

# CLIMATE ACTION PLAN

BY THE CAMPUS SUSTAINABILITY COMMITTEE

# 2013



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STROHM SUSTAINABILITY CONSULTING  
AND MIKE ZELLER, ECOMETRICS**



CALIFORNIA STATE UNIVERSITY  
**Monterey Bay**

# PRESIDENT OCHOA'S STATEMENT



I am pleased to offer my statement of support for the work that continues on and around the Cal State Monterey Bay campus to achieve our goals under the American College and University Presidents' Climate Commitment (ACUPCC).

We believe that it is our responsibility as a public institution to help mitigate climate change and to model the values of sustainability to our faculty, staff, students and to the communities we serve. This report recounts our achievements in this regard and articulates the guidelines that will be our roadmap for the future.

Our campus covers 1,377 acres on the site of the former Fort Ord. We are housed in 70 buildings, with 1.33 million square feet of space. Some of the buildings that we use were built as new campus structures; many are repurposed military facilities.

Located on the doorstep of the newly created Fort Ord National Monument, Cal State Monterey Bay is greatly enhanced by its natural setting. As such, we recognize our obligation to tread lightly on that land, to protect this region's beauty for future generations. Sustainability is an important part of our campus ethos.

This Climate Action Plan spells out many of the steps we have taken to turn that spirit into daily practice. Even as a campus with a unique history and an unmatched locale, Cal State Monterey Bay faces the same sort of challenges as public universities nationwide. We must be good stewards of the funds allocated to us while showing foresight as environmental stewards as well. We strongly believe that an emphasis on sustainable practices can help achieve both goals.

Fostering a spirit of sustainability encourages us to innovate, to seek new solutions. It helps imbue our students with a sense of possibility. And it drives home the point that everyday decisions matter, that sometimes even a series of small steps can have a profound impact.

In that spirit, we offer this Climate Action Plan, as a statement both of what we have accomplished so far and what we still must do to achieve our long-term goals.

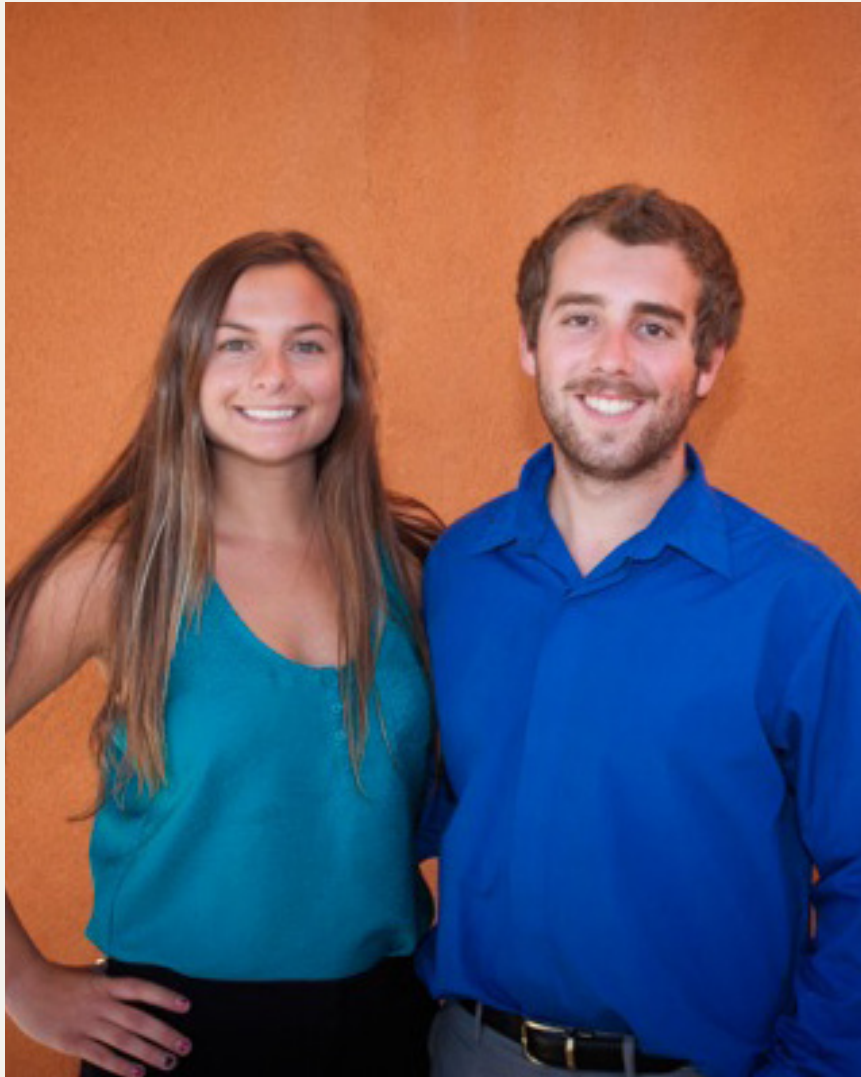
Sincerely,  
Eduardo M. Ochoa, Interim President  
California State University, Monterey Bay





# STUDENTS' STATEMENT

October 15th, 2012



On behalf of the Associated Students (AS) Environmental Affairs Committee of California State University, Monterey Bay (CSUMB), we give our endorsement for the University's Climate Action Plan (CAP). The CAP is an efficient and effective plan for the University in regards to sustainability and meeting the 2030 goal to be carbon neutral within the President's Climate Commitment.

Colleen Courtney, the AS Environmental Senator, serves as the chair for the Environmental Affairs Committee. The Environmental Affairs Committee is a committee within AS that seeks to collaborate with the campus community and region to uphold the University's Vision Statement by addressing long-term sustainability focusing on economy, ecology, and social justice. The committee seeks to uphold the University's commitment to its Vision Statement in "responding to historical and changing conditions, experimenting with strategies which increase access, improve quality and lower costs through education in a distinctive CSU environment," by raising awareness and promoting environmental sustainability throughout the CSUMB campus and surrounding community.

The Environmental Affairs Committee will support the CAP as the representation and voice for the student body on sustainability. The Committee will continue actions to increase programs, services, and advocacy for a more sustainable campus, as well as shift the behavior and culture of the student body towards becoming sustainability focused.

Sincerely,  
Colleen Courtney, AS Environmental Senator  
Duane Lindsay, AS President

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# INTRODUCTION

## WHAT IS A CLIMATE ACTION PLAN?

This Climate Action (CAP) presents California State University Monterey Bay's (CSUMB's) strategy for reducing green house gas emissions associated with our operations and includes a baseline study which measures where we are in this effort. This report tracks our carbon footprint in Metric Tons of Carbon Dioxide Equivalent, or MTCDE, the most accepted unit of impact. It also includes some information about the triple bottom line, people, planet and prosperity, even though emissions associated with these dimensions of sustainability are not fully quantifiable at this time.

## WHY IS THIS REPORT IMPORTANT?

Climate change is a serious threat now and into the future. CSUMB has a unique challenge to reduce its current emissions while more than doubling its infrastructure and the number of students it serves, as well as reusing and removing derelict Army buildings. We believe that appropriately identified and implemented sustainability practices can save money, improve quality of life, help minimize risk, attract and retain top employees, stimulate innovation, and reduce greenhouse gas emissions. This CAP provides CSUMB the opportunity to implement and demonstrate carbon neutrality to our students and the surrounding community. It can reinforce classroom lessons on sustainability and provide students real experience implementing the measures identified herein.

## OUR ACUPCC COMMITMENT

The CSUMB campus, along with 660 other institutions of higher education, is a signatory of the American College and University Presidents' Climate Commitment (ACUPCC). This commitment requires that the campus choose a date to achieve carbon neutrality. This Climate Action Plan provides a roadmap to achieve this goal by 2030, and also takes full advantage of other dimensions of sustainability that are less measureable than greenhouse gas emissions. Through this process we are learning to collect new kinds of useful data, to plan and implement new innovative procedures, and to think about new dimensions of our operations.



## EXECUTIVE SUMMARY

# INTRODUCTION

## PAST EFFORTS

CSUMB began efforts to account for our greenhouse emissions using an early campus carbon calculator called Clean Air Cool Planet in approximately 2004. That initial baseline is reflected here in our 2005/2006 numbers for electricity, natural gas, and water use. Transportation and other data were not adequately captured then.

Prior to the 2007 ACUPCC, campus staff and students ran an informal waste management group that focused on recycling and waste reduction. This was spurred by the requirement in the campus waste hauler contract that paid a student recycling intern. With ACUPCC participation, the group grew into the President's Climate Commitment Committee, and eventually the Campus Sustainability Committee, that was tasked with developing a Climate Action Plan for the campus that would meet ACUPCC requirements.

In 2011 CSUMB completed the Sustainability Tracking, Assessment and Rating System (STARS) report for the Association for the Advancement of Sustainability in Higher Education (AASHE). This self-reporting sustainability performance framework for colleges and universities allows institutions to measure, track and share sustainability practices and performance. At the time of completion, no campus had earned the highest Platinum rating, however CSUMB was one of 41, and the only CSU, to earn the next highest Gold rating. CSUMB scored in the low end of the Gold rating, which is commendable relative to other universities, but which leaves significant room for improvement as demonstrated in the recommendations in this CAP. As noted in our STARS report "the CAP will be a living document that is continuously updated as new information, partnerships, resources and technologies evolve."

## REPORT DEVELOPMENT

For the purposes of this report, the Campus Sustainability Committee invited additional participants from across campus to collaboratively develop an updated and expanded sustainability baseline (Baseline Year: FY July 1, 2010 - June 30, 2011). A baseline is a starting point, or snapshot in time, from which one can measure progress. Working with a local consultant, approximately 40 members operated in a democratic and open-document

format. They formed six topic-specific task forces and over a more than six month period established baseline metrics, collected data and produced the Action Steps recommended in this document.

## SUPPORTING CONTEXT

This Action Plan supports the intent and specific energy goals of the State of California, as expressed by former Governor Schwarzenegger's Executive Order S-12-04 requesting the CSU's active participation in state-wide energy conservation, and AB 32, California's landmark legislation to address global warming. The California State University Chancellor's Office issued Executive Order No. 987 (2006), which set a statewide goal of 50 MegaWatts (MW) of on-campus self-generated energy, and to exceed Title 24 building energy efficiency standards by 15%. A proposed Sustainability Policy drafted in January 2012 by the Committee on Campus Planning, Buildings, and Grounds reaffirms the sustainability direction for the 23 CSU campuses. CSUMB's Campus Master Plan and Environmental Impact Report (EIR) 2007 identify several policies, practices, and mitigations, for which this Action Plan is relevant and consistent, among them:

- Planning Principles P 3: Respect and Strengthen Ecological Resources
- Planning Principles P 9: Support Sustainable Systems
- Campus Framework CF 1: Integrate Habitats and Campus Development
- Campus Framework Policy CF 4: Create a Transportation System
- Campus Development Policy CD 2: Utilize Sustainable Practices
- Utilities & Infrastructure Policy UI 2.4: Design to Maximize Energy Efficiency

As an approval requirement for the buildout of the 2007 Campus Master Plan, CSUMB must implement measures described in its EIR's Mitigation, Monitoring and Reporting Program (MMRP). A table in the appendix summarizes several measures which support Action Steps described in this Climate Action Plan.

## GOING FORWARD

We believe that successful implementation of this Action Plan will strengthen, enrich, and enliven CSUMB, its students, faculty, staff, and community. Climate action planning and projects make good business sense, and prove even more valuable over the long time horizons. In alignment with the ACUPCC guidelines, we will evaluate our progress every three years, comparing these data with data we will gather in 2013/2014 for a progress report in the summer of 2014. These recommended actions, while not easy, are essential in order to create the future we all desire.

# INTRODUCTION

## INSTITUTIONALIZING SUSTAINABILITY

Most CSUMB sustainability efforts have been spearheaded by a select few dedicated students, faculty, and Facilities and Planning staff. The majority of this work falls beyond employees' job descriptions, and is performed only when they are able to allocate extra time. These efforts have led to major improvements in energy and water efficiency, transportation options, waste reduction, and new sustainability events and curriculum. However, the ability to make large-scale change and implement the Action Steps recommended in this report will require additional commitment from administrators and management, dedicated staff time, and funding.

Below are several ways to integrate sustainability into the campus operations using existing or minimal resources:

1. Update Job Descriptions – Add sustainability language into all job descriptions. Make it the responsibility of each employee and manager to identify tasks and goals which save the university resources and reduce emissions.
2. Employ Sustainability Interns – Use student interns to implement the CAP Action Steps under the supervision of staff with sustainability as a core job duty.
3. Use Student Research – Publicize CAP projects for students or classes to complete or implement.
4. Reorganize Existing Staff Jobs – Reorganize and reprioritize existing key sustainability champions' job duties to free up time to implement and track CAP, ACUPCC and sustainability progress. Fill in other job duties with interns or other staff.

The next level of institutionalizing sustainability is the establishment of a Sustainability Office. Almost all Task Forces came to this recommendation during the CAP development process as they realized their own organizational limitations to coordinate, monitor and keep track of their own progress. Over 400 colleges and universities across the United States support such offices, which most often pay for themselves in cost savings, waste avoidance, time management, and even direct revenue generation. With additional resources the campus could establish and realize many additional benefits provided by this office.

Below is a list of duties and services that a Sustainability Office could provide:

- Collect and systemize ongoing relevant sustainability data
- Conduct regular audits of water, energy, janitorial services, food, waste, and procurement
- Report such data regularly to all required entities and the public
- Help prioritize and co-manage sustainability improvement projects
- Evaluate completed project performance for lessons learned
- Guide student behavior change campaigns
- Drive and support sustainability-across-the-curriculum efforts
- Serve as a focal point for relevant student clubs
- Communicate campus sustainability programs internally & externally
- Partner with key external sustainability organizations
- Review contractor performance for sustainability dimensions
- Work with the Campus Sustainability Committee on planning
- Document savings and generate revenue to enrich the program capacity
- Keep up professionally with sustainability technologies & practices

## FUTURE ROLE OF THE CAMPUS SUSTAINABILITY COMMITTEE

Currently the Committee acts as a group of dedicated volunteers with limited time and resources that make important but slow progress. Participation is voluntary and sporadic outside of a limited core group.

Another option is for the Committee to serve as a governing board with an established mandate, by-laws, election terms and procedures to advise the campus and/or sustainability staff/office. In this capacity it would help set policies and priorities, plan future directions and evaluate progress made. The Committee and a Sustainability staff/office could manage a budget allocation within parameters set by the University. Participation could be outlined as a requirement for specific jobs with relevant ties to sustainability. It could also require commitment to CAP project implementation, regular leadership rotation, and broad participation from across campus.

This committee offers the potential to create new strategies and more fully examine existing and future resources and operations through the lens of the triple bottom line (people, planet, and prosperity). Looking at the campus holistically instead of departmentally has the potential to create more long-term benefits for all.



# OUR STARTING POINT BASELINE & KEY RATIO NUMBERS

**This updated and expanded baseline** covers fiscal year 2010-2011, and includes improved transportation data, and many additional relevant items. CSUMB is fortunate to have dedicated staff who not only understand facilities and energy efficiency, but also constructed a very accurate real time monitoring system for our electricity, natural gas, and tap water use. The original Clean Air Cool Planet baseline is incorporated in this current assessment in the 2005/2006 numbers.

The **boundaries** of this baseline report are the Main Campus boundaries, plus the student occupied East Campus Housing (Fredrick I & II). CSUMB owns and pays for the utilities in this student housing. Non-student occupied East Campus Housing owned by the University (Schoonover), plus 66 for-sale homes, were excluded because the tenants and owners pay for their own utilities, thus the data are difficult to collect and the behavior of the users difficult to control. Nevertheless, this is an area for future greenhouse gas reduction efforts, and the University is willing to make Schoonover housing as energy efficient as possible as soon as financially possible.



The **scope** of this 2010-2011 baseline reflects our understanding of the three sustainability dimensions: People, Planet, and Prosperity. It includes purchased electricity, solar electricity generated on campus, natural gas, diesel, gasoline, electric vehicles, commuter miles, air miles, tap water, bottled water, waste generation & recycling, procurement, food, social metrics, prosperity, and communications.

**Not measured or included** in this baseline are some important aspects of our operations which we were unable to quantify at this time. These are primarily our service contractors for construction and deconstruction, landscaping, janitorial cleaning, and deliveries. Data are also limited on our specific university partnerships. We did not gather data on refrigerants, methane, carbon sequestration potential or fugitive hydrofluorocarbons. Other data gathering challenges emerged throughout this project, and we have confidence that our accuracy will improve as we gain practice and develop data collection systems, especially for transportation and waste.

**Conversion to MTCDE** (metric tons of carbon dioxide equivalent) is the most common carbon footprint accounting unit. It was calculated for all our energy use, air miles flown on university business, waste, and recycling. A newly available conversion of Central California water associated emissions to carbon footprint is used to convert tap water use to MTCDE. A dose of healthy skepticism is in order here, we believe, as the conversion methodologies are often more detailed and complex than the quality of our data warrant. Our main data goal at this time is to improve our level of understanding about our waste generation and recycling, and to be sure we are accurately capturing all information on campus-based transportation, including commuter patterns.

**Key numbers** which will reflect our progress in a nutshell are three ratios: MTCDE (carbon footprint) per 1000 square feet of occupied space; MTCDE per full time equivalent campus people (students, faculty, staff, and administrators) and pounds of waste generated (waste-to-landfill plus waste recycled) per person. Ratios allow us to track our relative efficiency per person and per square foot of space, as we grow the campus. We do expect our absolute total impact numbers will increase with future development. As we update the data every three years, progress on the CAP will be expressed by these ratios. In addition, we are monitoring many metrics beyond greenhouse gases for a full picture of our sustainability performance.

# BASELINE SUMMARY CHART

## CSUMB 2010/2011 SUSTAINABILITY AUDIT SUMMARY

Metrics	2005 / 2006 Totals	2010 / 2011 Totals	Main Campus	East Campus	GHG Emissions	Expenses
<b>Diesel (Gallons)</b>	--	<b>466</b>	466		<b>5</b>	<b>-\$1,704</b>
% of Baseline:	0.0%	0.0%				<i>estimated</i>
<b>Gasoline (Gallons)</b>	--	<b>19,878</b>	19,878		<b>180</b>	<b>-\$97,966</b>
% of Baseline:	0.0%	0.0%				
<b>Natural Gas (Therms)</b>	<b>699,249</b>	<b>636,076</b>	461,743	174,333	<b>3,391</b>	<b>-\$469,035</b>
% of Baseline:	100.0%	91.0%				
<b>Electricity (Kilowatt-Hours)</b>	<b>14,717,151</b>	<b>11,189,874</b>	9,071,590	2,118,284	<b>2,259</b>	<b>-\$1,706,789</b>
% of Baseline:	100.0%	76.0%				
<b>Solar Photovoltaic (Kilowatt-Hours)</b>	--	<b>1,757,925</b>	1,757,925		<b>(355)</b>	<b>-\$215,484</b>
% of Baseline:	0.0%	0.0%			<i>emissions avoided</i>	
<b>Air Miles (Miles)</b>	--	<b>685,148</b>	685,148		<b>2,073</b>	<b>-\$73,272</b>
% of Baseline:	0.0%	0.0%				
<b>Waste-to-Landfill (Tons)</b>	<b>2,496</b>	<b>2,094</b>	1,448	646	<b>2,459</b>	<b>-\$187,950</b>
% of Baseline:	100.0%	83.9%				
<b>Diversion &amp; Recycling (Tons)</b>	<b>794</b>	<b>1,569</b>	923	646	<b>(1,843)</b>	<b>-\$83,298</b>
% of Baseline:	100.0%	197.6%			<i>emissions avoided</i>	
<b>Water (Hundred Cubic Feet)</b>	<b>130,244</b>	<b>110,519</b>	66,424	44,095	<b>80</b>	<b>-\$194,555</b>
% of Baseline:	100.0%	84.9%				
<b>Bottled Water (Gallons)</b>	<b>51,090</b>	<b>55,464</b>	55,464		<b>--</b>	<b>-\$26,622</b>
% of Baseline:	100.0%	108.6%				
<b>GHG Emissions (Metric Tons CO2e)</b>	<b>9,723</b>	<b>10,446</b>				
% of Baseline:	100.0%	107.4%				
<b>Expenses (US Dollars)</b>	<b>-\$2,407,632</b>	<b>-\$2,896,055</b>				
% of Baseline:	100.0%	120.3%				

"--" denotes no data available

### Converting Electricity to MTCDE

CSUMB's electricity conversion factors depend on the energy mix (natural gas, nuclear, renewables, hydroelectric, fossil fuel) supplied by Pacific Gas & Electric (PG&E), the campus' local electricity provider. Over time, it is expected that PG&E's energy mix and associated carbon dioxide emissions will change and with them the conversion factor used to calculate MTCDE. Currently PG&E uses an electricity to MTCDE conversion of 4950 kWh/MTCDE.

The CSU system uses a statewide average electricity mix and its associated emissions to convert all 23 campuses' electricity use to MTCDE for purposes of reporting progress towards compliance with AB-32, California's climate change law. Using an average energy mix does not take into account that different regions receive electricity from different sources, and thus have different emissions. Currently the CSU system uses an electricity to MTCDE conversion rate of 3031 kWh/MTCDE. This factor is also expected to change over time as the statewide energy mix changes.

CSUMB feels that using its local electricity mix and associated emissions conversion factor is most accurate for the purposes of this CAP but will continue to report energy consumption to the CSU Chancellors' Office where a statewide conversion factor may continue to be applied. For this reason differing MTCDE numbers may be published for CSUMB.

# BASELINE SUMMARY CHART

## CSUMB 2010/2011 SUSTAINABILITY AUDIT SUMMARY

Key Ratios	
GHG Emissions per Full-Time Equivalent	2.0 <i>MTCDE / FTE students, staff, &amp; faculty</i>
GHG Emissions per Occupied Square Footage	5.8 <i>MTCDE / 1,000 Square Feet</i>
Waste Generated per Full-Time Equivalent (Total waste generated = waste-to-landfill PLUS waste recycled and diverted)	1,369 <i>Pounds / FTE students, staff, &amp; faculty</i>
People Metrics	
New Students Enrolled	843
Total Courses Offered	476
Student Service Learning Hours	65,120
First Generation Attending College %	47%

Food	
Pre-Consumer Waste (pounds)	8,200
Post-Consumer Waste (pounds)	42,369
Total Meals Served	273,346
Pounds of Waste per Meal Served	0.185
Commuter Transportation Mode Choice	
Bike	5%
Transit	10%
Drive Alone	70%
Carpool	15%
Green Procurement	
Total Spend	\$230,836
Recycled Content Spend	\$126,648
Recycled Content %	55%

# OUR FUTURE DIRECTIONS - ACTION STEPS DISCUSSION



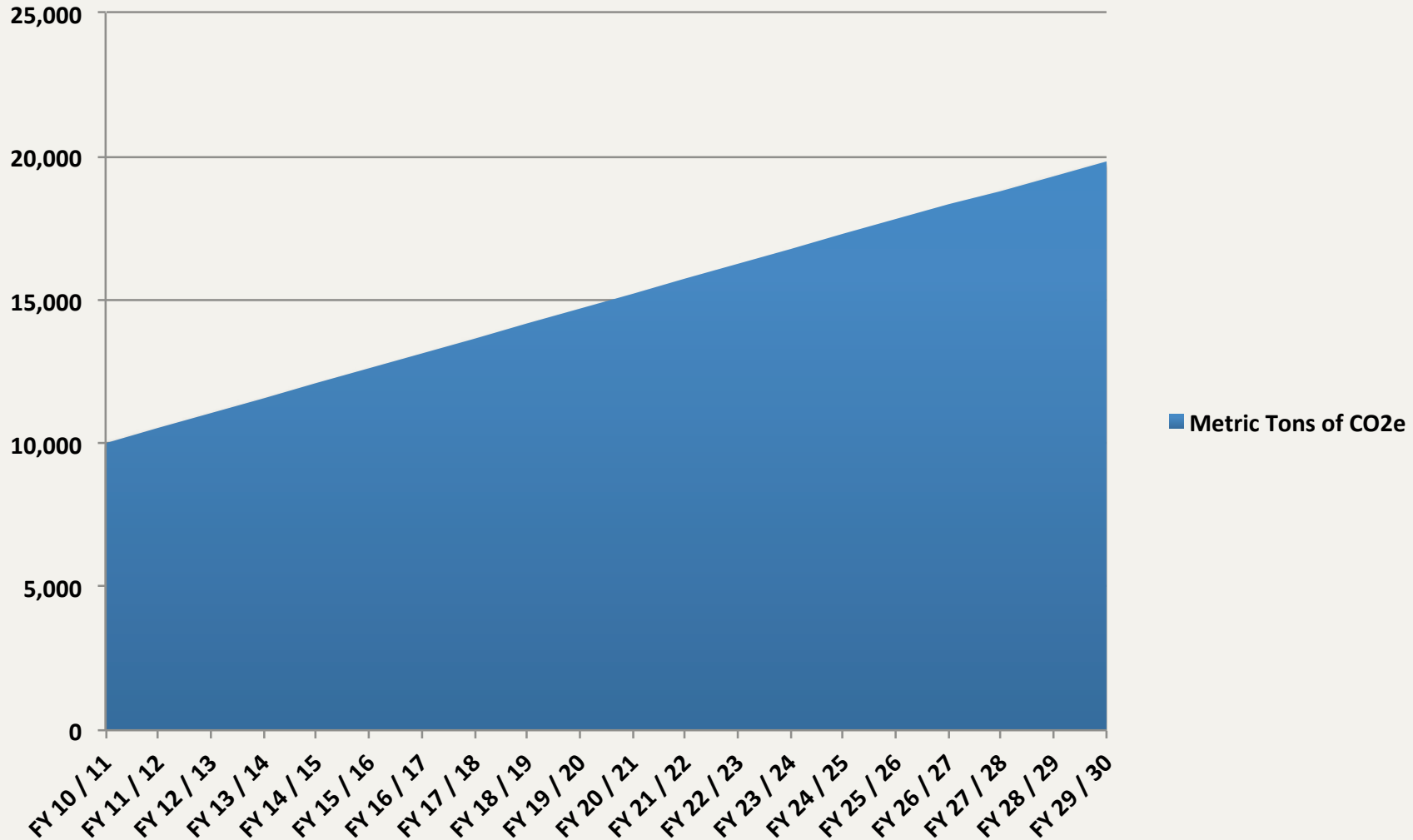
On the following pages we present our summary list of recommended Action Steps that will enable us to achieve our ACUPPC Climate Neutral or Zero Greenhouse Gas Emissions goal by 2030. These Steps are grouped in priority order, led by those projects we deem most cost effective and best at reducing MTCDE. Arranged in 3-year increments from our baseline year, short-term recommendations are colored blue, mid-term yellow, and long-term orange. Many of these actions, however, can be undertaken simultaneously. Some more directly affect CSUMB's carbon footprint than others, but all these actions bring CSUMB closer to operating as a stronger, more sustainable system. Until analyzed on a project by project basis, the full potential for GHG reduction cannot be determined. We have put energy conservation first, renewable or innovative energy systems second, and the purchase of local offsets third. We also include recommendations for improving the social and economic dimensions of sustainability. All recommended Action Steps will be subject to administrative review and funding availability.

CSUMB's 2007 Campus Master Plan projects growth in student numbers from the 4,679 annual average FTEs in 2010/2011 to almost double that, 8,500 (FTEs) by 2025-2030 or so, with 1,900 faculty, staff, and administrative personnel, and 3,500 distance or non-traditional students. Assuming the average per capita MTCDE generation remains the same, a straight line projection predicts a level of approximately 20,000 MTCDE emissions by 2030. These can be brought down to climate neutrality by implementing the Action Steps recommended herein and by persistent and serious efforts that require culture change, investment, innovation, and follow-through. Structural changes, such as housing more students on campus, or shifting to electric vehicles, may reduce transportation emissions, but increase electricity, water use, and/or waste generation on campus.

CSUMB has a significant head start on many of these ideas. In the individual category pages of this report, this "already accomplished" progress is noted.

# OUR FUTURE DIRECTIONS

## GREENHOUSE GAS EMISSIONS PROJECTIONS - BUSINESS AS USUAL CASE



# EXECUTIVE SUMMARY

## ACTION STEPS

### CSUMB 2013 CLIMATE ACTION PLAN STEPS - SUMMARY LIST - PAGE 1 OF 5

<b>ENERGY: ELECTRICITY/NATURAL GAS</b>		<b>Est. Resources</b>	<b>Est. Impact</b>	<b>Leadership</b>
<b>ENG1.</b>	<b>Systematically review and address energy conservation</b> by taking all possible cost-effective technical actions for existing building and streetlight efficiencies.	Staff time, moderate investment	2-5% ghg reduction	Facilities
<b>ENG2.</b>	<b>Develop and implement an innovative Green Information Technology (Green IT) Plan.</b>	Staff time, small investment	2-5% ghg reduction	IT, Admin, Procurement
<b>ENG3.</b>	<b>Design and deploy a "Culture of Sustainability" behavior marketing campaign for all campus citizens to address energy, water, transport, food, etc.</b>	Staff time, small investment	2-5% ghg reduction	Strategic Marketing of UA, with Assoc. Students
<b>ENG4.</b>	<b>Require that all new or refurbished campus buildings be designed and built as USGBC LEED Silver</b> certified, preferably Gold or Platinum certification levels.	Staff time, additional initial cost of ~1-7%	Operational cost savings & ghg reduction over building lifetime	Construction, Planning, Fund-raising
<b>ENG5.</b>	<b>Purchase and install a modular co-generation plant</b> consisting of 2-3 250 kw each reciprocating engine-driven generators powered by natural gas, at the campus central power plant.	\$1.5 million PG&E rebate available to cover some costs	~700 MTCDE reduction/yr ~\$230,000 cost savings/yr	Facilities
<b>ENG6.</b>	<b>Build second 1MW Grid-tied Photovoltaic system</b> on campus through a second power purchase agreement.	Staff time, no cash out	~15%, or 350 MTCDE, ghg reduction	Facilities
<b>ENG7.</b>	<b>Research thermal energy storage systems</b> for at least three small stand-alone situations at distance from the central power plant.	Variable, depending on design	Measurable ghg reduction	Facilities
<b>ENG8.</b>	<b>Buy Green Power</b> if and when this option is again available in Central California at reasonable pricing.	1.5 cents/kWh -Comparable utility costs	significant ghg reduction	Procurement
<b>ENG9.</b>	<b>Install vertical axis wind machine</b> as a demonstration project at a key wind tunnel location near the main quad and meter its production.	Variable, depends on design	Minor <1% ghg reduction	Div. of Science & Env'l Policy, Asso. Students
<b>ENG10.</b>	<b>Attach a generator system to student workout equipment</b> as a demonstration project, and meter its production.	Variable, depends on design	Minor <1% ghg reduction	Associated Students
<b>ENG11.</b>	<b>Consider purchasing local carbon offsets</b> to bring the CSUMB carbon footprint to neutrality as necessary in 2030.	Moderate - high cost	Significant reduction	Procurement

EXECUTIVE SUMMARY  
**ACTION STEPS**

CSUMB 2013 CLIMATE ACTION PLAN STEPS - SUMMARY LIST - PAGE 2 OF 5

<b>WATER</b>		<b>Est. Resources</b>	<b>Est. Impact</b>	<b>Leadership</b>
<b>WAT1.</b>	<b>All new fixtures will be water-saving</b> whether for new or refurbished buildings, or replacement/repair.	Slight increase over traditional	Minor ghg impact – water savings medium	Facilities
<b>WAT2.</b>	<b>Review draft landscaping and irrigation plan</b> for sustainability.	Staff time	Minor ghg impact; water savings, chemical use reduce - medium	Campus Planning
<b>WAT3.</b>	<b>Review drinking water/bottled water systems on campus.</b>	Staff time	Minor ghg impact – fewer deliveries	Procurement
<b>WAT4.</b>	<b>Establish an outdoor water use policy</b> for car-washing, power-washing, etc., to avoid water waste.	Staff time/enforce time	Minor ghg impact – water savings	Administration
<b>WAT5.</b>	<b>Augment on-site water sources</b>	low – high cost depends on project	Recycled water is low-energy intensive	Construction
<b>TRANSPORTATION</b>		<b>Est. Resources</b>	<b>Est. Impact</b>	<b>Leadership</b>
<b>TRA1.</b>	<b>Systematize transport data collection</b> and accounting.	Staff time	Management improvement	Accounting
<b>TRA2.</b>	<b>Facilitate alternative "modes-to-work"</b> for both external & internal campus trips.	Modest investment above current levels	Minor ghg reduction – air pollution avoided	Transportation Planner
<b>TRA3.</b>	<b>Reduce the number of necessary trips to campus.</b>	Some no-cost actions – high cost on housing	Minor ghg reduction	Administration
<b>TRA4.</b>	<b>Manage the University Fleet for sustainability.</b>	Equivalent to traditional	Minor ghg reduction	Facilities
<b>TRA5.</b>	<b>Develop a University Travel Policy</b> consistent with the Chancellor's Office mandates and CSUMB operational and developmental needs.	Staff time – new equipment purchase	Significant ghg reductions from reduced air miles	Administration
<b>TRA6.</b>	<b>Develop a University Parking Policy</b> aimed at reducing single-occupancy car trips to campus and intra-campus.	Staff time	Minor ghg reduction	Planning & Development
<b>TRA7.</b>	<b>Develop a vehicle policy for service contractors.</b>	Staff time	Minor ghg reductions	Transportation Planner

EXECUTIVE SUMMARY  
**ACTION STEPS**

CSUMB 2013 CLIMATE ACTION PLAN STEPS - SUMMARY LIST - PAGE 3 OF 5

<b>WASTE</b>		<b>Est. Resources</b>	<b>Est. Impact</b>	<b>Leadership</b>
<b>WAS1.</b>	<i>Improve detailed time-and location-linked waste data.</i>	Staff time or student intern	Recycling significantly reduces ghg	Planning
<b>WAS2.</b>	<i>Analyze audits and adjust waste collection infrastructure accordingly.</i>	Staff time	Potential cost savings	Planning
<b>WAS3.</b>	<i>Develop a waste component for the "Culture of Sustainability" campaign.</i>	Marketing class project	Potential behavior modification	Strategic Marketing
<b>WAS4.</b>	<i>Improve "Move-Out" Day Waste Diversion.</i>	Staff & Student project	Cost savings	Associated Students
<b>WAS5.</b>	<i>Work with procurement to minimize waste at the source.</i>	Staff time, engage suppliers	Reduced waste & ghg generation	Planning

<b>PROCUREMENT</b>		<b>Est. Resources</b>	<b>Est. Impact</b>	<b>Leadership</b>
<b>PRO1.</b>	<i>Achieve and document full compliance with State recycled content rules.</i>	Small additional cost	Off-site ghg reduction	Procurement
<b>PRO2.</b>	<i>Verify that all electronic products purchased are at minimum Energy Star certified.</i>	Staff time	Potential ghg reduction	Procurement
<b>PRO3.</b>	<i>Ensure that all the procurement office operations possible are electronic, rather than paper.</i>	Some initial cost, then savings	Waste generation reduced	Procurement
<b>PRO4.</b>	<i>Explore innovative green product purchase options to meet existing needs.</i>	Potential cost increases	Could be significant	Procurement



EXECUTIVE SUMMARY  
**ACTION STEPS**

CSUMB 2013 CLIMATE ACTION PLAN STEPS - SUMMARY LIST - PAGE 4 OF 5

<b>FOOD</b>		<b>Est. Resources</b>	<b>Est. Impact</b>	<b>Leadership</b>
<b>FOO1.</b>	<i>Increase percentages of organic &amp;/or local food.</i>	Some cost	Reduced toxicity	Food Service
<b>FOO2.</b>	<i>Reduce both pre- &amp; post-consumer food waste.</i>	Cost savings	Minimal ghg impact	Food Service
<b>FOO3.</b>	<i>Expand composting to all food serving venues.</i>	Low cost	Waste Disposal Reduction	Food Service
<b>FOO4.</b>	<i>Ensure all "to-go" containers are eco-friendly.</i>	Some cost	Reduced landfill	Food Service
<b>FOO5.</b>	<i>Use Green Seal certified green cleaning products</i>	Net neutral	Reduced toxicity	Food Service
<b>FOO6.</b>	<i>Explore innovative outreach options and partnerships.</i>	Depends on project	Minor ghg impact	Food Service
<b>FOO7.</b>	<i>Consider more diversity of food and food vendor options on campus.</i>	Unknown	Reduced vehicle miles – minor ghg	Administration

<b>SOCIAL- PEOPLE</b>		<b>Est. Resources</b>	<b>Est. Impact</b>	<b>Leadership</b>
<b>PEO1.</b>	<i>Increase feelings of campus community and place.</i>	Low – med cost	priceless	Planning
<b>PEO2.</b>	<i>Increase community health, wellness and personal growth.</i>	Low – med cost	priceless	Health & Wellness Student Activities and Leadership Development
<b>PEO3.</b>	<i>Increase the strength of Associated Students, student government.</i>	Cost unknown	priceless	Associated Students

# EXECUTIVE SUMMARY

## ACTION STEPS

### CSUMB 2013 CLIMATE ACTION PLAN STEPS - SUMMARY LIST - PAGE 5 OF 5

<b>COMMUNICATIONS</b>		<b>Est Resources</b>	<b>Est Impact</b>	<b>Leadership</b>
<b>COM1.</b>	<b><i>Make full use of existing University communications resources</i></b> , including Google Drive, MyCSUMB groups, and the Charlotte content management system.	No additional	n/a	Campus Sustainability Committee
<b>COM2.</b>	<b><i>Form a campus-wide task force to develop a "Culture of Sustainability" marketing and outreach</i></b> plan for 2013-2015. Include incentives, information, & entertainment.	Low cost	Could be significant ghg reduction	Campus Sustainability Committee
<b>COM3.</b>	<b><i>Maintain the COAL service committee to perform selective research</i></b> into the feasibility of, and return on, proposed sustainability projects.	No additional	Support projects	Librarian/Faculty
<b>COM4.</b>	<b><i>Facilitate linkages between on-campus and off-campus sustainability activities or events</i></b> , and provide a clearinghouse for all sustainability activities.	No additional	indefinite ghg reduction	CSC admin

<b>PROSPERITY</b>		<b>Est. Resources</b>	<b>Est. Impact</b>	<b>Leadership</b>
<b>PROS1.</b>	<b><i>Develop a system of metrics for tracking the prosperity</i></b> of the University within the sustainability context. Incorporate both financial and non-financial quantitative measures.	Research project	Improved sustainability metrics	Business Professor(s)
<b>PROS2.</b>	<b><i>Expand CSUMB's current community and regional economic impact assessment methodology to include a wider definition of "prosperity."</i></b>	Staff time & expertise	No direct ghg impact	Public Relations
<b>PROS3.</b>	<b><i>Determine how sustainability efforts affect the University</i></b> by tracking costs avoided, risks mitigated, and indirect or difficult-to-quantify benefits.	Staff time	Identify financial benefit of sustainability	Planning

Blue: Phase 1 - Short-term 3 years: 2011/2012 2012/2013 2013/2014 (data year) **Report Due Sept. 2014**  
 Yellow: Phase 2 - Mid-term 3 years: 2014/2015 2015/2016 2016/2017 (data year) **Report Due Sept. 2017**  
 Orange: Phase 3 - Long-term 3 years: 2017/2018 2018/2019 2019/2020 (data year) **Report Due Sept. 2020**

## TASK FORCES - UTILITIES

# ELECTRICITY

The campus reduced its electricity use between 2005/2006 and 2010/2011 by about 12% to 12,947,800 kWh. This success was achieved even as occupied square footage and the numbers of people on campus increased. Another 12% of CSUMB's electricity use was converted to our new solar power source, thus avoiding a total of 24% of our earlier ghg emissions. A combination of efforts are responsible.

### ALREADY ACCOMPLISHED:

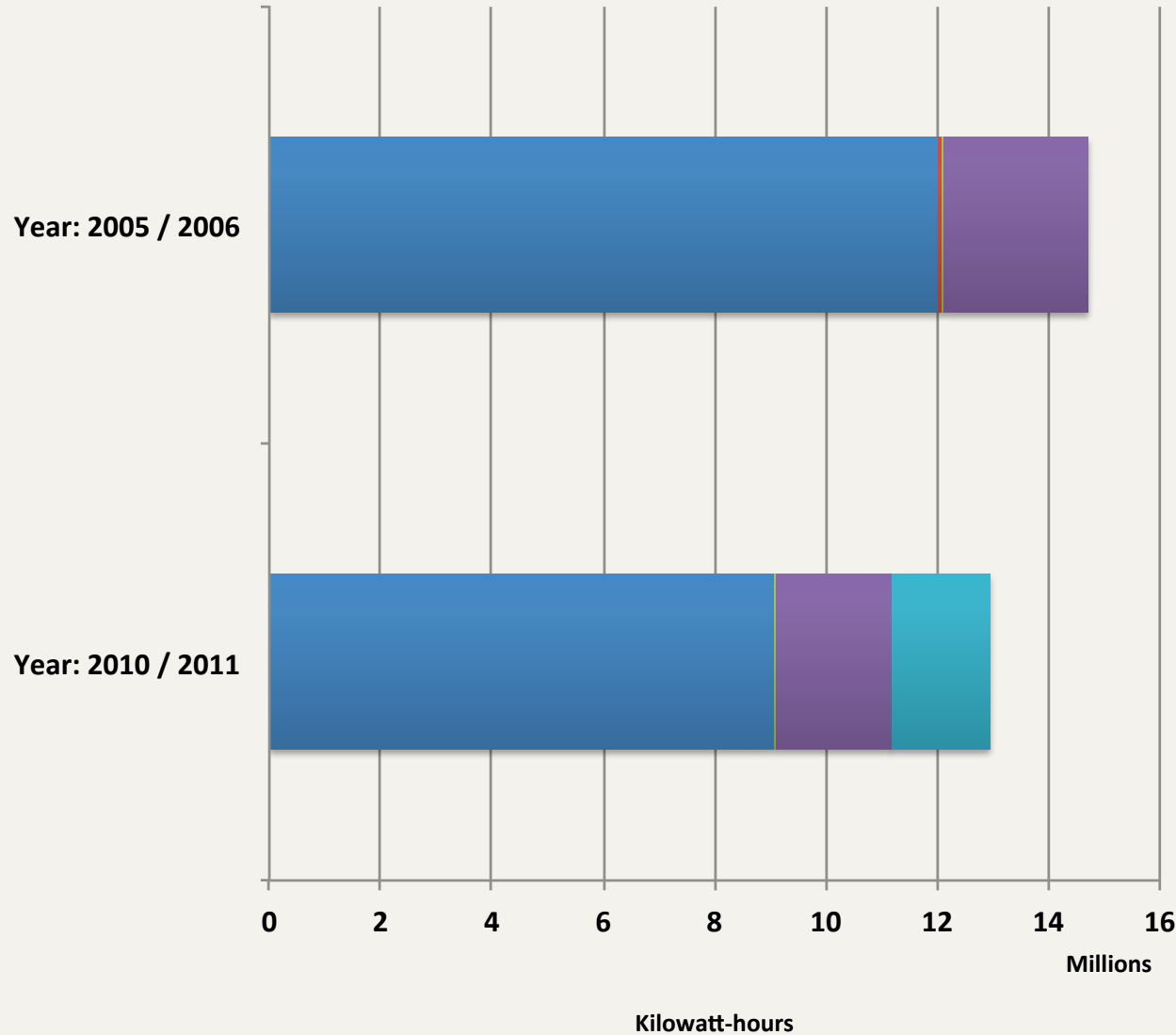
- Installed metering, telemetry, & analysis equipment.
- Monitored & controlled heating, ventilation, air conditioning (HVAC) systems from the Main Campus Energy Management System.
- Constructed a central power plant with 2 boilers to take the place of 22 separate boilers.
- Contracted for a 1 MW solar photovoltaic system built on campus (Sun Edison), and retained the renewable energy credits for the electricity generated.
- Recommissioned six buildings.
- Performed extensive lighting retrofits in buildings and streetlights.
- Installed occupancy light sensors in the Alumni & Visitors Center and Science Academic Center.
- Reduced the use of chillers in the new library building (saving approx. 200,000 kWh annually).
- Upgraded much HVAC, and set heating and cooling temperature points.
- Library and Dining Commons built to LEED Silver certification (USGBC).
- Green IT server virtualization & computer stock evaluation for energy efficiency.
- Installed energy & water efficient clothes washing machines, no hot water option.
- Student energy reduction competitions in the dormitories & turn-off stickers on light switches.

Although CSUMB has gathered much of the low-hanging fruit of easy electricity conservation options already, we feel confident that more is possible. As we work towards our goal of housing 60% of our students and 65% of our faculty on the Main and East Campus, commitment to electricity efficiency will be critical.

CSUMB provided the land area to construct our first 1 MW Solar Photovoltaic (PV) system, and agreed to purchase the power over the next 20 years. This Power Purchase Agreement (PPA) was brokered by the CSU Chancellor's Office and the State Department of General Services with Sun Edison, and required no cash outlay upfront from CSUMB. It produced 1,757,925 kWh in 2010/2011, and we received 1,757 Renewable Energy Credits (RECs) with our PV electricity purchase of approximately \$215,484 that year. CSUMB has the option to purchase the system when the Agreement ends.



TASK FORCES - UTILITIES  
**ELECTRICITY**



Electricity use is from incoming meters reported in bills from PG&E. Data for on-campus partners that have and pay their own meter are not included. East Campus Street Lights includes all of East Campus Housing street lights, not just student occupied

# TASK FORCES - UTILITIES

# ELECTRICITY

## RECOMMENDED ACTION STEPS for ELECTRICITY

SHORT-TERM (1st-3rd YRS: 2012/2013 - 2013/2014 - 2014/2015)



## CONSERVATION

**ENG1. Systematically review and address electricity conservation** by taking all possible cost-effective technical actions for existing building and streetlight efficiencies.

- Link academic schedule with HVAC schedule/controls.
- Consolidate building use in off seasons and after hours.
- Establish energy zones in all buildings as appropriate.
- Complete recommissioning evaluations for all buildings.
- Invest in preventative maintenance for all equipment.
- Complete campus-wide upgrade of all HVAC systems.
- Ensure all lighting throughout campus is the most efficient that is affordable, including continued use of LEDs. Consider whether lighting is actually necessary in all locations for safety and comfort.
- Ensure that occupancy sensors control lighting and HVAC systems wherever this is economically sensible and technically feasible.
- Engage students in an inventory of plug-load efficiency throughout campus for all electric equipment of any kind, including vending machines. Evaluate findings for further action steps.
- Develop a system to track electrical energy supplied to electric vehicles.
- Hire full or part-time assistant(s) to support the energy manager in completing and coordinating the tasks listed above.
- Consider installing meters as necessary to shift utility bill payments to occupants of Fredrick Park.

**ENG2. Develop and implement an innovative Green Information Technology (Green IT) Plan.**

- Collaborating with the student inventory mentioned above, update the computer equipment energy efficiency inventory as necessary, and verify all possible virtualization is in place. Use power strips at all stations to reduce phantom power losses.
- Review printer/copier equipment for energy, paper, & toner efficiency. Determine if shared use can reduce number of machines.
- Explore options to eliminate barriers to use of a centralized software-controlled PC power management system.
- Explore the best options for server type & placement: on-campus, off-campus, dispersed or centralized? Consider green power sources.
- Research other Green IT options used by businesses and/or other campuses, adopting those ideas that make sense for CSUMB.
- Develop telecommuting IT support protocol.



# TASK FORCES - UTILITIES

# ELECTRICITY

## RECOMMENDED ACTION STEPS for ELECTRICITY

**SHORT-TERM (1st-3rd YRS: 2012/2013 - 2013/2014 - 2014/2015)**

### CONSERVATION

#### **ENG3. Design and deploy a sustainable behavior marketing campaign for all campus citizens.**

- Work with business school marketing students to develop a clever, humorous conservation message for campus students, faculty, & staff.
- Work with the Associated Students on campaign implementation.
- Provide incentives and rewards for successful energy conservation.
- Include energy, waste, water, food, transportation, & purchases.
- Create a task force to plan more games and competitions to encourage green behavior.

#### **ENG4. Require that all new or refurbished campus buildings be designed and built as USGBC LEED Silver certified** at a minimum, preferably at Gold or Platinum certification levels.

- Seek external funding to cover the costs of USGBC (U.S. Green Building Council) certification, as the CSU Chancellor's Office will not cover certification costs.
- Ensure all new and refurbished designs include ample daylighting.

### RENEWABLE OR INNOVATIVE ENERGY SYSTEMS

**ENG5. Purchase and install a modular co-generation plant** consisting of 2-3 250 kw (each) reciprocating engine-driven generators powered by natural gas, at the campus central power plant. This option was identified as the most viable by the 2007 CSUMB Master Plan, which referred to co-gen plants on other CSU campuses.

#### **FULL COST ACCOUNTING SCENARIO #1: "Culture of Sustainability" Behavior Change Campaign**

**Description:** A clever, humorous marketing campaign to induce all CSUMB citizens to improve their personal sustainability behavior, such as turning off lights, not wasting food, taking alternative transportation, video-conferencing instead of travel when possible, and other measures.

**Purpose:** To reduce personal use of electricity, natural gas, gasoline, air travel, and water on campus; to generate less waste, and choose environmentally preferable products while on campus.

**Scale and Scope:** Campus-wide, aimed at students, staff, faculty, administrators, and campus contractors, to include energy, water, waste, products, and transportation.

**Timing:** ASAP, in coordination with school semester coursework.

**Key Participants:** COAL (Communications, Outreach, Analysis, and Liaison) Task Force of the Campus Sustainability Committee, Planning Staff, Associated Students, and a Marketing class at the business school.

	Estimated Resource Costs	Estimated Benefits
<b>Financial</b>	~\$20,000: marketing materials, prizes & incentives, staff time (80 hrs); faculty time (80 hrs); student time (300 hours)	~\$145,000 expenses avoided annually <sup>1</sup>
<b>Environmental</b>	Minimal paper use Energy for computer use	~5% ghg emissions reduction (> 500 MTCDE) <sup>2</sup> • improved air quality • reduced raw material use • water conservation
<b>Social</b>	Risk of backlash if message is too heavy-handed Free-riders (those who benefit, but don't participate)	• Community-building • General student engagement/education • Course project topic

#### **Assumptions:**

- Most communication will be electronic and social media.
- This will be a strategically planned, professional-level campaign.
- Some student interns will be paid to implement the campaign.
- Campaign may need to be repeated or further institutionalized.

Full Cost Accounting is an essential methodology to be able to consider the wide range of costs and benefits associated with actions taken.

<sup>1</sup> Summary CAP 2010/2011:

Total expenditures on utilities & transport=\$2,896,055 x 5% savings = \$145,000.

<sup>2</sup> Markowitz, Ezra M. and Bob Doppelt (2009). *Reducing Greenhouse Gas Emissions Through Behavioral Change: An Assessment of Past Research on Energy Use, Transportation and Water Consumption*. Climate Leadership Initiative, Institute for a Sustainable Environment, Eugene, OR 97403.



**FULL COST  
FULL COST ACCOUNTING SCENARIO #2:  
Green Building**

**Description:** "Green" or "sustainable" buildings use key resources like energy, water, materials, and land more efficiently than buildings that are just built to code. With more natural light and better air quality, green buildings typically contribute to improved employee and student health, comfort, and productivity.

**Purpose:** To reduce use of electricity, natural gas, and water on campus; to generate less waste.

**Scale and Scope:** Campus-wide for new facilities and remodels to include energy, water, and waste. In addition, there are other intangible benefits, such as the health and productivity of the building inhabitants.

**Timing:** going forward for all new buildings and all significant remodels

**Key Participants:** Planning, facilities, construction.

	Estimated Resource Costs	Estimated Benefits
<b>Financial</b>	The average premium for green buildings is slightly less than 2%, or \$3-5 per square foot – an average of \$400,000 for 100,000 square ft	\$58,000 operating expenses avoided annually <sup>1</sup>
<b>Environmental</b>	Construction related noise and debris  Physical footprint for the facility	~36% reduction in GHG emissions (>200 MTCDE) - Improved air quality - Water conservation - Energy conservation
<b>Social</b>	Concerns over increased budget cost for building construction	- Improved health and productivity

**Assumptions:**

- Campus growth of 100,000 square feet of new facilities.
- Greenhouse gas emission rate of 5.6 MTCDE / 1,000 square feet for current facilities, with 2.0 MTCDE / 1,000 for green buildings (36% reduction annually).
- Operating expenses rate of \$1,608 / 1,000 square feet for current facilities, with \$579 / 1,000 square feet for green buildings (36% reduction annually).

<sup>1</sup> Kats, Gregory (2003). *Green Building Costs and Financial Benefits*.

## RECOMMENDED ACTION STEPS for ELECTRICITY:

### MID-TERM (4th-6th YRS: 2015/2016 – 2016/2017 – 2017/2018)

## RENEWABLE OR INNOVATIVE ENERGY SYSTEMS

**ENG6. Build a second 1MW Grid-tied Photovoltaic system** on campus through a second power purchase agreement (ppa).

**ENG7. Research thermal energy storage systems** for at least three small stand-alone situations at distance from the central power plant.

- Ask CSU Chico about their thermal energy storage system.

**ENG8. Buy Green Power** if and when this option is again available in Central California at reasonable pricing.

- Explore community choice aggregate and regional energy production as per the example in Marin.
- Explore electricity purchases from regional green providers.

### LONG-TERM (BEYOND 6th YEAR: 2018 +)

**ENG9. Install vertical axis wind machine** as a demonstration project at a key wind tunnel location near the main quad and meter its production.

**ENG10. Attach a generator system to student workout equipment** as a demonstration project, and meter its production.

## OFFSETS PURCHASE

**ENG11. Consider Purchasing local carbon offsets** to bring the CSUMB carbon footprint to neutrality as necessary in 2030.

- The local Carbon Offset Project offers accredited and audited offsets based on local energy efficiency projects that donors can see.
- Airlines offer an offset purchase option, choose a reputable company. Purchase at the time of ticket purchase.

# TASK FORCES - UTILITIES

# ELECTRICITY



## FULL COST ACCOUNTING SCENARIO #3: Solar Hot Water System

**Description:** In a "close-coupled" solar water heating system, the storage tank is horizontally mounted immediately above the solar collectors on the roof. No pumping is required as the hot water naturally rises into the tank. In a "pump-circulated" system the storage tank is floor-mounted and is below the level of the collectors; a circulating pump moves water or heat transfer fluid.

**Purpose:** To reduce the use of electricity and natural gas on campus.

**Scale and Scope:** Installation of five 150-gallon solar water heater systems.

**Timing:** as feasible, medium term.

**Key Participants:** construction, facilities.

	Estimated Resource Costs	Estimated Benefits
<b>Financial</b>	~\$125,000 for five 150-gallon solar water heater systems	\$108,000 energy-related expenses avoided annually
<b>Environmental</b>	Decommissioning of older equipment  Physical space to install solar panels	~1% reduction in energy use per unit <sup>1</sup> (280 MTCDE)
<b>Social</b>	Concerns over increased budget costs to replace existing water heater systems	Support for local / regional businesses

**Assumptions:**

- Assumes installation of five 150-gallon solar water heater systems.
- Assumes \$25,000 cost for each 150-gallon unit<sup>2</sup>.
- Estimates 5% of utilities currently used for water heating, with an average carbon savings of 20%<sup>3</sup> from the solar hot water system, for 1% total savings.
- Blended energy expenses rate of \$385 / MTCDE.

<sup>1</sup> Summary CAP 2010/2011: Santa Clara University estimated a 3% savings

<sup>2</sup> SunMaxx Solar (2012). Retrieved from <http://www.sunmaxxsolar.com/commercial-solar-hot-water-heating.php>.

<sup>3</sup> R. H. Crawford; G. J. Treloar; B. D. Ilozor; P. E. D. Love (2003). *Comparative greenhouse emissions analysis of domestic solar hot water systems*. Journal Building Research & Information, Volume 31.



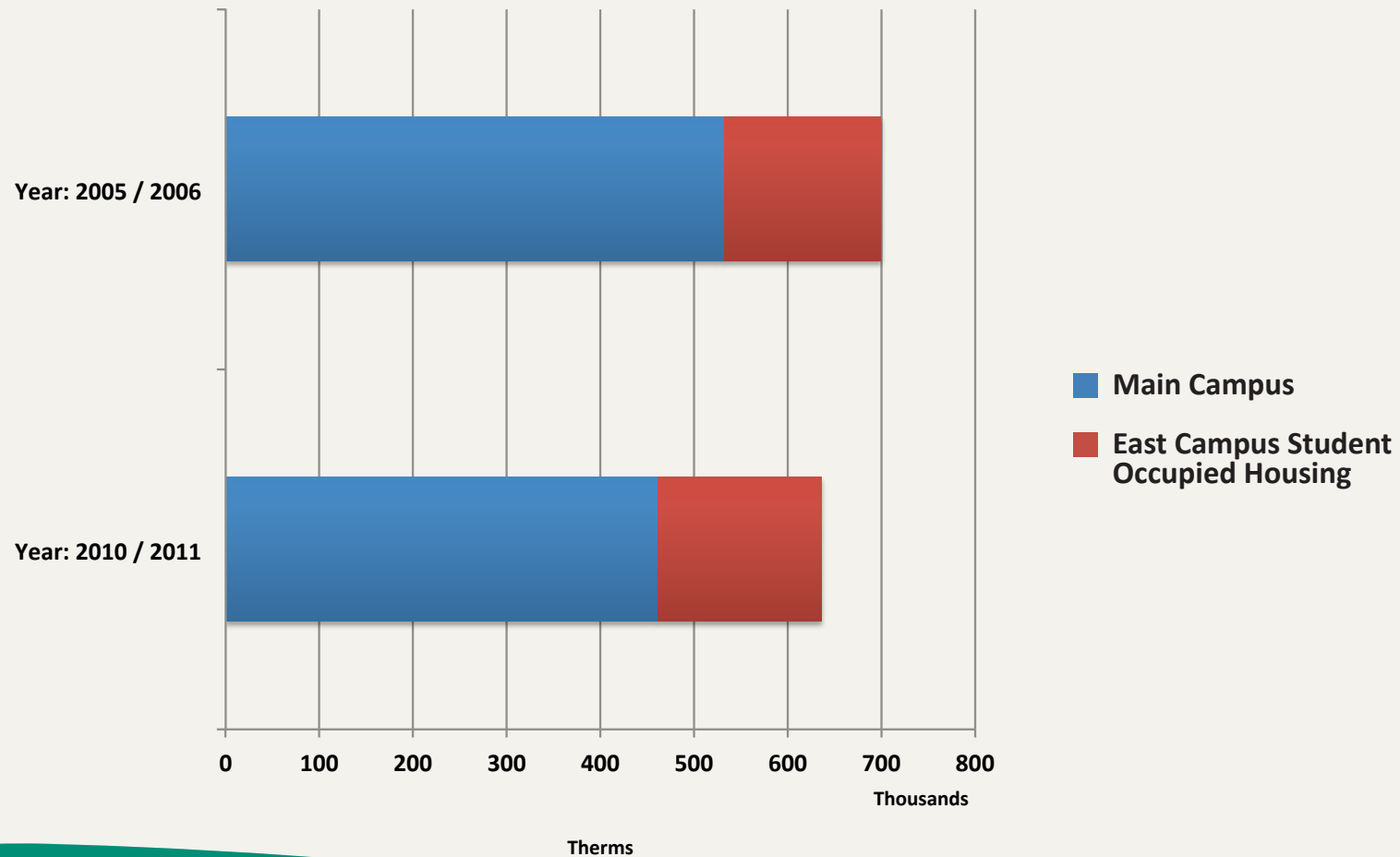
# TASK FORCES - UTILITIES

## NATURAL GAS

CSUMB used 636,076 therms of natural gas in 2010/2011, a reduction of 9% since 2005/2006. This quantity of natural gas translates into more MTCDE than the electricity use on campus, but it cost less than one third of the electricity. The reduction was achieved primarily due to the inherent efficiency of installing two central power plant boilers to replace 22 separate boilers, among other conservation efforts.

We anticipate that co-gen installation will increase natural gas use, but provide more efficient and local heat and electricity generation, thus a reduction in kWh use from purchased electricity.

More green buildings on campus, and improved energy behavior by CSUMB citizens, as recommended in other Action Steps, will help reduce natural gas use.



## TASK FORCES - UTILITIES

# WATER

The University reduced its tap water use by about 15% between 2005/06 and 2010/11, in spite of increasing square footage and campus population. Current use levels are slightly over half of the University's water allocation. Perceived progress may be a result of earlier over estimations due to a lack of metering, however we have taken the following actions.

### ALREADY ACCOMPLISHED:

- Installed over 450 new water meters.
- All newly installed showerheads are 1.8 gal/min and new toilets 1.8 gals/flush.
- Installed synthetic recycled tire ball fields, in lieu of irrigated grass.
- Waterless urinals and dual flush toilets in library.
- Purchased new front-loading water-conserving clothes washers for residence halls.
- Evapotranspiration sensing controller for irrigation.
- Some landscaping is native and/or xeriscaping.
- Fine granite and porous concrete percolating pathway helps limit impervious surfaces.
- Stormwater runoff containment features: pond, gabion walls, roof runoff to underground filtration cages and swales.
- Did not connect new buildings to the old storm sewer system, rather they infiltrate rainwater on site, as required by the Storm Water Master Plan.



### RECOMMENDED ACTION STEPS for WATER:

**WAT1. All new fixtures will be water-saving** for new or refurbished buildings, or replacement/repair. Consider:

- Short-burst automatic sinks and/or aerators.
- Dual-flush toilets and/or waterless urinals.
- Low-flow sunflower-type rain showerheads.

**WAT2. Review draft landscaping and irrigation plan** for sustainability:

- Include lawn and athletic fields, consider more synthetic turf.
- Xeriscaping with native plants, minimize irrigated landscaping.
- Facilitate groundwater infiltration.
- Retain native vegetation where possible.
- Minimize or eliminate toxic pesticides, fertilizers, & other chemicals.

**WAT3. Review drinking water/bottled water systems on campus.**

- Provide good convenient alternatives to small bottled water sales.
- Explore tap water filtration systems in lieu of large bottled water systems, such as Glacier dispensers or Brita filters.
- Bring-your-own mugs/glasses campaign.

**WAT4. Establish an outdoor water use policy** for car-washing, power-washing, etc., to avoid water waste.

**WAT5. Augment on-site water sources**

- Consider rain water capture and storage for irrigation.
- Re-visit and explore barriers to using existing recycled water pipe infrastructure as planned (purple pipe). Consider new partnerships.
- Reduce impervious surface ground coverage on campus with permeable materials and structures.

### FULL COST ACCOUNTING SCENARIO #4: Water Saving Fixtures

**Description:** The bathroom is the largest consumer of indoor water. The toilet alone can use 27 percent of household water. Water use can be reduced by 20 to 30 percent by doing just a few simple things, such as upgrading to higher quality, more efficient products.

**Purpose:** To reduce water consumption on campus.

**Scale and Scope:** Replacing existing bathroom and sink fixtures, campus-wide, with more efficient equipment.

**Timing:** as new buildings, remodels, or repairs occur.

**Key Participants:** facilities, construction.

	Estimated Resource Costs	Estimated Benefits
<b>Financial</b>	\$50,000, assuming the replacement of 1,000 fixtures at \$50 per unit	~\$49,000 annually in avoided water expenses
<b>Environmental</b>	Removal and decommissioning of older equipment	An average 25% reduction in water use and related greenhouse gas emissions (20 MTCDE)
<b>Social</b>	With "low flow" fixtures, people may be tempted to run water more	Water conservation assists with regional water scarcity

**Assumptions:**

- Assumes an average savings of 25% from current campus water consumption rates.<sup>1</sup>
- Assumes 1,000 fixtures will be replaced at \$50 per unit.

<sup>1</sup> US Environment Protection Agency (2008). *Indoor Water Use in the United States*. Retrieved from [http://www.epa.gov/WaterSense/docs/ws\\_indoor508.pdf](http://www.epa.gov/WaterSense/docs/ws_indoor508.pdf).

### FULL COST ACCOUNTING SCENARIO #5: Filtered Water Systems

**Description:** Replacement of all 5-gallon water cooler stations on campus with 50 faucet filtration systems.

**Purpose:** Reduce water consumption on campus while providing filtered water with a smaller footprint.

**Scale and Scope:** Replacement of all 5-gallon water cooler stations on campus with 50 faucet filtration systems.

**Timing:** short to medium term.

**Key Participants:** Campus Sustainability Committee and facilities.

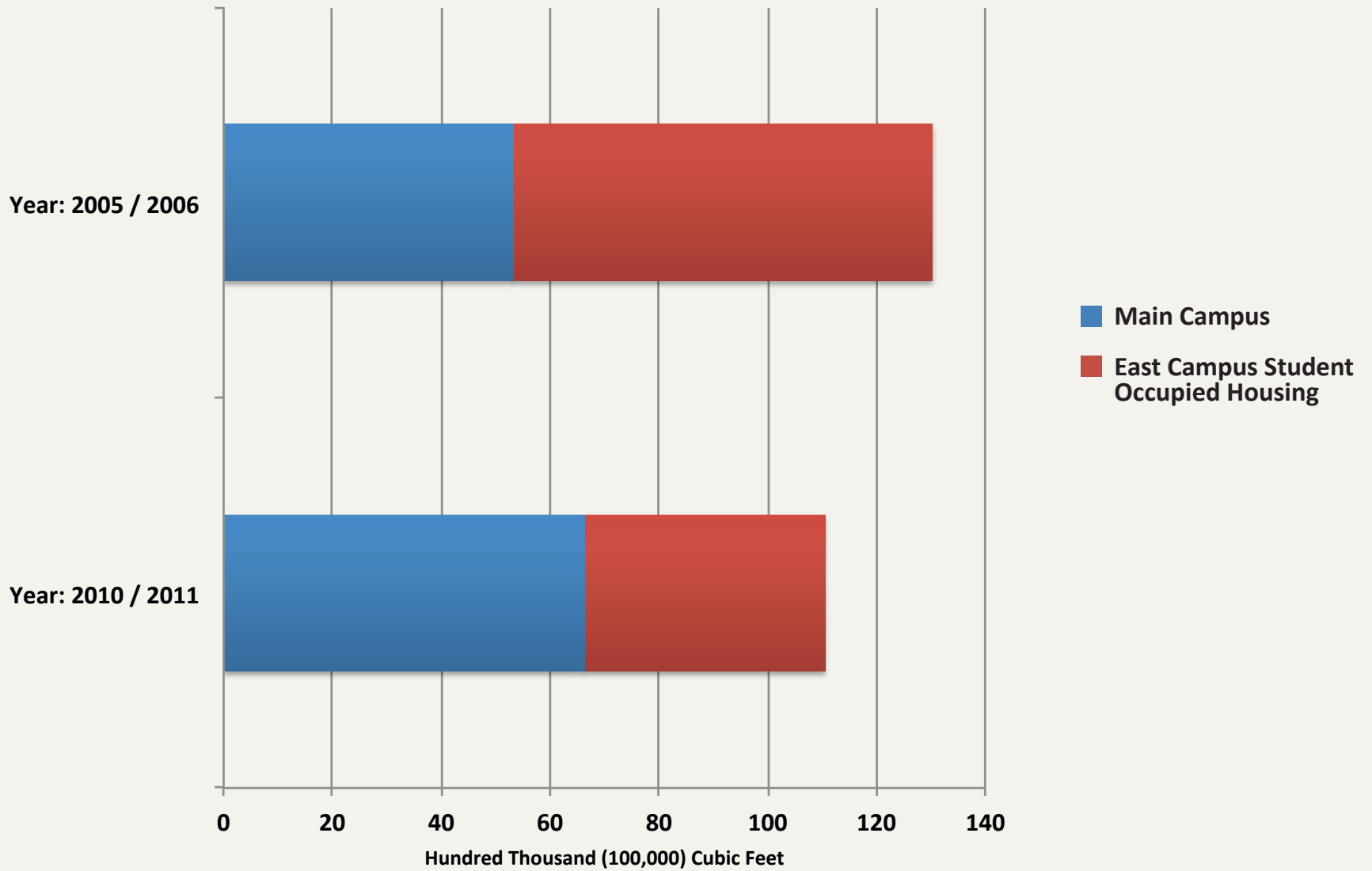
	Estimated Resource Costs	Estimated Benefits
<b>Financial</b>	\$15,000 to install 50 faucet filtration systems at \$300 per unit	\$27,000 annually saved on bottled water expenses
<b>Environmental</b>	Increased tap water on-campus usage to replace current 55,000 gallons of bottled water	<ul style="list-style-type: none"> <li>• Reduced electricity from removing water coolers</li> <li>• Fewer delivery trucks</li> <li>• Eliminate plastic water bottles</li> <li>• Conserves water (2-5 gallons of water to manufacture plastic jug)</li> </ul>
<b>Social</b>	Education campaign to show that filtered tap water is cleaner and healthier than bottled probably required	<ul style="list-style-type: none"> <li>• Better sanitation and health (water cooler equipment needs to be cleaned and maintained)</li> <li>• Lower maintenance</li> </ul>

**Assumptions:**

- Assumes an estimated cost of \$300 per water faucet filtration system.

# TASK FORCES - UTILITIES

## WATER



# TASK FORCES - UTILITIES

# TRANSPORTATION



Scope 1 Direct Greenhouse Gas emissions of CSUMB derive from operating the vehicle fleet the University owns and/or leases (89 vehicles); and the school business travel by car, train, or airplane of the staff, faculty and Athletic Department. In addition the marine science program operates some boats and the Division of Science and Environmental Policy operates some vans for academic purposes. The University owns about a dozen electric vehicles.

## ALREADY ACCOMPLISHED:

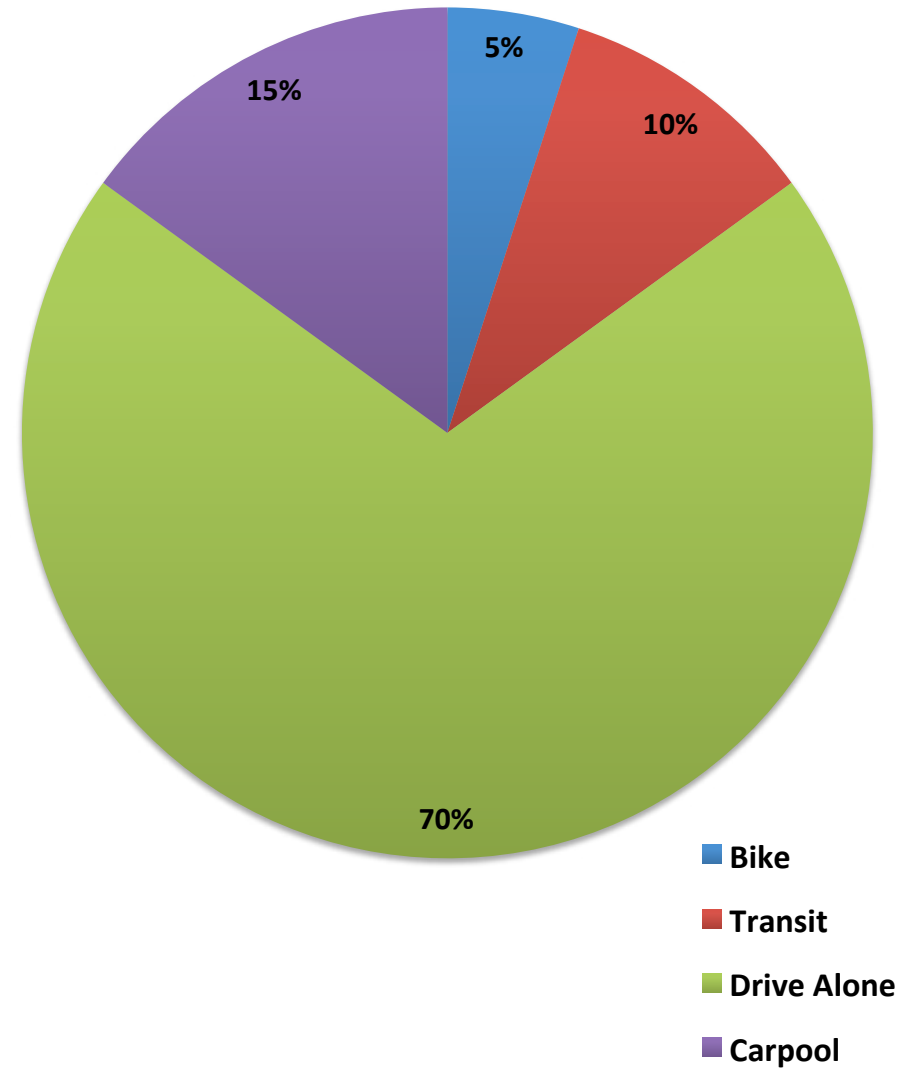
- Traffic Demand Management (TDM) Plan scheduled for completion in 2013.
- Arranged free bus travel to and from town and anywhere in MST service area with Otter identity card.
- Arranged on-campus shuttle operation, which extends to East Campus Housing.
- Ongoing Bike to Breakfast and Bike to BBQ events to promote cycling.
- Promoted Commute Alternatives programs for carpools and vanpools.
- Increased pedestrian access with crosswalks, and planned core no-vehicle zones.

- Improved access to food on campus.
- Hired a full-time transportation planner.
- Developed brand identity for alternative transportation, TRIPwise, with website and other collateral.
- Ongoing efforts to increase outdoor, locker-style and indoor secured bike parking.
- Established campus bike rack standard.
- Installed two covered transit shelters.
- Planned real-time bus arrival display for Library Transit stop, January 2013.
- Installed Monterey County's first bike boulevard sharrow treatments on 3.8 miles of main campus.
- Implemented most cost-effective UPASS unlimited transit pass program for students, and includes unlimited transit for Staff and Faculty.
- Installed two electric vehicle charging stations and four parking spaces for campus and public use.
- Presented alternative transportation in classrooms, special events, and orientations.
- Developed CSUMB Community Bike Map with points of interest for students.
- Developed two films promoting CSUMB alternative transportation.
- Full service on-campus bicycle shop including rentals, parts, maintenance, tours, and spin classes, operated by Student Activities.
- Created transportation information center on campus.
- Provided alternative transportation trip planning support since 2010.
- Restriped 2 miles of campus bike lanes for enhanced visibility.
- Implemented campus shuttle with creative branding, the CSUMB Otter Trolley, in collaboration with Monterey-Salinas Transit.
- Created The Otter Rideshare Board (The ORB) for student one-time ridesharing.
- Piloted late-night bus service to Monterey-CSUMB-Marina.
- Increased weekend transit service to campus and major transportation transfer centers.
- Engaged students in transportation planning and outreach by creating student assistant positions, class projects, and senior capstone projects.
- Implemented card-swipe program where MST buses accept swipe and software technology of CSUMB ID cards, for improved data tracking and service management.
- Created mobile application for trip planning and bus arrival information on MST fixed route services.

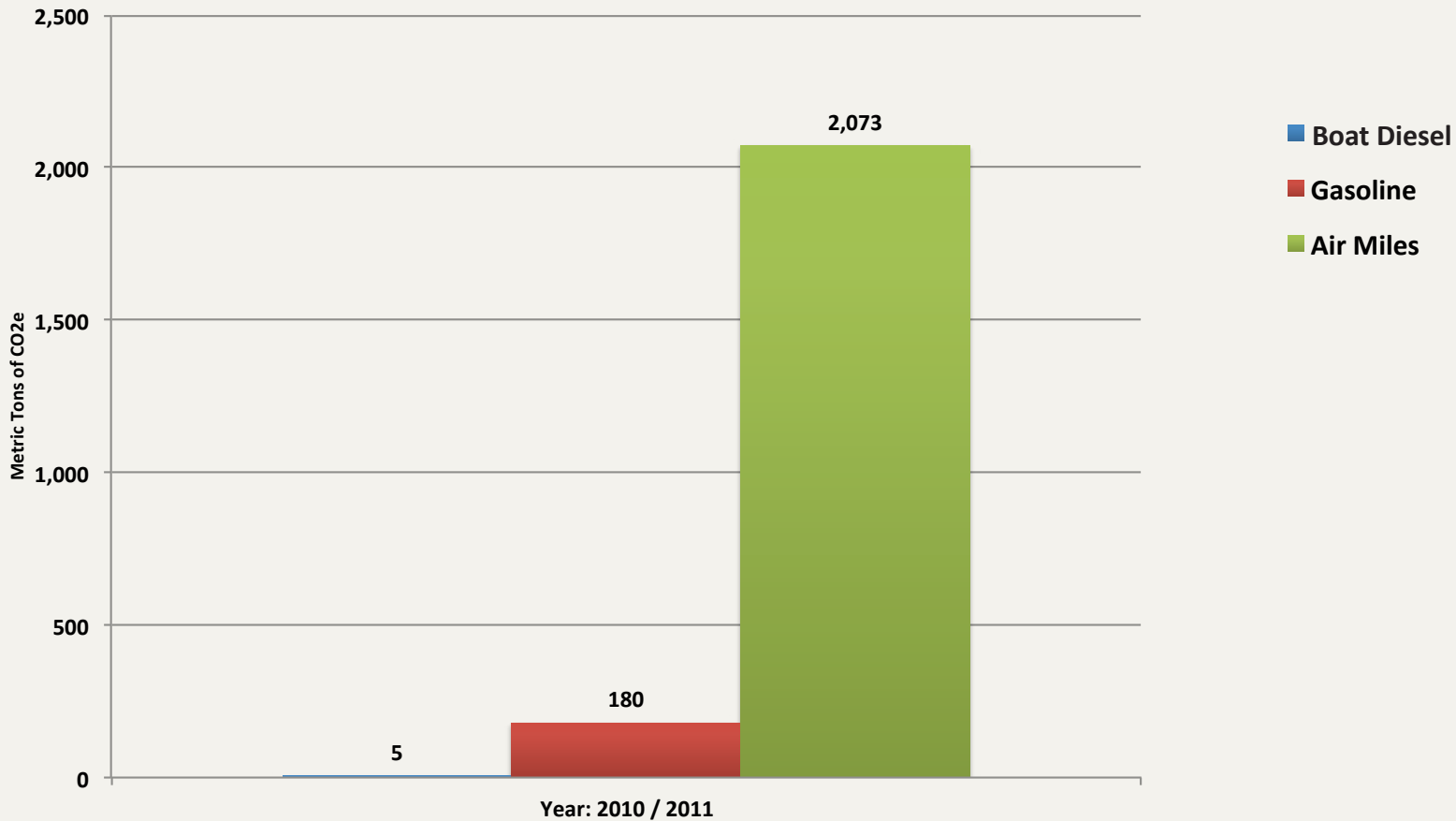
# TASK FORCES - UTILITIES

## TRANSPORTATION

Scope 3 Greenhouse Gas Emissions from commuter miles, also known as vehicle trips, are referenced in this 2010/2011 baseline. (Scope 2 Emissions are indirect emissions caused by creating electricity that we purchase, addressed above). For that year, we estimate that 70% of the commuter mode to campus was in single occupancy vehicle trips. The balance is comprised of multi-occupancy vehicles, bus, and bike. Parking is controlled on campus through seasonal and daily permits, and is discussed more below.



# TRANSPORTATION GREENHOUSE GAS EMISSIONS



Corporation data was calculated from travel expense claims (TEC) and includes rental car fuel, reimbursed mileage, and air travel.

Campus fleet vehicle fuel was calculated based on miles driven for internal combustion engine vehicles during the academic year, tracked by the campus fleet manager, and including department-specific vehicles owned by the University.

Fuel for vehicles rented by the University on a long-term basis that are not part of TEC's or the campus fleet was obtained from fuel card charges for each department.

# TASK FORCES - TRANSPORTATION

# TRANSPORTATION

## RECOMMENDED ACTION STEPS for TRANSPORTATION:

### **TRA1. Systematize transport data collection** and accounting.

- Track miles travelled or gallons of fuel used along with travel costs in the standard accounts payable system.
- Centralize travel purchases through the Travel Store or other vendor.
- Track reimbursed university mileage with its own account code.
- Ensure that all department travel is accounted for, including Athletics Dept.

### **TRA2. Facilitate alternative “modes-to-work”** for both external & internal campus trips.

- Improve pedestrian, bicycle, and other non-motorized vehicle access throughout campus.
- Increase commute mode split to 25% bicycle/walk, 25% transit, 50% other.
- Experiment with “Car-Free Fridays”, when cars are excluded from core areas, combine with street fair, farmer’s market, and/or other events.
- Implement traffic calming and roadway safety improvements throughout campus.
- Develop departmental and student campus bike-sharing programs.
- Increase bike culture on campus through group rides, workshops, events, infrastructure, and incentives.
- Improve bicycle infrastructure on campus: lanes, covered racks, maps.
- Increase ridesharing on campus by developing new resources including dynamic ridematching software.
- Implement carsharing program with fuel-efficient vehicles.
- Improve public transit routes, frequency and amenities including benches, covered shelters, access to schedules and maps, and real-time bus arrival tracking.
- Improve shuttle service routes & stops, shift to electric motor-driven.
- Construct transportation information center(s) and/or kiosks.
- Install more electric vehicle chargers.
- Support The Transportation Agency of Monterey County’s efforts to realize the Ft. Ord multimodal corridor.
- Improve campus way-finding with better signage and information.





# TASK FORCES - TRANSPORTATION

# TRANSPORTATION

## RECOMMENDED ACTION STEPS for TRANSPORTATION:

### **TRA3. Reduce the number of necessary trips to campus.**

- Increase options for on-campus food & entertainment.
- Increase flexible work schedules or work-at-home options for staff.
- Provide increasing on-line learning options for students.
- Build or refurbish sufficient housing on both the Main and East Campus for 60% of students and 65% of faculty/staff, a goal established by the CSUMB Master Plan (2007).

### **TRA 4. Manage the University Fleet for sustainability.**

- Avoid motorized vehicle use where possible, and then:
- Purchase electric, hybrid, or non-motorized vehicles where feasible, and then choose smaller gasoline-powered vehicles.
- Continue to regularly maintain vehicles in top condition.

### **TRA5. Develop a University Travel Policy** consistent with the Chancellor's Office mandates and CSUMB operational and developmental needs.

- Build a checklist to help guide the decision to travel or not to travel, based on both productivity and sustainability goals.
- Encourage and facilitate webinar and video-conferencing instead of travel where possible. Dedicate special locations for quality teleconferencing available for on-line reservation.
- Establish preference for hybrid rental cars while on travel.
- Design incentives for departments to reduce travel as long as this does not impair productivity.
- Purchase offsets for air travel from a reputable company with each ticket.

### **TRA6. Develop a University Parking Policy** aimed at reducing single-occupancy car trips to campus and intra-campus.

- Establish more priority parking locations for carpools, hybrids, electric vehicles and low emissions vehicles consistent with state standards.
- Increasingly move parking to the campus periphery, eliminating or significantly reducing parking on the central campus, allowing for more pedestrian-only and bike-only zones as per the Master Plan.

- Establish lower-cost remote parking for on-campus students.
- Establish a no-car-on-campus policy for freshman.
- Prohibit parking permits for second cars.
- Raise the prices for parking permits, parking tickets.
- Consider limiting the number of parking permits issued annually.

### **TRA7. Develop a vehicle policy for service contractors.**

- Working with Procurement and others, significantly reduce deliveries to campus, aiming for full-vehicle trips only once per month.
- Increase storage space in order to decrease delivery frequency.
- Encourage contractors to use electric, hybrid, or non-motorized vehicles, or smaller gasoline-powered vehicles, and state this in RFPs.
- Ensure compliance with State anti-idling laws.



# TASK FORCES - SCARF: SUPPLY CHAIN AND RECYCLING FUNCTIONS

## WASTE

CSUMB's waste disposal contractor supplies an annual waste and recycling weight report to the campus. Until 2011 the information was calculated based on the dumpster cubic yardage, multiplied by a standard weight conversion for waste or recycling (125/lbs/cu yard Main Campus and 110 lbs/cu yard E Campus), multiplied by the pick up frequency. In 2011, data were calculated in a different manner, the service provider weighed each truck leaving campus for one week per month for one year. They then assigned a percentage waste or recycling to CSUMB. Based on comparing two different years and using what we believe is a more accurate methodology for 2011 we show a reduction in our tons of waste generated between 2005/2006 and 2010/2011 of 807 tons, or 32%, and an increase in our recycling from 794 tons to 1,246 tons, or almost 60%.

Also in the Fall 2011 a campus waste audit used a third methodology and measured the dumpster fullness level in inches the day before pickup for every dumpster on the Main Campus for two weeks in an attempt to capture peak waste and recycling generation data. This data showed we were receiving an extreme over-servicing of the campus, often emptying partially filled, or even already empty dumpsters.

As a result, in 2012 the campus went from three day to one day a week trash service and sent out a Request for Proposal for a new waste hauler service with increased sustainability requirements for the haulers operations and campus duties. The low bidder was also the hauler with the most sustainable practices and is now working with the campus to further

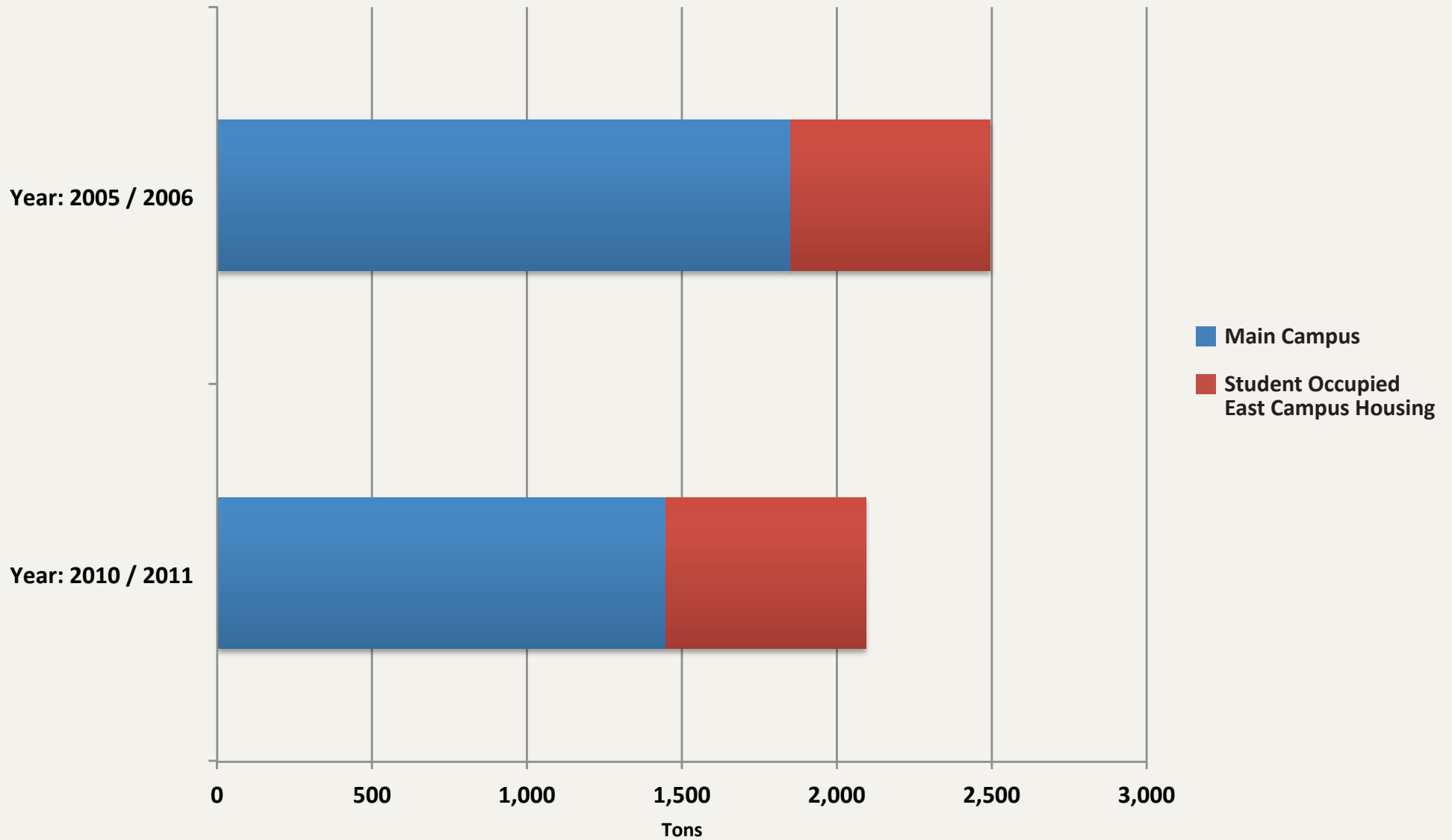
right-size our service. The new hauler has expanded duties over the last contract such as picking up compost, yard waste, increasing education and outreach and providing help for at least two Move Out events each year. Our recommended Action Steps below are well underway, and aimed at gaining a full understanding of our waste stream and our options to reduce it in all categories.

### ALREADY ACCOMPLISHED:

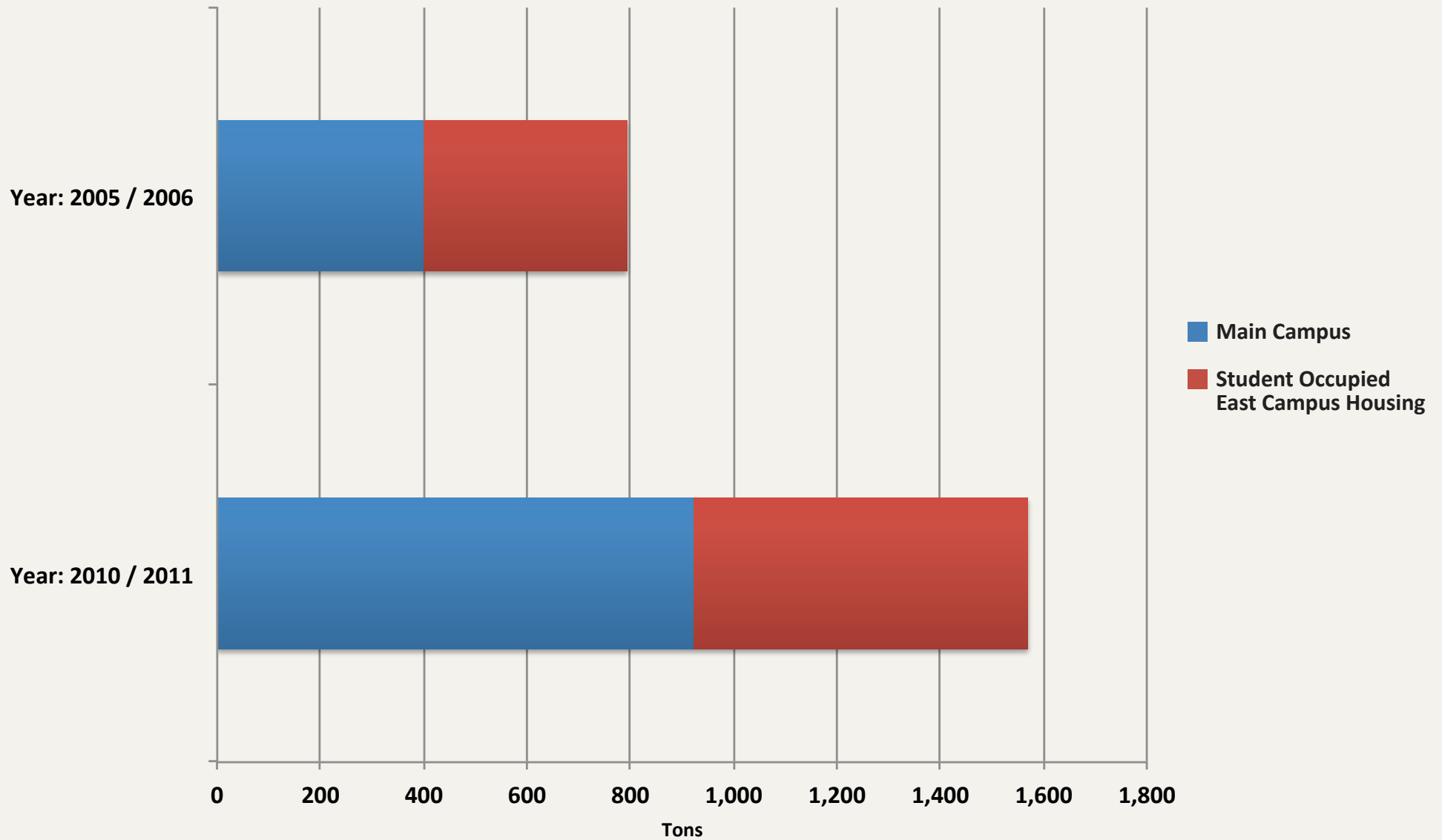
- Approximately 200 unusable Army structures removed, 90-97% construction/demolition waste by weight recycled.
- Reuse of 66 Army buildings.
- Fall 2011 waste audit lead to \$70,000/yr annual cost savings in 2012.
- Almost 20 tons of used residence hall furniture donated to Last Chance Mercantile in 2012.
- ~45,000 tires recycled for baseball and softball field surfaces.
- Reclaimed wood from old barracks used in Alumni and Visitor's Center.
- Recycling totes and educational signage in all residence hall rooms, easy access to blue recycling dumpsters.
- New and expanded blue recycling containers at 44 new locations.
- distributed blue indoor recycling bins to all student occupied East Campus Housing units.
- Annual "Move Out Week" diversion event since 2009.
- Associated Students participation in Recyclemania, a nationwide competition.
- Working with Compost Coalition and new waste contractor on composting.
- Established university business e-waste program for campus operations.



# WASTE-TO-LANDFILL



# Diversion & Recycling



# WASTE

### RECOMMENDED ACTION STEPS for WASTE:

#### **WAS1. Improve detailed time-and location-linked waste data.**

- Perform complete waste audits regularly – student-staff project.
- Document waste sources and type percentages, include e-waste, household hazardous and construction waste.
- Expand knowledge of waste stream & identify trouble areas.

#### **WAS2. Analyze audits and adjust waste collection infrastructure accordingly.**

- Provide convenient and adequate recycling bins everywhere.
- Provide very clear instructions and signage on recycling everywhere.
- Expand upcoming compost project to include pre- and post-consumer food waste at dining locations and cafes.
- Offer organic waste collection bins and backyard composting to East Campus Housing residents.
- Work with landscaping contractors to increase use of tree-trimmings.
- Offer small-battery recycling drop off locations throughout campus.
- Offer household hazardous waste drop off sites.
- Ensure waste disposal services and bins remain “right-sized” and clearly labeled.
- Explore receiving payment for cardboard and other recyclable materials.
- Make e-waste recycling program available to the campus population as well as campus operations.
- Limit e-waste generation, and ensure no campus e-waste is exported to unsafe facilities.

#### **WAS3. Develop a waste component for the “Culture of Sustainability” campaign.**

- Work with waste hauler to implement appropriate outreach campaign to maximize recycling, reusable items for donations and special waste collection, in partnership with the Monterey Regional Waste Management District.
- Include recycling and waste system explanation in orientation for new campus citizens including source reduction and re-use.



- Annually participate in Reyclemania and increase residence hall level of participation.
- Maximize use of online media. Create a waste and recycling website. Post audit and other data.

#### **WAS4. Improve “Move-Out” Day Waste Diversion.**

- Engage students, parents, staff, waste contractors, and partners in move-out days twice per year.
- Publish the event diversion results.
- Continue to partner with outside organizations to collect reusable items.
- Work closely with waste hauler to implement Move Out and other waste reducing contract requirements.
- Work closely with waste hauler funded student recycling intern to maximize diversion rates.
- Videotape the bi-annual scene for “Culture of Sustainability” campaign.
- Engage with students before move-in to reduce new purchases and duplicated items or appliances. Consider a reusable item exchange on campus.

#### **WAS5. Work with procurement to minimize waste at the source.**

- Focus on any persistent or bulky or heavy items identified by the audit.
- Review packaging arriving on campus for reduction and recycling opportunities.
- Work with contractors to minimize their waste generation on campus.
- Develop a paper use reduction policy utilizing best available technologies and behaviors.
- Perform analysis of double-sided copying/printing machines and user settings.
- Consider alternatives to paper towels in bathrooms.

# TASK FORCES - SCARF: SUPPLY CHAIN AND RECYCLING FUNCTIONS

## PROCUREMENT

Green or environmentally preferable purchasing is a way to consider the environmental aspects of purchasing decisions. Green procurement means choosing products or services that “have a lesser or reduced effect on human health and the environment when compared with the competing products or services that serve the same purpose (EPA website).”



Green procurement is important because the university makes large and frequent purchases that contribute to waste generation on campus. Strategic purchases can reduce the level of toxicity in products and raw materials used to create them and model these choices for its constituents. CSUMB currently directs over 55% of its procurement spending to recycled content choices, including paper products, paint, tires, motor oil, pens, plastic products, and printer cartridges. Most computers and other electronic appliances are Energy Star compliant. Cleaning products are Green Seal certified. The Facilities Department maintains a pool of used office equipment which can be re-used rather than purchasing new. Even the graduation gowns in May 2012 were made of recycled plastic bottles!

*CSUMB's graduation gowns are made from recycled plastic bottles.*

### RECOMMENDED ACTION STEPS for PROCUREMENT:

#### **PRO1. Achieve and document full compliance with State recycled content rules.**

- Identify gaps and options for closing them, improve percentage of recycled purchases reported in State Agency Buy Recycled Campaign annual report.
- Determine if decreased product quantity offsets higher recycled content product costs.
- Work with Committee to explore new and different product choices in a systematic product-by-product review.

#### **PRO2. Verify that all electronic products purchased are at minimum Energy Star certified.**

#### **PRO3. Ensure that all the procurement office operations possible are electronic, rather than paper.**

- Install and use a reliable e-signature system.
- Go to all possible electronic invoices, orders, and payments.
- Use video conferencing when possible to avoid driving/travel.

#### **PRO4. Explore innovative green product and services purchase options to meet existing needs.**

- Host occasional entertaining green product demonstration sessions with the Committee and general campus population.
- Seek non and less toxic products, for example, low-odor white board pens.
- Seek refillable rather than disposable items, such as pens and printer ink.
- Seek non-tree paper options if cost comparable & environmentally sound.
- Seek minimally packaged items, discuss this with suppliers.
- Consider water filtration systems to reduce water coolers costs and bottled water waste on campus.
- Buy Volatile Organic Compounds (VOC)-free paints and other products.
- Consider hybrid or electric fleet vehicles.
- For air travel, consider regular and automatic offset purchases with a reliable company.

# FOOD



Sodexo is the University's current food service provider. They operate the Dining Commons, Otter Express, Starbucks, Pete's Library Café, the Otter Bay Restaurant, Catering Services, the roving lunch food cart and concessions for athletic events. They served 273,246 meals in resident dining for 2010/2011. Vegetarian meals are available all the time, and are featured on "Meatless Mondays." Organic food selections offered are at almost 7%, and local food options (grown within 150 miles) are at almost 16%. Sodexo uses the Lean Path program for reducing pre-consumer wastes in the kitchen, which reached 8,200 pounds in 2010/2011. In addition, they regularly host a "Weigh Your Waste" campaign in the dining hall to gauge post-consumer waste, which reached approximately 42,369 pounds in 2010/2011. This is an educational campaign to encourage students to take only what they will eat. In addition, Sodexo has initiated many other sustainability efforts:

## ALREADY ACCOMPLISHED:

- Reusable Mug program – 10 - 20 cent discount if you bring your own mug.
- XpressNap Napkin Holders – designed to save 30% in paper, 100% recycled content.
- Non-hydrogenated Cooking Oils – healthier.
- Used Cooking Oil to bio-diesel manufacturer – Salinas Tallow Company.
- Eco-friendly "To-Go" packaging – plant-based, & spudware utensils & corn cups.
- Recycling bins located in all facilities.
- Aspetto Coffee – fair-trade, sustainably grown, 100% recycled content packaging with vege-inks.
- Apex dishwashing system – saves water, reduced energy, less caustic cleaning products, and 95% less packaging than traditional commercial dish washing methods.
- Sustainable Seafood – proud member of Monterey Seafood Watch program.



# FOOD

## RECOMMENDED ACTION STEPS for FOOD:

**FOO1. Increase percentages of organic &/or local food.**

- Consider partnering with local farms to directly source produce.

**FOO2. Reduce both pre- & post-consumer food waste.**

- Expand weigh your waste events for students, staff and faculty.
- Consider another pricing scheme other than all-you-can-eat.

**FOO3. Expand composting to all food serving venues.**

**FOO4. Ensure all to-go containers are EcoFriendly**

- Consider reusable, compostable, or 100% recyclable to-go containers, and/or charge for them to discourage use.
- Eliminate single-use plastic bags.

**FOO5. Use Green Seal certified green cleaning products**

**FOO6. Explore innovative outreach options and partnerships**

- Discuss “edible landscaping” ideas with groundskeepers and students.
- Offer more local organic Farmer’s Market sourced prepared dishes and produce for purchase.
- Strengthen connection with EDEN student garden club to expand food sourcing, garden dinners, composting and other aspects.
- Consider hosting healthy cooking classes with local organic and seasonal ingredients.

**FOO7. Consider more diversity of food and food vendor options on campus.**

- Explore independent ethnic food trucks approved by the health dept.
- Explore a new food model for the campus. Discuss RFPs for independent restaurants.
- Consider a grocery store which features local, sustainable, organic, bulk, fresh, healthy snacks, and easy meals.





## TASK FORCES - STUDENTS, FACULTY AND STAFF

# PEOPLE

Although the social dimensions are often overlooked in discussions of sustainability, we believe that such efforts will only be successful to the extent they explicitly address these critical community qualities: community vibrancy, social equity, engagement, and diversity. Sustainability is a mindset that asks everybody to think and act in ways that benefit others and the planet: in other words it asks for best behavior. But if people are hungry, sick, stressed, scared, tired, feeling powerless, undervalued, or that they are being treated unfairly, they understandably turn inward, disengaging from broader communities that need their support and that they need.

Aside from the human cost, the challenges above cost money. Absenteeism, lost productivity, high turnover, increased recruiting costs, and human resources lawsuits can cost the university financially as well. To the extent that sustainability efforts are able to honor the “People” component of the “Triple Bottom Line” of People, Planet, and Prosperity, there is economic benefit as well.

This is why promoting sustainability requires that we promote community vibrancy by nurturing mental, emotional, physical and ecological well-being; that we promote social equity by ensuring everybody is heard, respected, and treated fairly; that we create opportunities for productive community engagement; and that we take seriously diverse perspectives and values.

Key successes in this arena that the University should be very proud of include the extraordinary Service Learning Program which requires all students’ participation; highly successful student support programs (for academic and social success); a 3-semester foreign language requirement; and the fact that 47% of our students are the first in their families to attend college.

CSUMB curriculum offers 39 courses focused on sustainability, and many others which incorporate sustainability topics. Four student clubs and organizations are focused on sustainability, and 18 campus events about sustainability happened in 2010/2011.



## TASK FORCES - STUDENTS, FACULTY AND STAFF

# PEOPLE

### RECOMMENDED ACTION STEPS for PEOPLE:

Objectives 1 - 4 below create the “social infrastructure” needed to successfully implement objective 5: increase sustainability-focused culture.

#### PEO1. Increase feelings of campus community and place.

- Implement the Campus Master Plan objective to centralize campus buildings, and prioritize the pedestrian over the vehicle.
- Create pockets of whimsy and serenity throughout campus (e.g. fun sitting spaces, posted physical activities, labyrinths, gardens, etc.).
- Exceed Master Plan objectives beyond the currently planned number and size of pedestrian-only areas on campus.
- Promote walking to meetings.
- Change current signage guidelines to allow for development of more effective, distinct, and inviting campus signage.
- Increase and improve digital signage to inform the campus community of campus events.
- Label buildings with building names.
- Increase capacity for student co-curricular activities through the addition of new building: construct centrally located student union.
- Implement Master Plan objective to build new on-campus student housing.
- Purchase off-campus student housing in community (e.g. Marina & Salinas) coupled with efficient public transportation and biking/ pedestrian connections to campus.



#### PEO2. Increase community health, wellness and personal growth.

- Add Health and Wellness professional staff for health education.
- Add resources for peer health education.
- Continue and grow staff and faculty-wide physical health programs.
- Add wellness fostering courses such as meditation and yoga.
- Pursue the construction of the campus recreation center as soon as possible.
- Support the Student Activities & Leadership Development work with student health and wellness.
- Institutionalize resources for Personal Growth & Counseling Center (PGCC) to support workshops and counseling services.
- Build mindfulness practices into academic courses (currently a goal of the existing TLA teaching co-op: Cultivating the Holistic Campus).

#### PEO3. Increase the strength of Associated Students, student government.

- Add resources and professional staff to enhance the presence and strength of student government. Offer more leadership training.
- Allow students to incorporate and generate sustainability fees.
- Strengthen the Energy Innovations Fund program.



# PEOPLE

### PEO4. Diversify image of environmentalism/sustainability

- Expand the image of “environmentalism” and “sustainable development” among students, staff, faculty and the local community. Increase speakers and sustainability events to promote the idea of “equitable” sustainability. Use social networking, post flyers, create web pages, create video clips, hold talks and workshops to help the community see environmentalism as not just excursions to wilderness areas and recycling, but also:
  - equitable and sustainable revitalization of urban communities
  - reducing rural and urban industrial pollution and asthma
  - ensuring environmentally safe work environments for all
  - ensuring environmentally safe housing for all
  - creation of safe urban parks and outdoor gathering spaces
  - creation of affordable and convenient public transportation
  - creation of economically, racially, and ethnically diverse communities
  - increasing educational equity
  - increasing civic engagement
  - increasing economic equity
  - increasing access to healthy, safe, affordable sustainably-produced food
  - increasing equity among nations

### PEO5. Increase campus sustainability culture: sustainability awareness, values, actions, and systems thinking on local to global levels.

- Create a campus office of sustainability, if feasible.
- Create a campus sustainability logo to label all campus sustainability-focused events, projects, clubs and classes.
- Create and support sustainability-focused work study jobs for students.
- Offer sustainability-focused Teaching, Learning and Assessment teaching co-ops designed to integrate sustainability and systems thinking into the academic curriculum.
- Provide funding to support sustainability-focused capstone projects.
- Provide funding and institutional staff support for sustainability-focused campus events.
- Provide funding and instructional/institutional staff support to students wanting to establish sustainability-focused non-profits.
- Target advertising (e.g. through the sustainability web site, digital signage, flyers, etc.) to increase student participation in sustainability focused campus events and student activities and clubs.
- Increase funding and instructional/institutional support for study abroad experiences and forums for returning students to share those experiences with the campus and local community.



# TASK FORCES - INSIDE AND OUT

## COMMUNICATIONS

Progress towards carbon neutrality will come partially from technical solutions and programmatic changes, but much will rely on changes in the behavior of campus community members. To that end, it is essential that outreach and educational strategies be defined, analyzed, implemented, and sustained through effective channels of communication, marketing, and outreach.

Several clubs and committees on campus already produce many important sustainability events designed to communicate a culture of sustainability. These include the student-run Environmental Affairs Committee, Focus the Region, Campus Conservation Nationals, Campus Sustainability Day, Earth Day/Week, Rideshare Month, RecycleMania, Weigh Your (FOOD) Waste, Watershed and Coastal Cleanup Days, Social Justice Colloquium, and campus garden and farmer's market projects, among others.



### COMMUNICATIONS, OUTREACH, ANALYSIS, & LIAISON

In order to better integrate and strengthen these ad hoc efforts, the COAL Task Force strongly supports the recommendation to establish a Sustainability Office, if feasible, to work in conjunction with the Campus Sustainability Committee.

### RECOMMENDED ACTION STEPS for COMMUNICATIONS:

Sustainability communications work on campus can take place asynchronously, should consist of open conversations about ongoing issues, and provide transparency and ready access to all work. To that end, we make the following recommendations:

### COMMUNICATION

**COM1. Make full use of existing University communications resources, including Google Drive, MyCSUMB groups, and the Charlotte content management system.**

- Documentation: Google Drive is the primary on-campus resource exclusive to CSUMB students, staff & faculty that allows for document creation (e.g. word processing, spreadsheet, presentation, drawings, etc.), but more importantly collaboration (e.g. in-line editing, comments, chat, revisions, etc.).
- Internal dialogue: MyCSUMB has groups where conversations can take place (i.e. blogs), in addition to other functionality (e.g. ideation, notebook, case tracker). Access is limited to the campus community (i.e. OtterID).
- Sharing with the external community: The Charlotte content management system has the ability for a large number of individuals to be part of a workflow that can publish a publicly available web site under the domain CSUMB.EDU.
- Other channels will continue to be used as appropriate, including news releases, newsletters, and the like.
- Synchronize STARS (AASHE) and CAP (ACUPCC) reporting efforts.

# TASK FORCES - INSIDE AND OUT

# COMMUNICATIONS

## OUTREACH

**COM2. Form a campus-wide task force to develop a “Culture of Sustainability” marketing and outreach plan for 2013-2015. Include broad incentives, information, & entertainment.**

- The task force could be coordinated by the Strategic Marketing group in University Advancement, in the absence of a Sustainability Office, and its membership should, at a minimum, include representatives from:
  - Associated Students and the Environmental Committee
  - The Division of Student Affairs
  - The Faculty
  - Marketing students
  - Staff involved with campus sustainability
- The plan should consider a range of avenues, including:
  - social media/active sustainability website
  - student projects/newspaper
  - programs and workshops
  - integration with the curriculum (with Teaching, Learning and Assessment)
  - consider using the concept of “Campus Metabolism”, which compares an organization to a living organism, for illustration
  - use campus energy website in teaching
  - expanding existing data displays (e.g. CSUMB.EDU/energy)

## ANALYSIS

**COM3. Perform selective analytical research into the feasibility of, and return on, proposed sustainability projects.**

- Make use of our considerable research expertise available at the library.



## LIAISON

**COM4. Facilitate linkages between on-campus and off-campus sustainability activities or events, and provide a clearinghouse for communicating all sustainability activities.**

- Support and coordinate others in maintaining and updating electronic communications about sustainability, both internally and externally.
- Organize a regional speaker series.
- Bolster existing sustainable events (Earth Week, RecycleMania, Move Out, Climate Nationals, Focus the Region...).

# TASK FORCES - MEASURING FINANCIAL HEALTH

## PROSPERITY

Prosperity is the third leg of the people-planet-profits sustainability stool. It is defined on dictionary.com as “a successful, flourishing, or thriving condition, especially in financial respects; good fortune.” For a non-profit university prosperity refers to both the financial and non-financial health of the institution. Is the institution being managed in a way that maximizes sustainability?

Three useful gauges of financial prosperity are:

1. Is the University financially healthy?
2. How does the wider community benefit economically from the University?
3. How does sustainability translate into University prosperity?

The University maintains extensive accounting and budgetary systems, and projects its impacts on the community. These standard metrics can be viewed through an alternative lense of sustainable prosperity. CSUMB is one of 23 campuses of the California State University system and it must be noted that many financial decisions are influenced by that relationship. Below is a list of measures to track and understand university prosperity.

**PROS1. Develop a system of metrics for tracking the prosperity of the University within the sustainability context. Incorporate both financial and non-financial quantitative measures.**



## FINANCIAL MEASURES

- **Liquidity**, whether the institution has sufficient liquid resources (cash) to be able to pay its bills in a timely manner.
- **Primary Reserve Ratio**, whether the institution has sufficient funds in reserve to meet emergencies or downturns in revenues.
- **Equity Ratio, the ratio of assets to liabilities.** This is a measure, along with the ratio of expenses to revenues, used by Bain in a recent study of university sustainability from a financial point of view (<http://www.thesustainableuniversity.com/>). They looked at whether this ratio was increasing (bad) or decreasing (good), not at the absolute level of the ratio.
- **Expense Ratio:** the ratio of expenses to revenues, used by Bain in their study of sustainability. They looked at whether this ratio was increasing (bad) or decreasing (good), not at the absolute level of the ratio.
- **Debt Burden**, how much of the institution’s resources go toward payments on the institution’s debt. Too high a debt burden may limit the institution’s ability to direct resources toward needed projects, and raises the risk of the institution defaulting on its debt payments which would threaten its continued existence.
- **Debt Capacity**, how much debt the institution is able to raise. This should be a less important factor unless the institution is in a situation in which its existing debt level is reaching close to its capacity, which would leave the institution more vulnerable to a downturn in its current situation (that might require debt to be raised to meet short-term needs), less able to invest for its future needs, and also vulnerable to an economic downturn in which the debt capacity may shrink. (Note that debt capacity is determined in part by the financial situation of the institution, but also aspects of the general economic environment such as interest rates.)
- **Funding sources**, the “revenue” side of the institution’s income statement, that provides funds for both expenses and necessary investments for the future
  - Tuition from students, which typically pays only a portion of the institution’s expenses
  - External private sources
  - State funding, which is an important source for a state institution but also has been a threatened source. Funding from the state is good, but dependence upon the state for funding may be risky.

# PROSPERITY

## NONFINANCIAL MEASURES

**PROS2. Expand CSUMB's current community and regional economic impact assessment methodology to include a wider definition of "prosperity."**

- Work with other regional economists based at other local universities to develop indicators that includes elements that capture the:
  - Value of education as a public good
  - Effects of University Extension programs
  - Ability to attract business to the region
  - Lifetime contribution of graduates who remain in the region
  - Improved access to higher quality of life
  - Crime rates
  - Physical health conditions such as diabetes or heart disease

**PROS3. Determine how sustainability efforts affect the University by tracking costs avoided, risks mitigated, and indirect or difficult-to-quantify benefits.**

- Chart sustainability project investments against "business-as-usual" cost projections for improvements in energy, water, waste, transportation, or other dimensions.
- Analyze any risk reduction, eg: fewer vehicles means fewer accidents, good environmental performance means less non-compliance issues, and fewer lawsuits, etc.
- Explore indirect sustainability benefits to University prosperity, eg: healthier buildings means less absenteeism, a strong sustainability program helps attract good students and faculty, etc.



# CLOSING

This 2013 CSUMB Climate Action Plan provides an intelligent and more efficient way of doing things that enables the campus to achieve carbon neutrality by institutionalizing sustainable practices. Plan implementation by phase should contribute to greater prosperity for all aspects of the campus including people, planet and profit. These action steps should reduce costs and risks, promote sustainability citizenship for all our constituents, and allow the University to fulfill its physical Campus Master Plan to accommodate and educate more students with decreased environmental impacts.

The plan will help us maintain and expand the health, happiness and productivity of the campus population. Tracking new dimensions of the campus may improve general management practices and efficiencies. It will further encourage the infusion of sustainability topics into our curriculum and stimulate faculty and student research. We will be able to better prepare our students for the future, and for meaningful careers.

Staff primarily dedicated to sustainability efforts, working with student interns, sufficient administrative support, and the proper mandates, can coordinate the delivery of all these benefits. Over time, the results will be extraordinary.





# BASELINE DETAILS

2007 CSUMB MASTER PLAN MITIGATIONS THAT SUPPORT ACTION STEPS - PAGE 1 OF 4

Supports Action Step	Mitigation Category	Mitigation number	Relevant Mitigation Text
	Water Supply		
Water		7-1: Regulatory Compliance	New development will be required to install water conserving fixtures as required by Title 24.
		7-1: Project Feature	Policies provide for the development and design of campus facilities that support sustainable design (Planning Principle #9), incorporate central infrastructure systems (Policy CF 6.1) and utility corridors (Policy CD 2.1), strengthen the capital programming process (Policy I 5), and decrease long-term maintenance costs (Policy CF 1.4). UI sub-policies 4.1 through 4.14 provide for specific water service and infrastructure needs.
		7-1.1: Additional Mitigation Measure	CSUMB will ensure reduction in landscaping area and installation of meters within the East Campus Housing area. Additionally, CSUMB will be required to install artificial turf in recreation areas during Planning Horizon I to begin immediate water saving. In order to achieve full buildout in compliance with the 2007 Master Plan, CSUMB will reduce/eliminate irrigation in Planning Horizon II and III, as identified in Table 7-3, to ensure water availability within allocations. This may be accomplished through reduction of irrigation on turf areas or the provision of non-potable water on these areas, or replacement of turf with artificial turf to eliminate irrigation.
		7-1: Additional Mitigation Measure 7-1.2	CSUMB will monitor and report on-campus potable water usage to demonstrate compliance with the current water allocation program administered by [and] for compliance with metering requirements for East Campus.



# BASELINE DETAILS

2007 CSUMB MASTER PLAN MITIGATIONS THAT SUPPORT ACTION STEPS - PAGE 2 OF 4

Supports Action Step	Mitigation Category	Mitigation number	Relevant Mitigation Text
	Water Supply		
Water		7-1: Additional Mitigation Measure 7-1.3	<p>CSUMB will comply with the 2007 Master Plan policies or standards for specific low-flow fixtures and other water conservation standards, in addition to Title 24, that will be utilized as water conservation measures in building design and construction in order to ensure long-term conformance with allocation requirements. CSUMB will implement the following Residential Water Conservation Practices, including:</p> <ul style="list-style-type: none"> <li>• Installation of Ultra Low Flow Toilets with a maximum capacity of 1.6 gallons per flush</li> <li>• Installation of high efficiency washing machines</li> <li>• Installation of low-flow showerheads controlling flow capacity to rates less than 2.5 gpm, that have a shut-off button</li> <li>• Installation of low-flow sink faucet aerators</li> <li>• Replacement of sticking toilet handles and leaky water closet fittings</li> <li>• Insulation of hot water pipes</li> <li>• Performing periodic leak auditing for all residential units to maintain water conservation;</li> <li>• Installation of drip irrigation with rainfall shutoff devices;</li> <li>• Other irrigation measures including xeriscaping or installing artificial turf on the existing parks and fields.</li> </ul> <p>In addition, CSUMB will comply with MCWD Section 3.36.030 S New Construction which provides for minimum standards for water conservation requirements.</p>
		7-2: Project Features	<p>Policies provide for the development and design of campus facilities that support sustainable design (Planning Principle #9), incorporate central infrastructure systems (Policy CF 6.1) and utility corridors (Policy CD 2.1), strengthen the capital programming process (Policy I 5), and decrease long-term maintenance costs (Policy CF 1.4). UI sub-policies 4.1 through 4.14 provide for specific water service and infrastructure needs.</p>

# BASELINE DETAILS

2007 CSUMB MASTER PLAN MITIGATIONS THAT SUPPORT ACTION STEPS - PAGE 3 OF 4

Supports Action Step	Mitigation Category	Mitigation number	Relevant Mitigation Text
	Traffic and Circulation		
Transportation			In the memorandum of understanding reached with FORA, the University committed to develop and implement a transportation demand management ("TDM") plan to reduce vehicle trips, report annual traffic increase, and return to the Board of Trustees to seek approval to grow...
		11-1: Additional Mitigation Measure 11-1 A	CSU shall cause vehicle traffic counts to be obtained at representative campus locations during the 2008 Fall academic semester.
		11-5: Additional Mitigation Measure 11-5.1	In the event future transit capacity enhancements implemented by Monterey Salinas Transit (MST) are inadequate to serve the increased transit demand resulting from the 2007 CSUMB Campus Master Plan, CSUMB shall consult with MST, and MST shall provide data necessary to support its determination that additional transit improvements are needed to serve the increased demand, including the institution by MST of additional transit routes to the CSUMB campus, additional on-campus transit stops, and additional buses on existing transit routes.
	Noise		
Transportation		13-3: Project Features	Policies in the 2007 Master Plan locate land uses and development densities in a manner that supports a pedestrian-oriented community and provide programs to minimize traffic on streets within the campus, encourage a pedestrian-friendly environment and reduce speeds and through traffic.

# BASELINE DETAILS

2007 CSUMB MASTER PLAN MITIGATIONS THAT SUPPORT ACTION STEPS - PAGE 4 OF 4

Supports Action Step	Mitigation Category	Mitigation number	Relevant Mitigation Text
	Air Quality		
Transportation		12-1: Project Features	The majority of students (60%) and faculty/staff and institutional partners (65%) will be housed on-campus. The Master Plan includes policies and improvements to minimize auto travel, while encouraging bicycle, pedestrian, transit and other alternative transportation modes that would reduce vehicle trips and the associated indirect, operational air pollutant emissions. Specifically, CSUMB would implement Transportation Demand Management measures as demonstrated through the identified policies.
		12-2: Additional Mitigation Measure 12-2.1	<p>Projects developed under the Master Plan shall be evaluated for individual construction period air quality impacts. Contractors shall implement the following mitigation measures for all projects to reduce diesel particulate emissions (in addition, to other exhaust emissions) from on-site construction equipment to the extent feasible:</p> <ul style="list-style-type: none"> <li>All off-road construction vehicles/equipment greater than 100 horsepower that will be used on site for more than one week shall: 1) be manufactured during or after 1996, and 2) shall meet the NOx emissions standard of 6.9 grams per brake-horsepower hour. Alternatively, the project shall implement a combination of the following emission reduction measures on some or all of the above described vehicles equipment, subject to approval by the MBUAPCD: <ul style="list-style-type: none"> <li>Use Alternative fuels (such as biodiesel blends),</li> <li>Require diesel particulate matter filters on equipment,</li> <li>Require diesel oxidation catalyst on equipment.</li> </ul> </li> <li>The contractor shall install temporary electrical service whenever possible to avoid the need for independently powered equipment (e.g. compressors).</li> <li>Diesel equipment standing idle for more than five minutes shall be turned off. This would include trucks waiting to deliver or receive soil, aggregate or other bulk materials. Rotating drum concrete trucks could keep their engines running continuously as long as they were onsite and staged away from residential areas.</li> <li>Properly tune and maintain equipment for low emissions.</li> <li>Stage large diesel powered equipment at least 200 feet from any active land uses (e.g., residences).</li> <li>Limit the pieces of equipment used at any one time.</li> <li>Minimize the use of diesel-powered equipment (i.e., wheeled tractor, wheeled loader, roller) by using gasoline-powered equipment</li> <li>Limit the daily hours of operation for heavy-duty equipment.</li> </ul>



APPENDIX

# BASELINE DETAILS

## DIESEL - Units: Gallons (gal)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses
<b>Main Campus</b>															
Facilities Services & Operations	39	39	39	39	39	39	39	39	39	39	39	39	466	5	
<b>2010 / 2011 Totals</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>39</b>	<b>466</b>	<b>5</b>	
<b>2010 / 2011 GHG Emissions</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>		<b>5</b>	
<b>2010 / 2011 Expenses</b>	<b>-\$121</b>	<b>-\$123</b>	<b>-\$122</b>	<b>-\$125</b>	<b>-\$128</b>	<b>-\$132</b>	<b>-\$138</b>	<b>-\$148</b>	<b>-\$163</b>	<b>-\$171</b>	<b>-\$169</b>	<b>-\$164</b>			<b>-\$1,704</b>
															<i>estimated</i>

Source of data: Transcend (Transportation Task Force) gathered data by department

## GASOLINE - Units: Gallons (gal)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses
<b>Main Campus</b>															
Chapman Science Academic Center	83	83	83	83	83	83	83	83	83	83	83	83	999	9	
Facilities Services & Operations	506	506	506	506	506	506	506	506	506	506	506	506	6,077	55	
IT Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
University Corporation	308	308	308	308	308	308	308	308	308	308	308	308	3,701	33	
Otter Sports Center	--	--	--	--	--	--	--	--	--	--	--	--	0	0	
Main Campus	--	--	--	--	--	--	--	--	--	--	--	--	0	0	
University Police Department	758	758	758	758	758	758	758	758	758	758	758	758	9,101	82	
<b>2010 / 2011 Totals</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>1,657</b>	<b>19,878</b>		
<b>2010 / 2011 GHG Emissions</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>		<b>180</b>	
<b>2010 / 2011 Expenses</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>	<b>-\$8,164</b>			<b>-\$97,966</b>

"--" denotes no data available

Source of data: Transcend (Transportation Task Force) gathered data from each department

# BASELINE DETAILS

## TRANSPORTATION DATA 2010 - 11

Average Daily Trips		Transportation Mode Split	
Trip Type	ADT*	Transportation Mode	% Trips
CSUMB Internal Trips	947	Bike	5
CSUMB Commuter Trips	8,716	Transit	10
Non-CSUMB Pass Through Trips	10,680	Drive Alone	70
		Carpool	15

Source: Hatch Mott MacDonald CSUMB Trip Generation Fall 2010  
 \* Average Daily Trip (ADT)

Campus Managed Vehicles				
Total # of Vehicles	Hybrids	Evs	Diesel	Gasoline
89	3	15	5	66

Source: CSUMB Facilities Fleet Manager

APPENDIX

# BASELINE DETAILS

## NATURAL GAS - Units: Therms (thm)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses
<b>Main Campus</b>															
Main Campus	26,692	27,628	28,298	33,361	41,563	48,165	49,402	52,273	47,386	42,058	38,294	26,623	461,743	2,462	
<b>East Campus</b>															
East Campus Student Occupied	10,635	9,366	13,103	12,902	13,519	17,416	14,004	16,639	18,253	18,761	16,600	13,134	174,333	929	
<b>2010 / 2011 Totals</b>	<b>37,327</b>	<b>36,994</b>	<b>41,401</b>	<b>46,263</b>	<b>55,082</b>	<b>65,581</b>	<b>63,406</b>	<b>68,912</b>	<b>65,639</b>	<b>60,819</b>	<b>54,894</b>	<b>39,757</b>	<b>636,076</b>		
<b>2010 / 2011 GHG Emissions</b>	<b>199</b>	<b>197</b>	<b>221</b>	<b>247</b>	<b>294</b>	<b>350</b>	<b>338</b>	<b>367</b>	<b>350</b>	<b>324</b>	<b>293</b>	<b>212</b>		<b>3,391</b>	
<b>2010 / 2011 Expenses</b>	<b>-\$28,531</b>	<b>-\$26,114</b>	<b>-\$29,746</b>	<b>-\$32,681</b>	<b>-\$38,212</b>	<b>-\$49,447</b>	<b>-\$47,591</b>	<b>-\$51,045</b>	<b>-\$47,263</b>	<b>-\$46,236</b>	<b>-\$41,727</b>	<b>-\$30,441</b>			<b>-\$469,035</b>

Year: 2005 / 2006	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Total	Emissions	Expenses
<b>Main Campus</b>															
Main Campus	30,475	31,631	35,910	40,620	41,647	55,736	59,000	55,823	64,656	52,663	37,027	27,326	532,514	2,839	
<b>East Campus</b>															
East Campus Student Occupied	9,057	11,414	12,090	13,680	20,336	7,843	22,498	1,090	25,921	9,869	22,636	10,301	166,735	889	
<b>2005 / 2006 Totals</b>	<b>39,532</b>	<b>43,045</b>	<b>48,000</b>	<b>54,300</b>	<b>61,983</b>	<b>63,579</b>	<b>81,498</b>	<b>56,913</b>	<b>90,577</b>	<b>62,532</b>	<b>59,663</b>	<b>37,627</b>	<b>699,249</b>		
<b>2005 / 2006 GHG Emissions</b>	<b>211</b>	<b>229</b>	<b>256</b>	<b>289</b>	<b>330</b>	<b>339</b>	<b>434</b>	<b>303</b>	<b>483</b>	<b>333</b>	<b>318</b>	<b>201</b>		<b>3,728</b>	
<b>2005 / 2006 Expenses</b>	<b>-\$18,136</b>	<b>-\$18,535</b>	<b>-\$22,529</b>	<b>-\$28,874</b>	<b>-\$25,116</b>	<b>-\$36,497</b>	<b>-\$39,290</b>	<b>-\$31,971</b>	<b>-\$38,886</b>	<b>-\$31,232</b>	<b>-\$18,078</b>	<b>-\$26,810</b>			<b>-\$335,955</b>

Source of Data: CSUMB Energy Manager reporting from PG&E bills.

APPENDIX

# BASELINE DETAILS

## ELECTRICITY - Units: Kilowatt-Hours (kWh)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses
<b>Main Campus</b>															
Main Campus	799,226	879,095	942,775	1,014,711	956,952	898,994	869,154	916,090	953,727	941,277	900,099	757,415	10,829,515	2,186	
Solar Photovoltaic	-146,494	-146,494	-146,494	-146,494	-146,494	-146,494	-146,494	-146,494	-146,494	-146,494	-146,494	-146,494	-1,757,925	-355	
<b>East Campus</b>															
East Campus Street Lights	3,693	3,462	3,462	3,577	3,462	3,462	3,693	3,347	3,462	--	3,892	4,026	39,538	8	
East Campus Student Occupied	139,590	136,506	181,863	170,221	183,706	204,622	165,683	195,386	215,452	181,474	167,317	136,926	2,078,746	420	
<b>2010 / 2011 Totals</b>	<b>796,015</b>	<b>872,569</b>	<b>981,606</b>	<b>1,042,015</b>	<b>997,626</b>	<b>960,584</b>	<b>892,036</b>	<b>968,330</b>	<b>1,026,147</b>	<b>976,257</b>	<b>924,814</b>	<b>751,873</b>	<b>11,189,874</b>		
<b>2010 / 2011 GHG Emissions</b>	<b>161</b>	<b>176</b>	<b>198</b>	<b>210</b>	<b>201</b>	<b>194</b>	<b>180</b>	<b>195</b>	<b>207</b>	<b>197</b>	<b>187</b>	<b>152</b>		<b>2,259</b>	
<b>2010 / 2011 Expenses</b>	<b>-\$135,749</b>	<b>-\$154,060</b>	<b>-\$165,283</b>	<b>-\$173,410</b>	<b>-\$130,064</b>	<b>-\$129,850</b>	<b>-\$120,081</b>	<b>-\$131,484</b>	<b>-\$140,383</b>	<b>-\$139,826</b>	<b>-\$158,673</b>	<b>-\$127,926</b>			<b>-\$1,706,789</b>

Year: 2005 / 2006	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	2006 Total	Emissions	Expenses
<b>Main Campus</b>															
Main Campus	898,029	979,567	1,057,563	1,101,953	1,038,568	1,020,530	974,565	1,060,556	1,006,018	1,076,933	959,923	837,954	12,012,159	2,425	
North Tree Fire	6,000	6,000	6,000	6,000	6,160	6,920	7,120	6,560	7,200	6,760	6,000	5,160	75,880	15	
<b>East Campus</b>															
East Campus Street Lights	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,400	3,462	40,862	8	
East Campus Student Occupied	200,073	183,654	227,045	254,795	232,503	246,623	113,253	253,748	237,203	252,343	215,019	171,991	2,588,250	522	
<b>2005 / 2006 Totals</b>	<b>1,107,502</b>	<b>1,172,621</b>	<b>1,294,008</b>	<b>1,366,148</b>	<b>1,280,631</b>	<b>1,277,473</b>	<b>1,098,338</b>	<b>1,324,264</b>	<b>1,253,821</b>	<b>1,339,436</b>	<b>1,184,342</b>	<b>1,018,567</b>	<b>14,717,151</b>		
<b>2005 / 2006 GHG Emissions</b>	<b>224</b>	<b>237</b>	<b>261</b>	<b>276</b>	<b>258</b>	<b>258</b>	<b>222</b>	<b>267</b>	<b>253</b>	<b>270</b>	<b>239</b>	<b>206</b>		<b>2,971</b>	
<b>2005 / 2006 Expenses</b>	<b>-\$115,795</b>	<b>-\$121,934</b>	<b>-\$139,758</b>	<b>-\$132,787</b>	<b>-\$120,875</b>	<b>-\$112,543</b>	<b>-\$127,318</b>	<b>-\$140,868</b>	<b>-\$132,965</b>	<b>-\$142,250</b>	<b>-\$132,239</b>	<b>-\$128,580</b>			<b>-\$1,547,911</b>

"--" denotes no data available

## SOLAR PHOTOVOLTAIC - Units: Kilowatt-Hours (kWh)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses
<b>Main Campus</b>															
Solar Photovoltaic	146,494	146,494	146,494	146,494	146,494	146,494	146,494	146,494	146,494	146,494	146,494	146,494	1,757,925	(355)*	
<b>2010 / 2011 Totals</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>146,494</b>	<b>1,757,925</b>		
<b>2010 / 2011 GHG Emissions</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>		<b>(355)*</b>	
<b>2010 / 2011 Expenses</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>	<b>-\$17,957</b>			<b>-\$215,484</b>

\*Emissions avoided

Source of Data: CSUMB Energy Manager reporting from PG&E and Sun Edison bills.



APPENDIX

# BASELINE DETAILS

## AIR MILES - Units: Miles (mi)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses	
<b>Main Campus</b>																
University Corporation	57,096	57,096	57,096	57,096	57,096	57,096	57,096	57,096	57,096	57,096	57,096	57,096	57,096	685,148	2,073	
<b>2010 / 2011 Totals</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>57,096</b>	<b>685,148</b>		
<b>2010 / 2011 GHG Emissions</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>2,073</b>	
<b>2010 / 2011 Expenses</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>	<b>-\$6,106</b>			<b>-\$73,272</b>

Source of Data: Transcend (Transportation Task Force) reporting from central accounting.

## WASTE-TO-LANDFILL - Units: Tons (tons)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses	
<b>Main Campus</b>																
Main Campus	105	105	105	100	100	100	136	128	139	143	144	144	1,448	1,700		
<b>East Campus</b>																
Fredrick Park's I and II	54	54	54	54	54	54	54	54	54	54	54	54	646	758		
<b>2010 / 2011 Totals</b>	<b>159</b>	<b>159</b>	<b>159</b>	<b>154</b>	<b>154</b>	<b>154</b>	<b>190</b>	<b>182</b>	<b>193</b>	<b>197</b>	<b>198</b>	<b>197</b>	<b>2,094</b>			
<b>2010 / 2011 GHG Emissions</b>	<b>186</b>	<b>186</b>	<b>186</b>	<b>180</b>	<b>180</b>	<b>180</b>	<b>223</b>	<b>213</b>	<b>227</b>	<b>231</b>	<b>232</b>	<b>232</b>		<b>2,459</b>		
<b>2010 / 2011 Expenses</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>	<b>-\$15,663</b>			<b>-\$187,950</b>

Year: 2005 / 2006	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Total	Emissions	Expenses	
<b>Main Campus</b>																
Main Campus	154	154	154	154	154	154	154	154	154	154	154	154	1,852			
<b>East Campus</b>																
Fredrick Park's I and II	54	54	54	54	54	54	54	54	54	54	54	54	644			
<b>2005 / 2006 Totals</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>208</b>	<b>2,496</b>			
<b>2005 / 2006 GHG Emissions</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>	<b>244</b>		<b>2,931</b>		
<b>2005 / 2006 Expenses</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>	<b>-\$19,326</b>			<b>-\$231,913</b>

"--" denotes no data available

Sources of Data:

Waste Management 2005/06 Annual Campus Waste and Recycling Report

Waste Management 2011 Campus Waste and Recycling Report (CSUMB\_WM Annual\_Report\_2011\_-\_Final.xls)

Cal State Monterey Bay Waste & Recycling Data, 2011 Quarterly (WasteCSUMB\_2010\_Annual\_Report\_FINAL 9.1.11.xlsx)

APPENDIX

# BASELINE DETAILS

## DIVERSION & RECYCLING - Units: Tons (tons)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses
<b>Main Campus</b>															
Main Campus	55	55	55	54	54	54	98	98	92	108	103	99	923	-1,084	
<b>East Campus</b>															
Fredrick Park	54	54	54	54	54	54	54	54	54	54	54	54	646	-758	
<b>2010 / 2011 Totals</b>	<b>109</b>	<b>109</b>	<b>109</b>	<b>108</b>	<b>108</b>	<b>108</b>	<b>152</b>	<b>152</b>	<b>146</b>	<b>161</b>	<b>156</b>	<b>153</b>	<b>1,569</b>		
<b>2010 / 2011 GHG Emissions</b>	<b>-128</b>	<b>-128</b>	<b>-128</b>	<b>-126</b>	<b>-126</b>	<b>-126</b>	<b>-179</b>	<b>-178</b>	<b>-171</b>	<b>-189</b>	<b>-184</b>	<b>-179</b>		<b>-1,843</b>	
<b>2010 / 2011 Expenses</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>	<b>-\$6,942</b>			<b>-\$83,298</b>

Year: 2005 / 2006	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Total	Emissions	Expenses
<b>Main Campus</b>															
Main Campus	33	33	33	33	33	33	33	33	33	33	33	33	399		
<b>East Campus</b>															
Fredrick Park	33	33	33	33	33	33	33	33	33	33	33	33	395		
<b>2005 / 2006 Totals</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>794</b>		
<b>2005 / 2006 GHG Emissions</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>	<b>-78</b>		<b>-932</b>	
<b>2005 / 2006 Expenses</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>	<b>-\$3,280</b>			<b>-\$39,359</b>

"--" denotes no data available

Sources of Data:

- Waste Management 2005/06 Annual Campus Waste and Recycling Report
- Waste Management 2011 Campus Waste and Recycling Report (CSUMB\_WM Annual\_Report\_2011\_-\_Final.xls)
- Cal State Monterey Bay Waste & Recycling Data, 2011 Quarterly (WasteCSUMB\_2010\_Annual\_Report\_FINAL 9.1.11.xlsx)

## DINING COMMONS - Units: Pounds (lbs)

Year: 2010 / 2011	Percent	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total
Total Post Consumer Waste		2,574	6,478	5,151	3,764	3,614	1,207	4,871	3,636	4,468	2,767	1,535	2,302	42,369
Total Pre Consumer Waste		498	1,254	997	729	700	234	943	704	865	536	297	446	8,200
Total Meals Served (#'s)		16,604	41,795	33,234	24,287	23,318	7,787	31,424	23,461	28,829	17,851	9,903	14,853	273,346
Organic	6.73%	1,117	2,813	2,237	1,635	1,569	524	2,115	1,579	1,940	1,201	666	1,000	18,396
Local	15.90%	2,640	6,645	5,284	3,862	3,708	1,238	4,996	3,730	4,584	2,838	1,575	2,362	43,462

Source of Data: SCARF (Supply Chain and Recycling Functions Task Force) reporting from Sodexo.

APPENDIX

# BASELINE DETAILS

## WATER - Units: Hundred Cubic Feet (Hcf)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses
<b>Main Campus</b>															
Main Campus	5,768	10,070	8,706	6,715	4,313	3,336	1,879	3,954	4,302	5,213	6,989	5,179	66,424	48	
<b>East Campus</b>															
East Campus Student Occupied	4,388	6,808	4,595	3,454	2,509	3,121	2,703	2,601	3,975	2,923	3,002	4,016	44,095	32	
<b>2010 / 2011 Totals</b>	<b>10,156</b>	<b>16,878</b>	<b>13,301</b>	<b>10,169</b>	<b>6,822</b>	<b>6,457</b>	<b>4,582</b>	<b>6,555</b>	<b>8,277</b>	<b>8,136</b>	<b>9,991</b>	<b>9,195</b>	<b>110,519</b>		
	7	12	10	7	5	5	3	5	6	6	7	7		80	
<b>2010 / 2011 Expenses</b>	<b>-\$13,296</b>	<b>-\$13,640</b>	<b>-\$14,537</b>	<b>-\$14,074</b>	<b>-\$17,777</b>	<b>-\$14,074</b>	<b>-\$27,237</b>	<b>-\$8,482</b>	<b>-\$27,237</b>	<b>-\$8,482</b>	<b>-\$27,237</b>	<b>-\$8,482</b>			<b>-\$194,555</b>

Year: 2005 / 2006	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Total	Emissions	Expenses
<b>Main Campus</b>															
Main Campus	6,860	7,526	5,538	5,975	5,706	1,635	787	2,926	3,684	2,234	5,673	4,860	53,404	39	-\$109,305
<b>East Campus</b>															
East Campus Student Occupied	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	6,403	76,840	56	-\$115,085
<b>2005 / 2006 Totals</b>	<b>13,263</b>	<b>13,929</b>	<b>11,941</b>	<b>12,378</b>	<b>12,109</b>	<b>8,038</b>	<b>7,190</b>	<b>9,329</b>	<b>10,087</b>	<b>8,637</b>	<b>12,076</b>	<b>11,263</b>	<b>130,244</b>		
	10	10	9	9	9	6	5	7	7	6	9	8		94	
<b>2005 / 2006 Expenses</b>	<b>-\$5,357</b>	<b>-\$6,351</b>	<b>-\$6,376</b>	<b>-\$6,108</b>	<b>-\$6,381</b>	<b>-\$6,290</b>	<b>-\$8,922</b>	<b>-\$8,901</b>	<b>-\$8,922</b>	<b>-\$8,861</b>	<b>-\$8,922</b>	<b>-\$25,642</b>			<b>-\$224,390</b>

Source of Data: CSUMB Energy Manager reporting from Cal-AM Water bills.

## BOTTLED WATER - Units: Gallons (gal)

Year: 2010 / 2011	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Total	Emissions	Expenses
<b>Main Campus</b>															
Arrowhead	4,394	4,394	4,394	4,394	4,394	4,394	4,850	4,850	4,850	4,850	4,850	4,850	55,464		
<b>2010 / 2011 Totals</b>	<b>4,394</b>	<b>4,394</b>	<b>4,394</b>	<b>4,394</b>	<b>4,394</b>	<b>4,394</b>	<b>4,850</b>	<b>4,850</b>	<b>4,850</b>	<b>4,850</b>	<b>4,850</b>	<b>4,850</b>	<b>55,464</b>		
<b>2010 / 2011 Expenses</b>	<b>-\$2,109</b>	<b>-\$2,109</b>	<b>-\$2,109</b>	<b>-\$2,109</b>	<b>-\$2,109</b>	<b>-\$2,109</b>	<b>-\$2,328</b>	<b>-\$2,328</b>	<b>-\$2,328</b>	<b>-\$2,328</b>	<b>-\$2,328</b>	<b>-\$2,328</b>			<b>-\$26,622</b>

Year: 2005 / 2006	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Total	Emissions	Expenses
<b>Main Campus</b>															
Arrowhead	4,361	4,361	4,361	4,361	4,361	4,361	4,154	4,154	4,154	4,154	4,154	4,154	51,090		
<b>2005 / 2006 Totals</b>	<b>4,361</b>	<b>4,361</b>	<b>4,361</b>	<b>4,361</b>	<b>4,361</b>	<b>4,361</b>	<b>4,154</b>	<b>4,154</b>	<b>4,154</b>	<b>4,154</b>	<b>4,154</b>	<b>4,154</b>	<b>51,090</b>		
<b>2005 / 2006 Expenses</b>	<b>-\$2,399</b>	<b>-\$2,399</b>	<b>-\$2,399</b>	<b>-\$2,399</b>	<b>-\$2,399</b>	<b>-\$2,399</b>	<b>-\$2,285</b>	<b>-\$2,285</b>	<b>-\$2,285</b>	<b>-\$2,285</b>	<b>-\$2,285</b>	<b>-\$2,285</b>			<b>-\$28,104</b>

Source of Data: Averaged from calendar year data reported by Procurement Department

APPENDIX

# BASELINE DETAILS

## CAMPUS POPULATION - Units: Full-Time Equivalent (FTE)

	Population Utilization		FY10/11	FY29/30
<b>Faculty, Staff, and Administrators</b>				
Tenured Faculty	86	100%	86	
Tenure-Track Faculty	37	100%	37	
Full-Time Lecturer	1	100%	1	
Full-Time Coaches	15	100%	15	
Full-Time Librarians	9	100%	9	
Full-Time Support	2	100%	2	
Part-Time Instructor	193	50%	97	
Administrators	14	100%	14	
Managers	72	100%	72	
Staff	315	100%	315	
Part-Time Staff	51	50%	26	
			<b>673</b>	<b>1,900</b>
<b>Students</b>				
Fall 2010	4,727	50%	2,364	
Spring 2011	4,565	50%	2,283	
Summer	33	100%	33	
Students 2030				8,500
Non-traditional & Distance Learners 2030*				175
			<b>4,679</b>	<b>8,675</b>
<b>Total Population</b>			<b>5,352</b>	<b>10,575</b>

**Data Sources:**

IAR (Institutional Assessment & Research) University Factbook, 2010 - 2011: <http://iar.csUMB.edu/university-factbook>

CSUMB Master Plan 2007 (Moore Iacofano Goltsman, Inc.)

\* 3,500 distance learners or non-traditional students, estimated 5 trips to campus/semester. Figure regular students either live on campus or come to campus 4 -5x/wk x 18 wk semester = approx. 90 trips to campus per semester, 5/90 = about 5% of regular student footprint; 3,500 x 5%= 175

Facility Footprint	
Campus Occupied Square Footage	1,801,142

GHG Projections	FTE	MTCDE
FY 10 / 11	5,352	10,047
FY 11 / 12	5,627	10,563
FY 12 / 13	5,902	11,079
FY 13 / 14	6,177	11,595
FY 14 / 15	6,452	12,111
FY 15 / 16	6,726	12,627
FY 16 / 17	7,001	13,143
FY 17 / 18	7,276	13,659
FY 18 / 19	7,551	14,175
FY 19 / 20	7,826	14,691
FY 20 / 21	8,101	15,207
FY 21 / 22	8,376	15,723
FY 22 / 23	8,651	16,239
FY 23 / 24	8,926	16,755
FY 24 / 25	9,201	17,271
FY 25 / 26	9,475	17,788
FY 26 / 27	9,750	18,304
FY 27 / 28	10,025	18,820
FY 28 / 29	10,300	19,336
FY 29 / 30	10,575	19,852

APPENDIX

# BASELINE DETAILS

COMMUNITY VIBRANCY, SOCIAL EQUITY, ENGAGEMENT, AND DIVERSITY FOR SUSTAINABILITY  
2010/ 2011 Academic Year (unless otherwise indicated)

TEACHING, LEARNING & COMMUNITY ENGAGEMENT	Teaching & Learning <sup>2,3</sup>			Faculty Development <sup>4</sup>		Internal Engagement <sup>3,8,9</sup>			External Engagement <sup>10,11</sup>				
	# Courses Total <sup>2</sup>	# Courses Sustainability Focused <sup>2</sup>	Average Senior Score on NSSE Sustainability Questions 1, 2, 5 & 6 <sup>3</sup>	# TLA Faculty Teaching Cooperatives (number of participants)	# CAT/TLA Summer Institutes (number of participants)	# Student Organizations & Clubs <sup>8</sup>	#(%) Sustainability-Focused Student Organizations & Clubs <sup>8</sup>	# of Sustainability-Focus Campus Events <sup>9</sup>	Average Senior Score on NSSE Sustainability Questions 3 & 4 <sup>3</sup>	# of Service-Learning Courses <sup>10</sup>	# Students Participating in Service-Learning <sup>10</sup>	# of Student Service-Learning Hours Completed <sup>10</sup>	# Students in Study Abroad Programs <sup>11</sup>
	476	39 (8%)	2.8	9 (71)	6 (49)	71	4 (5%)	18	2.02	89	1,928	65,120	115

COMMUNITY VIBRANCY: HEALTH AND WELLNESS	Physical Activity <sup>5</sup>		Mental, Emotional, and Spiritual Wellness & Support <sup>6</sup>				Health & Wellness <sup>7</sup>				
	# Kinesiology Activity Courses	# Enrolled in Activities Courses	# Personal Growth & Counseling Center (PGCC) Workshops (workshop sessions)	# of Times Students Participated in PGCC Workshop Sessions	# of Times Students Sought Individual or Group Counseling	% "yes" answers to satisfaction survey question: Did counseling help your academic progress?	% "yes" answers to satisfaction survey question: Did counseling help you stay at CSUMB?	# of Times Students Sought Screening Services	# Events, Presentations, & Workshops	# of Times Students Attended Outreach Workshops	# of Times Students Received Health Services
	~70	~1750	16 (331)	1033	739	61%	63%	552	98	4,924	4557

APPENDIX

# BASELINE DETAILS

## COMMUNITY VIBRANCY, SOCIAL EQUITY, ENGAGEMENT, AND DIVERSITY FOR SUSTAINABILITY 2010/ 2011 Academic Year (unless otherwise indicated)

SOCIAL EQUITY AND DIVERSITY	Race & Gender <sup>1</sup>										
	Total	Male	Female	Latino/a American	Asian American	African American	Pacific Islander	Native American	White	Two or More	Other or Decline
Students (Sp '10)	4603	1798 (39%)	2805 (61%)	1351 (29%)	233 (5%)	186 (4%)	41 (1%)	29 (1%)	2164 (47%)	265 (6%)	344 (7%)
All Faculty <sup>12</sup> (F 11)	343	151 (44%)	192 (56%)	56 (16%)	42 (12%)	12 (3%)	*	4 (1%)	198 (58%)	2 (1%)	29 (8%)
Tenured Faculty (F 11)	86	48 (56%)	38 (44%)	18 (21%)	16 (19%)	5 (6%)	*	1 (1%)	43 (50%)	0 (0%)	3 (3%)
Tenure-Track Faculty (F 11)	37	17 (46%)	20 (54%)	6 (16%)	7 (19%)	2 (5%)	*	0 (0%)	18 (49%)	0 (0%)	4 (11%)
Full-Time Lecturers (F 11)	1	0 (0%)	1 (100%)	0 (0%)	0 (0%)	0 (0%)	*	0 (0%)	1 (100%)	0 (0%)	0 (0%)
Part-Time Lecturers (F 11)	193	74 (38%)	119 (62%)	26 (13%)	19 (10%)	4 (2%)	*	3 (2%)	120 (62%)	1 (1%)	20 (10%)
Administrators (F 11)	14	7 (50%)	7 (50%)	0 (0%)	2 (14%)	1 (7%)	*	0 (0%)	9 (64%)	0 (0%)	2 (14%)
Managers (F 11)	72	30 (42%)	42 (58%)	8 (11%)	4 (6%)	3 (4%)	*	0 (0%)	51 (71%)	1 (1%)	5 (7%)
Full-time Staff (F 11)	315	123 (39%)	192 (61%)	75 (24%)	34 (11%)	19 (6%)	*	4 (1%)	148 (47%)	5 (2%)	30 (10%)
Part-time Staff (F 11)	51	18 (35%)	33 (65%)	7 (14%)	1 (2%)	1 (2%)	*	0 (0%)	34 (67%)	0 (0%)	8 (16%)
Vision Students #(%)	Students <sup>1</sup>										
	Adult	First-Generation	Historically Underrepresented	Low-Income	Tri-County						
	733 (17%)	2072 (47%)	1516 (34%)	1305 (30%)	1352 (31%)						

Sources

1. IAR Factbook, 2010 - 2011 & 2011 - 2012: <http://iar.csUMB.edu/university-factbook>
  2. STARS Report: <http://www.google.com/url?q=https%3A%2F%2Fstars.aashe.org%2Finstitutions%2Fcalifornia-state-university-monterey-bay-ca%2Freport%2F2011-07-29%2F&sa=D&szntz=1&usq=AFrqEzderriCP58P8b0y4IDA1GLX9KGWPg>
  3. NSSE Report: <http://iar.csUMB.edu/nsse-reports>
  4. Becky Rosenberg, Teaching Learning and Assessment Director
  5. Kent Adams, Kinesiology Chair
  6. Jessica Flores, Caroline Haskell, Personal Growth and Counseling Center
  7. Gary Rodriguez, Campus Health Center
  8. CSUMB Student Clubs & Organization Web Page (accessed July 27, 2012): <http://iar.csUMB.edu/search/redirect/11218?searchterm=clubs> (Sustainability-Focused clubs & Organizations: Environmental AS Committee, Cycling Club, EDEN, & Outdoor Adventure Club)
  9. Rebecca Kersnar, List compiled for CVSEEDS Work Group
  10. Roberta Valdez, Service Learning Institute
  11. Holly White, International Programs, for Fall 2011-Sum 2012
  12. Includes coaches, librarians, and support
- \* Pacific Islanders combined with Asian American

## APPENDIX

# BASELINE DETAILS

## CSU MONTEREY RECYCLED CONTENT REPORT 7/01/10 - 6/30/11 Recycled Report

<b>Total Spend (All reportable purchases)</b>	<b>\$230,836</b>
<b>Total Recycled Spend (RCP purchases)*</b>	<b>\$126,648</b>
<b>Recycled Content %</b>	<b>55%</b>

### Category Breakdown

#### Glass

Glass Total Spend (All reportable purchases)	\$44
Glass Total Recycled spend (RCP purchases)*	\$44
Glass Total Recycled % to total	0%
Glass Recycled % in Category	100%

#### Plastic Products

Plastic Products Total Spend (All reportable purchases)	\$87,320
Plastic Products Total Recycled spend (RCP purchases)*	\$32,914
Plastic Products Total Recycled % to total	14%
Plastic Products Recycled % in Category	38%

#### Paper Products

Paper Products Total Spend (All reportable purchases)	\$68,400
Paper Products Total Recycled spend (RCP purchases)*	\$56,031
Paper Products Total Recycled % to total	24%
Paper Products Recycled % in Category	82%

#### Printing and Writing Paper

Printing and Writing Products Total Spend (All reportable purchases)	\$66,619
Printing and Writing Products Total Recycled spend (RCP purchases)*	\$35,449
Printing and Writing Products Total Recycled % to total	15%
Printing and Writing Products Recycled % in Category	53%

#### Metal Products

Metal Products Total Spend (All reportable purchases)	\$8,452
Metal products Total Recycled spend (RCP purchases)*	\$2,209
Metal Products Total Recycled % to total	1%
Metal Products Recycled % in Category	26%

\* RCP = Recycled-Content Products

\*RCP products meet the SABRC post consumer requirement but may not be CA certified.

# BASELINE DETAILS

## GHG EMISSION FACTORS - Units: Metric Tons of Carbon Dioxide Equivalent (MT-CO<sub>2</sub>e)

### Diesel [1]

United States 1.02E-2 Metric Ton CO<sub>2</sub>e / Gallon

### Gasoline [1]

United States 9.03E-3 Metric Ton CO<sub>2</sub>e / Gallon

### Natural Gas [1]

United States 5.33E-3 Metric Ton CO<sub>2</sub>e / Therm

### Electricity [2]

California 2.02E-4 Metric Ton CO<sub>2</sub>e / Kilowatt-hour

### Air Travel [3]

United States 3.03E-3 Metric Ton CO<sub>2</sub>e / Air Mile

### Waste [4]

United States 1.17 Metric Ton CO<sub>2</sub>e / Ton

### Recycling [4]

United States -1.17 Metric Ton CO<sub>2</sub>e / Ton

### Water [5]

Monterey, CA 4.8 Kilowatt-hour / 1,000 Gallons of Water  
3.6 Kilowatt-hour / Hundred Cubic Feet of Water

#### Data Sources:

[1] United States Environmental Protection Agency, Office of Atmospheric Programs. April 2012. INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2010. <http://www.epa.gov/climatechange/ghgemissions/usinventoryreport.html> (accessed October 18, 2012).

[2] Pacific Gas & Electric. March 2012. PG&E Reports Lowest Greenhouse Gas Emissions. <http://www.pgecurrents.com/2012/03/26/pge-reports-lowest-greenhouse-gas-emissions/#.UJ1RraoETTE>. email (accessed November 10, 2012).

[3] United States Environmental Protection Agency, Climate Leaders. May 2008. Optional Emissions from Commuting, Business Travel and Product Transport. [http://www.epa.gov/climateleadership/documents/resources/commute\\_travel\\_product.pdf](http://www.epa.gov/climateleadership/documents/resources/commute_travel_product.pdf) (accessed October 18, 2012).

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# ACKNOWLEDGEMENTS

A big “Thank You!” to all our task force members, invited guests, and participants who helped develop this Climate Action Plan 2013:

## **Electricity & Utilities**

Mike Lerch, Chair  
Chris Carpenter  
Chip Thomas

## **Transcend (transportation)**

Megan Tolbert, Co-chair  
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Shamika Lucas  
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Max Lorenz  
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Graphic design and layout by Tyler and Shuntelle Emanuel

