue OPTIONS program	■
	Install bike path on California Blvd	■
	Install pedestrian path from PCV to campus core	■
	Continue to convert campus core to pedestrian environment	■
	Add at least 60 bike racks and 35 lockers	■
	Add at least one additional van to vanpool program	■
	Continue to provide discount fares to students on Amtrak	■
	Research feasibility of providing charging stations for electric vehicles	■

■ *Implemented & completed*    
 ■ *Implemented & ongoing*    
 ■ *Not yet implemented*

Warren Baker  
*President*

Larry Kelley  
*VP of Administration & Finance*

Mark Hunter  
*Director, Facility Services*

Dennis Elliot  
*Sustainability Manager*

**Other Contributors**

Kim Busby  
Cindy Campbell  
Bob Kitamura  
Mark Menard  
Cheryl Mollan  
Joel Neel  
Doug Overman  
Susan Rains  
Kevin Shaw

Mike Multari, *Text*  
Pamela Eidelman, *Project Coordination*

**Vice President's Sustainability  
Advisory Committee  
2008-2009**

R. Thomas Jones, *Chair*  
Jake Alvarez  
Shawn Cooper  
Alan Cushman  
Hunter Francis  
Adrienne Greve  
Mark Hunter  
Bob Kitamura  
John Phillips  
Ron Skamfer  
Linda Vanasupa  
James Vilkitas

**2009-2010**

R. Thomas Jones, *Chair*  
Scott Bloom  
Dwayne Brummett  
Max Chellemi  
Hunter Francis  
Adrienne Greve  
Tyler Hartrich  
Mark Hunter  
Rafael Jimenez-Flores  
Bob Kitamura  
Yukie Nishinaga  
Linda Vanasupa

Design by  
Barnett Cox & Associates

Photography by  
Chris Leschinsky

