

# Change Agent Group Goals-Built Environment

## List of Current Sustainable Practices:

- UCSB has a green building policy in place that all new buildings programmed after July 1, 2004 have to meet LEED Silver
- UCSB was the first campus to receive a LEED NC certification. In 2002 Bren Hall was the first Laboratory building to receive LEED Platinum
- Fall of 2005, Girvetz Hall received LEED EB silver, first LEED EB building in the UC system
- UCSB uses the least amount of energy per square foot than any other UC campus
- UCSB irrigates 90% of the campus landscape with reclaimed water
- UCSB has implemented the use of waterless urinals and other low flow plumbing fixtures around campus
- UCSB has an extensive bike path throughout the campus and 9% of staff and faculty bike to work and 78% of students
- UCSB has 5 LEED accredited professionals on campus

**Mission Statement:** To provide education and seek resources to transform the UCSB campus design, development, construction and modification process to ensure an energy efficient and environmentally responsible built environment.

## Long Term Vision:

- Renewable energy generated on site / non-depletable.
- Water use would be commensurate with site rainfall and managed to match.
- Materials – recycled, reused or sustainable harvested. Nontoxic and either biodegradable or recyclable.
- Design embraces closed loop material system
- Work environment would be safe and healthy for both workers constructing new facilities and occupying new spaces.
- Zero Waste / zero pollution.
- Zero net habitat impact.

## Goals (measurable or numerical data)

### Short term (0-1 years)

1. Each building committee will have a sustainability representative
2. Develop a UCSB Green Checklist based off UCSB design guidelines. Have the design team fill out the checklist and provide a detail explanation on how they are achieving the criteria.
3. Educate building committees on what sustainable design is and what Facilities Management would like to see in their building designs.

4. Establish campus sustainability standards for new building construction and renovation work. Make these standards available on our web site.
5. Develop Sustainable Design Language for Consultant Proposal Requests and University Contracts.
6. Buildings should showcase sustainable design techniques in a “Building that Teaches” approach.
7. Design buildings in a sustainable manner as described in both the “Whole Building Design Guideline”, developed by the Federal Government and LEED, developed by the U.S.G.B.C.

#### Intermediate (1-5 years)

1. All new projects go through an eco-charette and work on providing grant money to fund the process
2. Write up some stringent sustainability language that can be placed in DCS contract documents (EDPA, Etc?)
3. Select consultants based on proven skills in designing buildings that meet UCSB standards.
4. Building design would be flexible to accommodate future sustainable features.

#### Long Term (5-10 and 10-20+)

1. Continue to educate campus on impacts of new construction as well as resulting sustainable practices.
- 2.
- 3.

#### **Barriers:**

- State funds for buildings, budget does not look at lifecycle cost, and budget amount is never enough
- Design teams working on buildings do not have the expertise in sustainable design even though they say they do
- Regulations (?)

#### **Action Items:**

- Set targets
- Develop sustainable guidelines for new construction and retrofits
- Insure that all consultants are educated in the process
- Continue to work on low flow hoods to pass Cal-OSHA

Chair contact: Gary Banks, [gary.banks@dcs.ucsb.edu](mailto:gary.banks@dcs.ucsb.edu)

# Sustainable Energy and Water Group

## ***Vision Statement:***

We will work to reduce the use of non-renewable energy consumption on campus, through energy conservation and strategic procurement of energy resources, until our campus can accomplish its mission independent of non-renewable energy sources.

## ***Mission Statement:***

In order to realize our Vision, the Sustainable Energy Group will provide leadership for our campus by:

1. Planning energy conservation measures
2. Reviewing plans for new buildings assuring energy efficiency meets campus and State standards
3. Investigating and employing new renewable or energy efficient technologies
4. Providing information about our energy use and its global environmental impact to campus constituents
5. Recommending purchase of renewable energy where these resources prove cost effective.

## **Water**

### **List of Current Sustainable Practices:**

UCSB has been using reclaimed water for irrigation since 1994. Presently, the cost of reclaimed water is 1/5 the cost of potable water. The campus uses reclaimed water for the majority of its irrigation and, at this time, reclaimed water reaches approximately 90% of campus. UCSB's reclaimed water contract requires that we use at least 140 acre-feet per year. Even with the conversion of Robertson Field to artificial turf (formerly irrigated with reclaimed water) our reclaimed usage increase from 138 AF last year to 171 AF this year. With Housing & Residential Services moving more of their irrigation to reclaimed water, our campus should remain permanently above the 140 acre-feet minimum usage. The campus also uses reclaimed water successfully in some toilets in the first floor of Bren Hall. Waterless urinals were also installed in Bren Hall and are now required in all new and renovated construction. Each waterless urinal saves approximately 45,000 gallons of water per year. **(ARE WE DOING ANY MORE RECLAIMED WATER TOILETS?)** On-going measurement and verification of water use is the responsibility of the Energy Management Team headed by Jim Dewey.

In 2006, Housing & Residential Services is planning to irrigate all of their East campus lawns with reclaimed water. Increased use of reclaimed water saves money and our precious potable water supply.

<i>Water</i>								
<b>-Total fresh water consumption</b>	<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>	<b>2000-2001</b>	<b>2001-2002</b>	<b>2002-2003</b>
Main Campus Water Use HCF/yr <sup>8</sup>	177,818.00	228,542.00	182,927.99	179,826.00	249,816.99	230,423.99	212,910.99	172,005.00
H&RS Apartments HCF/yr		87,120.00	76,665.60	78,843.60	85,677.60	74,487.60	100,623.60	96,267.60
<b>Total Fresh Water Consumption</b>		<b>315,662.00</b>	<b>259,593.59</b>	<b>258,669.60</b>	<b>335,494.59</b>	<b>304,911.59</b>	<b>313,534.59</b>	<b>268,272.60</b>
<b>-Reclaimed Water Use</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
Main Campus Reclaimed Water Use HCF/yr <sup>8</sup>	60,445.00	70,516.00	53,877.00	68,738.00	62,700.00	52,428.00	69,186.00	65,523.00
Total Reclaimed water H&RS apartments HCF/yr <sup>8</sup>	61,419.60	66,211.20	47,175.48	66,080.52	66,036.96	53,622.36	61,550.28	59,938.56
<b>Total Reclaimed Water Consumption</b>	<b>121,864.60</b>	<b>136,727.20</b>	<b>101,052.48</b>	<b>134,818.52</b>	<b>128,736.96</b>	<b>106,050.36</b>	<b>130,736.28</b>	<b>125,461.56</b>

<sup>8</sup> Main campus includes all H&RS and other auxilleries, but not apartments or FT. Data provided by Jim Dewey.

### **Main Campus-The Built Environment**

The university is specifying plumbing fixtures that reduce water usage. The campus has installed waterless urinals, and dual flush toilets, as well as low flow faucets, flush valves, and showerheads. Thus far, the waterless urinal has not only achieved great success in functionality and water savings, but also in maintenance cost. These urinals do not have flush valves or any moving parts, which make them practically maintenance free. All of the new construction on campus will incorporate the waterless urinal. Campus statistics show that one waterless urinal saves 45,000 gallons of water per year.

**What can we say here about encouraging pervious surfaces?**

In 2004, UCSB used 460 acre-feet of potable water, which was approximately 52% of our total yearly allotment. As we continue to grow, we are still trying to conserve water use to stay far under this allotment. In 20\_\_, the campus created “The virtual chilled water loop”. This loop currently connects 13 laboratory buildings on campus saving not only the energy in running 13 different chillers, but the associated water as it is used in a closed loop system.

**Are there other water saving things in the built environment we should add here?**

### **Impacts of Parking Lot Cleaning**

Need to add information here

### **Impacts of Custodial Services**

Need to add their services here

### **Impacts of Facilities Management (trades)**

Need to add their services here

## **GROUNDS**

The UCSB's Grounds department is responsible for 800 acres of landscape and hardscape, irrigation, erosion control, and integrated pest management. The campus is divided into 4 zones. All grounds staff maintains their allocation in the same fashion but each team is zone specific. Grounds staff start at 4 a.m. and do the majority of their work prior to the arrival of many university representatives and students. Maintenance of the other 2,000 acres of campus is split between Housing & Residential Services (H&RS) and CCBER.

### **Impact of Grounds Maintenance Equipment on Water:**

- The campus is divided into 4 zones, each zone has 3-4 groundskeepers and each person uses one of the following: eco-power blower, gas powered lawnmower, gas powered edger, or a mulch mower. All of the above equipment meets Cal EPA's CARB Phase II rating.

### **Plantings:**

UCSB chooses xerophytic plants that are adapted to living in a dry arid habitat. The university also plants peninsula natives on the north bluff of campus and California natives on the east bluff. These plantings provide habitat that encourages wildlife and native genotypes. Other plantings on campus are:

- Hedges that require no additional water than what is provided naturally in our climate. These include raphiolepis and westringia salvia, which thrives in the minimal amount of rainfall Santa Barbara receives.
- Drought tolerant native/adaptive plants, such as ceanothis and lantana. These plants use little water and require minimal maintenance.
- Trees that require little water once stabilized. Examples of these trees are: Tipuana, Coast Live Oak, and Tristania conferta.
- Campus is installing more artificial turf for playing fields to address student requests that we provide recreation areas 24/7. Playing fields with sod require more maintenance, fertilizer, and water. With artificial turf neither water nor fertilizer is applied, and the field can be played on year-round because the artificial turf does not wear as quickly as regular turf.

### **Impacts of Animal and Vegetation Plant Control:**

- Use worm glo castings to prevent white fly
- Vinegar mixed with water to kill white
- Caffeine tea to kill ornamental pests
- Gradual removal of ivy and juniper to reduce rats, raccoons, and other rodents. This plays a part in our Integrated Pest Management program (see IPM policy attached in IEQ credits 10.4 and 10.5.)

### **Impacts of Landscape Waste:**

- Green Waste is stored at a central location on campus, is picked up, mulched locally off campus, and returned to use on our landscape.
- Tree trimmings are mulched and then used for mulching landscapes.
- Campus has a schedule for mowing and clippings are recycled. UCSB thatches grass. During the hotter months when UCSB cuts the grass it “sweeps one, leaves one”, meaning when we cut the grass we leave the cuttings in the grass, and when the next cutting happens they sweep the grass up. Leaving grass clippings on the lawn also aids in returning nutrients to the soil, especially nitrogen, as grass clippings are nitrogen rich. This results in a reduced use of fertilizers.

### **Irrigation Management:**

UCSB’s Automated irrigation system is controlled by a weather station on campus via Ethernet. The Physical Facilities Energy Team completed the weather station in September 2003. The controls automatically notify the weather station on the evapotranspiration levels. The landscaping is only irrigated when these levels are low. Approximately 90% of the campus is currently irrigated with reclaimed water. Plans include capturing the balance of the campus irrigation system with reclaimed water within the next 2 fiscal years.

### **Impacts of Fertilizers:**

- Organa-all purpose fertilizer derived from agave
- 90% sulfur prill to balance soil pH
- Worm castings are used everywhere on campus
- Corn gluten used to inhibit weeds
- Lawns use Turf Supreme 25 Nitrogen/5 Phosphorus/5 Potassium- the only lawns that receive fertilizers are the playing fields. Playing fields only get fertilized three times per year and Grounds staff monitor the phosphorus run off levels. The campus is also incorporating more artificial turfs for the high use areas, which reduces both fertilizer use and water consumption. Eventually campus will go to all artificial turfs for all playing fields.

The Grounds Department has phased out the use of harmful pesticides and now uses bio-rational herbicides. The campus no longer uses Roundup, which affects sensitive marine invertebrates, and instead uses a clove oil based material called Matran 2, which is certified by the Organic Materials Review Institute (OMRI). Another product used on campus is Alldown, which is a vinegar-based material that is also OMRI certified. Alldown is a non-selective weed and grass herbicide that is considered a breakthrough in environmentally responsible vegetation management. This product is not harmful to earthworms or beneficial bacteria and fungi. Unlike Roundup and other herbicides that affect plant growth regulation, all of these bio-rational herbicides have a physiologic mode of action that causes cellular disruption rather than a biologic mode of action against which weeds can build up genetic resistance.

UCSB also uses a Waipuna system, which is an organic hot foam weed control system. The Waipuna system uses 203-degree water assisted by heat-retaining foam made from corn and coconut sugar. This foam material is 100% natural, non-toxic, and fully biodegradable. Organic Hot Foam method is applied to unwanted weeds, killing them instantly.

### **Impacts of Cleaning Building Exteriors:**

Buildings on campus range in age. Some buildings were built in the early 50's while others just recently finished construction. The Cleaning process for the building exteriors is done in a few steps:

1. Perform a test to see if there are contaminants (i.e. lead paint)
2. If any contaminants are found, special steps are taken during the cleaning. When water is sprayed on the building to wash off particle matter, catch basins are used to contain run off. (If tests contain lead they do not water blast, instead they encapsulate the lead with primer prior to painting.)

Do we use phosphate cleaners??

### **Impacts of Paints and Sealants used on Building Exteriors:**

Just like selecting interior paints, the UCSB paint team is always looking for environmentally friendly exterior paints and is constantly testing coatings to find ones that are not only environmentally friendly but also durable. For now the ones that are used consistently on the exterior of buildings include:

- Bullseye 1-2-3 Zinnser (primer)
- For bare wood UCSB uses an Alkyd primer (oil base)
- For exterior paint UCSB uses elastomeric or 100% acrylic for stucco and concrete
- For trim Frazee or Dulux (semi-gloss water base)
- UCSB uses water base or urethane caulking

Our Lead Painter works with his vendors to find the most environmentally friendly products. If there are better choices than the above UCSB is willing to experiment and change their standard paint practices.

### **Impact of Roof Maintenance:**

UCSB's facility staff does roof maintenance on campus. The only equipment used to clean the roofs is brooms, rakes, and shovels. All the work is done by manual labor. The cleaning process involves clearing all the drains and roof of debris and particle matter, and sweeping up dirt so it does not turn into mud during a rainstorm. Santa Barbara's weather is so mild that the campus does not have too many problems

associated with clogged drains and dirty roofs. The cleaning of campus roofs occurs on an as needed basis, approximately one to two times per year.

## **Housing & Residential Services (H&RS) Grounds Management (insert campus map of this area)**

### ***H&RS WATER***

- Approximately 50% of H&RS irrigation is potable water (Can we insert the current irrigation map here to show our benchmark? – Perrin has a copy of this)
- Present excess water is drained to water retention ponds and holding areas in several of our properties
- H&RS existing water conservation plan (INSERT THEIR PLAN HERE) outlines several ways that they are focusing on saving water, including reduction in turf, incorporation of recycled water, and advanced central irrigation programs.

### ***H&RS PLANT MATERIALS***

- Several turf areas have been replaced with plants that require less irrigation. Astroturf and porous hardscape \*(e.g., decomposed granite) have been installed in limited areas, with possible future sites still being explored
- High water use plants are replaced in several areas with plants requiring less water.
- Demonstration gardens highlight new plants and plant groupings that show possible ways of incorporating water conserving plants while still getting color and style in the garden
- Green waste is being removed and recycled to provide mulch and compost to local users

### **H&RS STAFFING/MAINTENANCE (Quality of life at work )**

- Housing and Residential Services (H&RS) Grounds is utilizing equipment such as tailgate lifts, skid steer loaders, lightweight backpack blowers, and ergonomically-friendly tools to reduce injury and strain to staff throughout their daily work
- Minimal (can you define minimal? Can we also set a goal of going to zero?)to zero exposure to pesticides and hazardous materials in the workplace

Safety training that provides directives for staff to take care of their health and well-being – both at work and during their daily lives.

### ***Impacts of H&RS Custodial Services***

Need to add information here

### ***Impacts of H&RS Facilities Upkeep***

Need to add information here

(CCBER) Management (insert a map showing CCBER's area?)

### **CCBER Water**

- Minimal water is used during the first year to get native plants established that are appropriate for the water regime at the site
- Storm water is handled such that it provides multiple benefits – e.g. removed from site, filtered into soil, supporting biodiversity, aesthetics.

### **CCBER Plant material**

- All plant material is derived from locally native seeds and propagules and installed in sites with the appropriate environmental conditions to support the plants while also maintaining aesthetic considerations, views, etc.
- Plants are grown in organically based nursery with no inorganic fertilizers or pesticides. Materials are recycled, e.g. pots and soil.

### **CCBER Staff Quality of life**

- Minimal to zero exposure to pesticides and hazardous materials in the workplace
- Employees have opportunity to participate in bi-weekly exercise program with Eric
- Safety training that provides directives for staff to take care of their health and well-being – both at work and during their daily lives
- Fun and supportive work environment with consensus decision making.
- 1. Equipment and Energy use
  - Staff of 12 CCBER have 3 university vehicles (can we set a goal to be emission-free with these vehicles?) and 1 re-chargeable gator
  - Majority of work is done by hand – weeding, watering, planting without the use of mechanized equipment.

### **Mission Statement:**

**Our team still needs to meet to confirm this**

### **Long Term Vision:**

**Our team still needs to meet to confirm this**

### **Goals (measurable or numerical data)**

#### Short term (0-1 years)

1. Gather and assessing missing data for this section of the campus sustainability plan
2. Set reduction targets for potable water use and budget for achieving these goals

Intermediate (1-5 years)

3. No potable water to be used on the grounds
4. Ground water to first be locally derived to the degree possible-supplemented by recycled water
5. Plant Materials
  - All un-necessary turf to be discontinued and replaced with low-maintenance, potentially low-water ground covers, Astroturf or porous hardscape.
  - Those taxa desired for teaching purposes that have high water requirements are to be clumped in limited area.
  - Exotic taxa are to be clumped towards the center of campus in “developed zones” while the native taxa are to be placed at the periphery, forming a broad buffer between exotic taxa and the larger natural setting of the campus (per original landscape plan).
  - Invasive exotics (desired for teaching) are to be planted sparingly in the campus core, and then within contained spaces (e.g. courtyards).

6.

Long Term (5-10 and 10-20+)

7. All water to be garnered within the campus footprint for first use, cleaned, and re-use.
8. **Our team still needs to meet to define this**
9. **Our team still needs to meet to define this**

**Barriers:**

**Our team still needs to meet to decide this**

**Action Items:**

**Our team still needs to meet to decide this**

Chair Contacts:

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# Change Agent Group Goals-Academic and Research

List of Current Sustainable Practices: **Please fill in**

## **Mission Statement:**

To educate and facilitate interaction between faculty, staff, students, and community. We will create, disseminate, and assess knowledge using sustainable practices through classroom instruction, research, service learning, and visual and performing arts.

## **Long Term Vision:**

Through education, research, dissemination of knowledge, and service learning all faculty, staff and students in every department and division at UCSB will employ fully sustainable classroom and curriculum practices. UCSB will become a leader and innovator in developing instructional techniques and practices to become a fully sustainable campus and will become a role model for all educational institutions.

**Goals** (measurable or numerical data):

### Short term (0-1 years)

10. Support Recommendations of Environmental Task Force
11. Complete Assessment of what is being done
12. Modify Instructional Development mini grant program to include sustainability
13. Instructional improvement grants
14. Work with Development Office to identify outside funding
15. Identify opportunities to develop curriculum materials
16. Facilitate the connection between course materials and what is needed in the community
17. Ecological restoration internship model
18. Energy modeling
19. Have a presentation from Perrin on how to LEED EB certify and from Scott on purchasing for staff and faculty
20. Internships for students to work on LEED EB (utilize Katie)
21. Incentive in freshman seminar program on sustainability
22. Web access
23. Faculty meetings for quarter
24. Access and knowledge to this information; effective access and dissemination campaign
25. Using environmental task force's recommendations on outreach
26. Facebook example; blog
27. Define outreach models

28. Identify current champions
29. Sustainability Conference
30. Solidifying the Office of Sustainability as a focal point; via funding and housing
31. Article in 93106; publicity
32. Work sustainability into orientation program
33. Staff Education/training (Scott Mackenzie is doing this)
34. Environmental Marketing in the bookstore (already doing)
35. Student-led courses in sustainability (already doing)
36. Statement into Academic Plan 2005, work into cluster hire sustainable faculty for global, enviro, and service learning?
37. Tours – orientation tours, publicizing the Bren tour, Girvetz LEED EB
38. Meet with Counseling and Career Services about sustainable career fair and options for graduating seniors
39. Working with existing educational outreach programs such as Kids in Nature
40. Encourage participation from academics at the June 25-28, 2006 UC/CSU/CCC Sustainability Conference

#### Intermediate (1-5 years)

1. Conference/Colloquium on Sustainability (2year)
2. Develop a proposal for the specialization of sustainability (interdisciplinary PHD, undergraduate degree emphasis) and approved
3. More Faculty specialized in sustainability, evenly distributed throughout the university (cluster hiring)
4. 10 departments/programs sustainability included in lower division courses
5. Sustainability integrated in daily campus activities; creating a sustainability culture
6. TA training?
  - a. Yearly Campus Sustainability Day in the Fall

#### Long Term (5-10 and 10-20+)

1. Have specialization running (interdisciplinary PhD and undergraduate degree emphasis)
2. 80% departments/programs sustainability included in lower division courses
  - a. Integrating into next version of Academic Plan

Chair contacts:

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Jennifer Thorsch, [thorsch@lifesci.ucsb.edu](mailto:thorsch@lifesci.ucsb.edu)

# Change Agent Group Goals-Communications

List of Current Sustainable Practices: **Please fill in**

## Mission Statement:

Provide an effective conveyance of information using minimal amounts of resources.

## Long Term Vision:

- All equipment is infinitely upgradeable
- All paper usage is closed loop (fully recyclable or biodegradable)
- Efficient avenues of communication- new forms (e.g. podcasting, radio)  
old forms- person to person

## Goals (measurable or numerical data)

### Short term (0-1 years)

- 1) Initiate a program of Campus Sustainability presentations, working with change agents to develop these, either as broad views of the campus plan or especially focused on their areas in the campus community. Seek out both the groups and the appropriate methods of information.
- 2) Develop a universal PowerPoint to assist all change agents giving presentations around campus. It will be downloadable from the website. A CD/DVD will be developed for use as a self-contained presentation that can be used anywhere that is properly equipped. PowerPoint should be completed and posted on the web by next week. DVD TBD.
- 3) Change campus printing purchasing and policies:
  - Reduce paper use – ask departments to analyses needs for paper, both within the dept. and for publications, meet with publishers (Arts and Lectures, Presenters, Development) towards this end.
  - Effect purchasing policies to use only sustainable harvested and recycled content papers, environmentally friendly inks.
  - Work with purchasing on encouraging companies to provide infinitely upgradeable or returnable machines (e.g. computers, printers, etc.)

Intermediate (1-5 years) **please fill in**

- 41.
- 42.
- 43.

Long Term (5-10 and 10-20+) **please fill in**

- 44.
- 45.
- 46.

**Barriers:**

- Barriers
  1. Cultural Change required
  2. Concerns for quality and appearance (i.e. brochures and promotional material)
  3. Contracts in place for printing
  4. No policies in place for publishing guidelines
  5. Desire to read a hard copy rather than electronic
- Leverage Points
  1. Cost Savings- printing less, more on-line activity, mailing less, delivering less
  2. Educating about environmental impacts, role of UCSB
  3. Promoting the University role with regards to sustainability in the community a sense of pride
  4. Opinion leaders

**Action Items:** **please fill in**

Chair Contact:

Barbara Hirsch, [Hirsch@library.ucsb.edu](mailto:Hirsch@library.ucsb.edu)

# Change Agent Group Goals- Grounds

## List of Current Sustainable Practices:

1. This is the Facilities Management (FM) plan for their areas.

## **SS 1.1f & 1.2: Plan for Green Site and Building Exterior Management:**

The UCSB's Grounds department is responsible for 800 acres of landscape and hardscape, irrigation, erosion control, and integrated pest management. The campus is divided into 4 zones. All grounds staff maintains their allocation in the same fashion but each team is zone specific. Grounds staff start at 4 a.m. and do the majority of their work prior to the arrival of many university representatives and students.

## **Maintenance Equipment:**

- The campus is divided into 4 zones, each zone has 3-4 groundskeepers and each person uses one of the following: eco-power blower, gas powered lawnmower, gas powered edger, or a mulch mower. All of the above equipment meets Cal EPA's CARB Phase II rating.
- All power tools are used before 7:45 am therefore maintenance does not affect classes and traffic on campus.
- Grounds workers are provided with and required to use protective gear while working.

## **Plantings:**

UCSB chooses xerophytic plants that are adapted to living in a dry arid habitat. The university also plants peninsula natives on the north bluff of campus and California natives on the east bluff. These plantings provide habitat that encourages wildlife and native genotypes. Other plantings on campus are:

- Hedges that require no additional water than what is provided naturally in our climate. These include raphiolepis and westringia salvia, which thrive in the minimal amount of rainfall Santa Barbara receives.
- UCSB's Grounds incorporates more drought tolerant native/adaptive plants, such as ceanothis and lantana. These plants use little water and require minimal maintenance.
- UCSB's Grounds also plants trees that require little water once stabilized. Examples of these trees are: Tipuana, Coast Live Oak, and Tristania conferta.
- Campus is installing more artificial turf for playing fields. Playing fields with sod require more maintenance, fertilizer, and water. With artificial turf

neither water nor fertilizer is applied, and the field can be played on year-round because the artificial turf does not wear as quickly as regular turf.

### **Animal and Vegetation Plant Control:**

- Use worm glo castings to prevent white fly
- Vinegar mixed with water to kill white
- Caffeine tea to kill ornamental pests
- Gradual removal of ivy and juniper to reduce rats, raccoons, and other rodents. This plays a part in our Integrated Pest Management program (see IPM policy attached in IEQ credits 10.4 and 10.5.)

### **Landscape Waste:**

- Green Waste is stored at a central location on campus, is picked up, mulched locally off campus, and returned to use on our landscape.
- Tree trimmings are mulched and then used for mulching landscapes.
- Campus has a schedule for mowing and clippings are recycled. UCSB thatches grass. During the hotter months when UCSB cuts the grass it “sweeps one, leaves one”, meaning when we cut the grass we leave the cuttings in the grass, and when the next cutting happens they sweep the grass up. Leaving grass clippings on the lawn also aids in returning nutrients to the soil, especially nitrogen, as grass clippings are nitrogen rich. This results in a reduced use of fertilizers.

### **Irrigation Management:**

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### **Fertilizers:**

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- 90% sulfur prill to balance soil pH
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- Corn gluten used to inhibit weeds
- Lawns use Turf Supreme 25 Nitrogen/5 Phosphorus/5 Potassium- the only lawns that receive fertilizers are the playing fields. Playing fields only get fertilized three times per year and monitors the phosphorus run off levels. The campus is also incorporating more artificial turfs for the high use

areas, which reduces both fertilizer use and water consumption. Eventually campus will go to all artificial turfs for all playing fields.

The Grounds Department has phased out the use of harmful pesticides and now uses bio-rational herbicides. The campus no longer uses Roundup, which affects sensitive marine invertebrates, and instead uses a clove oil based material called Matran 2, which is certified by the Organic Materials Review Institute (OMRI). Another product used on campus is Alldown, which is a vinegar-based material that is also OMRI certified. Alldown is a non-selective weed and grass herbicide that is considered a breakthrough in environmentally responsible vegetation management. This product is not harmful to earthworms or beneficial bacteria and fungi. Unlike Roundup and other herbicides that affect plant growth regulation, all of these bio-rational herbicides have a physiologic mode of action that causes cellular disruption rather than a biologic mode of action against which weeds can build up genetic resistance.

UCSB also uses a Waipuna system, which is an organic hot foam weed control system. The Waipuna system uses 203-degree water assisted by heat-retaining foam made from corn and coconut sugar. This foam material is 100% natural, non-toxic, and fully biodegradable. Organic Hot Foam method is applied to unwanted weeds, killing them instantly.

### **Trainings for Grounds Staff:**

To keep the landscape thriving our Grounds Superintendent requires that all grounds staff educate themselves about the plants they maintain within their zone. The Director and Superintendent of Grounds provide the training in-house.

The Ground Managers have routine tests to ensure that grounds staff fully understand what their plants require to survive.

Grounds are also aware of the importance of maintaining the landscape in a sustainable manner. They attend an additional class entitled the “Green Gardener,” which is offered by the County of Santa Barbara. The Director of

Grounds promotes this class to the grounds staff and offers incentives to encourage staff attendance.

### **Cleaning of Building Exterior:**

Buildings on campus range in age. Some buildings were built in the early 50's while others just recently finished construction. The Cleaning process for the building exteriors is done in a few steps:

3. Perform a test to see if there are contaminants (i.e. lead paint)
4. If any contaminants are found, special steps are taken during the cleaning. When water is sprayed on the building to wash off particle matter, catch basins are used to contain run off. (If tests contain lead they do not water blast, instead they encapsulate the lead with primer prior to painting.)
5. Do we use phosphate cleaners

### **Paints and Sealants used on Building Exterior:**

Just like selecting interior paints, the UCSB paint team is always looking for environmentally friendly exterior paints and is constantly testing coatings to find ones that are not only environmentally friendly but also durable. For now the ones that are used consistently on the exterior of buildings include:

- Bullseye 1-2-3 Zinnser (primer)
- For bare wood UCSB uses an Alkyd primer (oil base)
- For exterior paint UCSB uses elastomeric or 100% acrylic for stucco and concrete
- For trim Frazee or Dulux (semi-gloss water base)
- UCSB uses water base or urethane caulking

Our Lead Painter works with his vendors to find the most environmentally friendly products. If there are better choices than the above UCSB is willing to experiment and change their standard paint practices.

### **Snow Removal:**

N/A in Santa Barbara

### **Roof Maintenance:**

UCSB's facility staff does roof maintenance on campus. The only equipment used to clean the roofs is brooms, rakes, and shovels. All the work is done by manual labor. The cleaning process involves clearing all the drains and roof of debris and particle matter, and sweeping up dirt so it does not turn into mud during a rainstorm. Santa Barbara's weather is so mild that the campus does not have too many problems associated with clogged drains and dirty roofs. The cleaning of campus roofs occurs on an as needed basis, approximately one to two times per year.

## **2. Housing Grounds Management**

### **WATER**

- Approximately 50% of our present irrigation is potable water
- Present excess water is drained to water retention ponds and holding areas in several of our properties
- Our existing water conservation plan outlines several ways that we are focusing on saving water, including reduction in turf, incorporation of recycled water, and advanced central irrigation programs.

### **PLANT MATERIALS**

- Several turf areas have been replaced with plants that require less irrigation. Astroturf and porous hardscape \*(e.g., decomposed granite) have been installed in limited areas, with possible future sites still being explored
- High water use plants are replaced in several areas with plants requiring less water.
- Demonstration gardens highlight new plants and plant groupings that show possible ways of incorporating water conserving plants while still getting color and style in the garden
- Green waste is being removed and recycled to provide mulch and compost to local users

### **STAFFING/MAINTENANCE (Quality of life at work )**

- H&RS Grounds is utilizing equipment such as tailgate lifts, skid steer loaders, lightweight backpack blowers, and ergonomically-friendly tools to reduce injury and strain to staff throughout their daily work
- Minimal to zero exposure to pesticides and hazardous materials in the workplace
- Safety training that provides directives for staff to take care of their health and well-being – both at work and during their daily lives.

## **3. CCBER Management**

## **2. Water**

- minimal water is used during the first year to get native plants established that are appropriate for the water regime at the site
- Storm water is handled such that it provides multiple benefits – e.g. removed from site, filtered into soil, supporting biodiversity, aesthetics.

## **3. Plant material**

- All plant material is derived from locally native seeds and propagules and installed in sites with the appropriate environmental conditions to support the plants while also maintaining aesthetic considerations, views, etc.
- Plants are grown in organically based nursery with no inorganic fertilizers or pesticides. Materials are recycled, e.g. pots and soil.

## **3. Staff Quality of life**

- Minimal to zero exposure to pesticides and hazardous materials in the workplace
- Employees have opportunity to participate in bi-weekly exercise program with Eric
- Safety training that provides directives for staff to take care of their health and well-being – both at work and during their daily lives
- Fun and supportive work environment with consensus decision making.

## **4. Equipment and Energy use**

- Staff of 12 CCBER have 3 university vehicles and 1 re-chargeable gator
- Majority of work is done by hand – weeding, watering, planting without the use of mechanized equipment.

## **Mission Statement:**

Mission of the grounds committee for change is to make sustainability one of the key decision making components for grounds design and management. Sustainability includes considering all inputs to grounds relative to their costs and benefits to the earth and the local ecosystem. Increase biodiversity and self-sustaining systems while reducing dependence on fossil fuels and other extracted minerals, having zero pollution of toxins or non-recyclable materials and increasing community education about the importance of living sustainably by using locally available water resources and returning it to the system as purely as it came in. Socially the grounds should facilitate student education, work and play while supporting the staff through living wages and local business opportunities. Communication within the management team should be positive and supportive.

## **Long Term Vision:**

### **WATER**

- No potable water to be used on the grounds

- Grounds water to first be locally derived (rainfall) to the degree possible
- Supplemented by recycled water
- Storm water to be addressed sustainably in all new construction – e.g. not in pipes, but through wetlands, biofiltration with natives, storage and re-use, etc.

## **PLANT MATERIALS**

- All un-necessary turf to be discontinued and replaced by low maintenance, potentially low-water ground covers, Astroturf or porous hardscape \*(e.g., decomposed granite)
- Larger plantings to be dominated by low-water, low maintenance taxa possessing year-round beauty
- Those taxa desired for teaching purposes that have high water-requirements are to be clumped in limited area.
- Exotic taxa are to be clumped towards the center of campus in the “developed zones”, while native taxa are to be placed at the periphery, forming a broad buffer between exotic taxa and the larger natural setting of the campus (per original landscape plan).
- Invasive exotics (desired for teaching) are to be planted sparingly in the campus core, and then within contained spaces, e.g., courtyards.

## **STAFFING/MAINTENANCE**

- Grounds will seek to reduce mechanized maintenance procedures, and base those necessary upon renewable energy sources.
- In developing low maintenance landscape, Grounds will seek to create a smaller, but better paid work force.
- Grounds will seek to use a portion of its lands as a garden to provide food for food services. These gardens will be maintained by grounds staff in return for which they shall be allowed access to produce for personal consumption.

## **EDUCATION**

- Signage will describe sustainability practice to the passing public.
- Grounds will participate and encourage both public education by outreach and the use of its resources in campus courses.

## **Goals**

### **Short term (0-1 years)**

1. Define goals for baseline measurements and develop mechanism for those measurements to be taken. Categories include:
  - a. Irrigation water type (reclaimed vs potable) and use (quantity) by area

- b. Energy use (gasoline and other fuels) by Housing, FM, CCBER
  - c. Records of chemical use (herbicide, pesticide, cleaning)
  - d. Coordinate with purchasing and vehicle task team on measurements of sustainability of vehicles and office equipment/materials
2. Group will support student and intern projects (e.g. Bren, ES, TGIF interns) to evaluate sustainability of our practices – especially turf vs artificial turf, reclaimed water benefits and impacts (e.g. nutrient loading of lagoon, boron accumulation), total landscaping water use assessment and rainfall storage options
  3. Identify opportunities to inform people about current sustainable practices. For example signs in CCBER areas and signs about reclaimed water use.

### **Intermediate (1-5 years)**

1. Implement baseline monitoring of factors defined in 1<sup>st</sup> year.
2. GIS campus landscaping by category so that planning can be more easily managed. Coordinate with planning department's GIS program.
3. Evaluate quality of life of staff of H & RS, FM and CCBER with a survey in coordination with social science department of University.
4. Coordinate with Planning department so that all storm water is handled sustainably as new buildings are constructed, e.g. through biofiltration, wetlands, permeable pavement, temporary storage and other non-pipe options in order to use water to bring life to campus and to reduce run-off, erosion and pollution to adjacent wetlands (lagoon, slough and ocean).
5. Initiate a project assessing the relative sustainability of native dominated landscaping opportunities (e.g. Manzanita) with traditional landscaping (e.g. Anacapa, FT or other dorm on campus).
6. Initiate project to assess item # 2 in the 0-1 year goals.

### **Long Term (5-10 and 10-20+)**

47. People's attitudes are enlightened such that they see the value in using natural water sustainably and appreciated landscaping with locally adapted plants

48. University adopts official policies to support sustainable grounds choices for water, plants, landscaping plans, incorporation of natural features, retrofitting of old storm drain systems.
49. All vehicles and equipment used by grounds personnel (H&RS, FM, CCBER) are fueled sustainably with naturally generated fuels.

**Barriers:**

1. Costs of converting to electric vehicles (building solar panels and waste of current vehicles)
2. Attitudes about AstroTurf and about green lawns
3. Addressing multiple uses of lawns and how to fulfill sustainably
4. Attitudes about bioswales and other more sustainable ways to use water on campus.

**Action Items:**

Evaluate sustainability of lawns versus AstroTurf versus other alternatives that fulfill needs for site – e.g. multiple uses, open space, purely aesthetic, athletics.

Evaluate current water use by volume and source (reclaimed, natural, potable)

Evaluate inputs for maintenance at Manzanita – both grounds and CCBER areas relative to those around San Nicholas/Anacapa area

Evaluate potential long term impacts of reclaimed water – boron, sodium, increased N – on soil qualities and toxicity as well as N-richness leading to increased weeds and potential side effects of having to control them.

What plants can survive solely on rainfall that falls on site?

Quantify vehicle use, fuel use by H & RS as well as FM and CCBER

Quantify use of toxic substances. (pesticides, herbicides, cleaning policies, disposal of batteries, etc. materials)

Evaluate quality of life components of staff of all three organizations

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# Change Agent Group Goals-Procurement

**Mission Statement:** Enabling the acquisition of resources in a manner that supports the UC education and research mission with a goal of innovation, support of the invention of renewable and bio-based systems, and new technologies that meet or exceed all sustainability goals and enables the positive transformation of markets

## List of Current Sustainable Practices:

- Electronic Processing
  - Flex-Card
  - REX, PORs (existing electronic systems)
  - CATS: Capital Assets Tracking System
  - WebTV: electronic travel voucher system
  - Direct deposit
- Commodities:
  - Campus Custodial staff(s) using Green Seal certified chemicals, 100% recycled content paper (% needed)
  - FM, HR&S using carpet tiles (% needed)
  - Campus procurement of recycled content paper (% needed)
- Policy:
  - All systemwide RFPs & contracts now incorporate Sustainability principles
  - Education and Training program developed with continual improvements

## Long Term Vision:

- Cohesive and integrated electronic procurement system
- Standardized coding across campus and UC system
- Integrated accounting procedures with efficient controls
- UC sharing processes (e-bay concept) that maximizes use and reuse
- Bio-based processing systems (powered by renewable energy sources)
- Bio-based machines (reusable, compostable, consistently remanufactured, reprocessed)
- Energy resources are 100% clean, renewable, and locally generated
- Zero-waste (everything either recycled, composted, or reused/reprocessed/remanufactured locally)
- Positive-impact on human health and social conditions
- Cradle to cradle, and restorative business practices; biomimicry

- Restorative economics factored into all purchasing decisions
- Zero emissions generated through travel/transport of goods
- Purchasing supports UC research, innovation, and invention of renewable and bio-based systems, and new technologies that drive market forces and are rapidly integrated within UC

**Goals** (measurable or numerical data)

**Short term (0-1 years)**

50. Electronic commerce:

- Catalogs (elimination of decentralized hard copies)
- Process payments: Encourage campus to do Electronic Data Interface (EDI) with vendors (UCSB/IS&C—vendor relationship)
- Paperless Travel, including back-up documentation and signatures (Video conferencing)
- Begin implementation of e-signatures
- Flex-card/GUS
- Website with interface between campus and system-wide

51. Commodities:

- Office equipment and supplies
  - Energy Star
  - Phase in recycled content/sustainable design
  - Phase out virgin products/non-recyclable products
- Information technology
  - Energy Star
  - Account for electronic waste in upfront purchase
- Operations and Maintenance
- Carpet

52. Policy/Education & Outreach:

- 100% Energy Star utilization written into contracts and enabled in current machines
- Packaging (recyclable, rapidly renewable, bio-based, practical & effective)
- Creation and pilot of matrix, criteria, and guidelines for more sustainable procurement (emphasis on vendor selection/qualification)
- Alignment of goals for strategic initiatives (system wide, campus, department understanding, requirements)
- Marketing, signage, and visual schematics to integrate efforts across campus (logos, branding, etc.)

**Intermediate (1-5 years)**

1. Electronic Commerce

- a) 100% e-commerce—paperless system

- b) E-signatures for all forms
- 2. Commodities
  - a) Phase out non-recyclable products (50%)
- 3. Policy/Education & Outreach
  - a) Continuous improvement and utilization of matrix, criteria, and guidelines for more sustainable procurement (emphasis on vendor selection/qualification)
  - b) Campus specific e-bay/reuse of surplus sharing system

### **Long Term (5-10 and 10-20+)**

- 1. Commodities:
  - a. All vendors certified “sustainable”
  - b. All products recyclable, reusable, can be refurbished: effective end of life programs
  - c. UC wide e-bay/reuse of surplus sharing process
- 2. Policy/Education & Outreach:
  - a. Restoration incorporated into economic strategy

### **Barriers:**

- 1. Funding
- 2. Buy-in across (decentralized) campus/UC system
- 3. Duplication of efforts: *reinventing the wheel*
- 4. Communication
- 5. Time
- 6. Apathy/education and awareness
- 7. Lack of incentives
- 8. Risk-adverse environment
- 9. New learned behavioral changes: *resistance to change*
- 10. Conflicting messages: *inconsistency of understanding surrounding Sustainability*

### **Action Items:**

- Strategic Sourcing commodity teams: *Systemwide leverage in the marketplace*
- Standardized language, criteria, certification standards
- Summer student orientations: *presentation of sustainable purchasing at new student orientation*
- Educational seminars/workshops (campus & system wide)
- Vendor catalog system
- Website (UCOP Strategic Sourcing Sustainability section, sustainability.ucsb.edu) resource links, integration
- OACIS (HR): *require that sustainability is addressed (templates included) in all job descriptions*

- Modify employee performance review
- Purchasing criteria and guidelines (policy matrix, LEED standards)
- Modify travel system to utilize e-signage and receipts

**Other**

- Modify system to allow easy/quick access to end users
- Purchasing system: *modify to include vendor catalog and information regarding vendor matrix with sustainability focus (flexcard)*
- Performance review form modified to include sustainability section
- Addition of sustainability information in General catalog (move this to on-line or increase cost to make hard-copy less desirable)

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# Food-UCEN and Housing

## Sustainability Food Program Goals – UCSB Residential Dining Services

Update as of 2/23/06

Define Sustainability goals for UCSB Residential Dining Services - evaluating all food systems for ways to move towards 'Closed Loop' systems.

### Food processes and systems

- a. Bid and Purchasing Specifications---increase purchase of local and organic foods, require suppliers to have sustainable programs
- b. Ordering----Delivery----Receiving---Storage
- c. Production----recipe preparation----consider taste and nutritional quality of product prepared and cooked
- d. Service and presentation---off site catering---dishware, ice, disposables, utensils
- e. Cleaning---Dishwashing---pot washing---chemicals, disposals, and energy
- f. Disposal of waste---prep waste, packaging, leftovers---garbage, compactors, recycling, composting
- g. Uniforms, linens, towels---laundering choices, chemicals----conservation
- h. Equipment and supplies---specifications---Energy Star
- i. Facility design – renovations (\*cross over to Facility and Building Design)
- j. Utilities---Operation of building and maintenance---power, energy, solar, lighting, hoods, restrooms (\*cross over to Operations)

### Dining Services' Goals

1. Include Sustainability in the Basis for Award for 100% of all Food Contracts within 2 years
2. Provide as much local and sustainable produce (within the Tri Counties) as feasible (25-50%) working with CAFF (CA Alliance of Family Farms) and other local suppliers and farmers
3. Increase purchase of certified organic products (5% in 1 year – 25% in 5 years) and 'verified' sustainable grown meat, poultry, fish and dairy (15% in 5 years)
4. Convert disposables in all facilities, Catering and Concessions to biodegradable products within 2 years
5. Compost disposables and other post consumer waste within 5 years
6. Provide green chemicals for cleaning facilities within 5 years
7. Purchase products in bulk packaging as feasible

8. Educate 100% of dining staff within 2 years for ongoing evaluation of systems and processes to improve nutrition and quality, reduce waste and packaging and understand the Sustainability Goals
9. Include Sustainability Goals in Dining website overview within 1 year and in all staff job descriptions within 5 years
10. Evaluate all equipment for energy savings as criteria for purchase and renovation and reduce cooking and cleaning energy use
11. 80% of customers aware of food quality, local source and conservation methods
12. 80% of faculty and administration aware of food quality, local source and conservation methods
13. Support distribution in California and nationwide of sustainable grown food and proactive in seeking verification/certification of criteria: a) reduced pesticide use b) soil and water conservation c) safe and fair working conditions d) wildlife habitat conservation as well as minimized transportation and energy use.

## **Change Agent Group Goals- FOOD (UCEN)**

**List of Current Sustainable Practices:** Please fill in

**Mission Statement:** Please fill in

**Long Term Vision:** Please fill in

**Goals** (measurable or numerical data)

Short term (0-1 years)

1. *Use green cleaning chemicals*
2. *Organic and Locally Grown Food Selections*-Paterno currently has organic dough, pizza sauce, and pasta. The short-term goal is to add other organic items as they become available in commercial sizes. The new Arbor store also has a small supply of organic options in a variety of both refrigerated and non-refrigerated products.

3. *Composting*- By the end of February, in conjunction with Marborg, we will compost both coffee grounds and green waste.
4. *Testing Compostible Flatware and Disposal Ware*- In the process of doing a compost test on flatware and disposable paper-like products that are made of corn, potato, and sugar beet. Mark Rousseau will monitor a test site in housing.
5. *Vendor Blanket Pos*-All 200 purchase orders to our vendors at the start of the fiscal year will have verbage regarding sustainability, green, organic, etc and the need to partner with vendors that practice

Intermediate (1-5 years) **please fill in**

- 1.
- 2.
- 3.

Long Term (5-10 and 10-20+) **please fill in**

1. *Expanding Organic and Locally Grown Options to all units*
2. *Switching Disposables to Products that Compost*- Working in conjunction with the campus or Marborg to find site for composting all disposable products.
4. *Food Manufacturers*-Getting support from the organic manufacturers to package and provide foodservice products in commercial sizes

**Barriers:** **please fill in**

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# Change Agent Group Goals- Transportation

## List of Current Sustainable Practices:

1. Transportation Alternatives Program(TAP)
  - a. Students
    - i. Students who live two miles from campus that commute to campus by bike, bus, vanpool or carpool are entitled to six courtesy days of parking per quarter
    - ii. Santa Barbara MTD bus passes included in student fees
  - b. Employees
  - c. Pre-tax payroll deduction for vanpool subscriptions and carpool permits
  - d. Access twenty-four hours a day to the Carpool Match Service
  - e. Half price MTD bus passes
  - f. Access to In-Vehicle Parking Meter Technology tailored to allow the use and accumulation of 57 courtesy hours of parking per quarter
  - g. Automatic enrollment in the "Emergency Ride Home Program"
  - h. Chance to win a \$50 gift certificate for the UCSB Bookstore
2. A.S. Bike Shop
  - a. Repair stands, tool loan, and repair instruction (requires current student, staff, or alumni association ID card).
  - b. Compressed air, 24 hours a day, 7 days a week.
  - c. Prompt and accurate repair service on all types of bicycles.
  - d. Thousands of commonly-used bicycle components and accessories.
  - e. Professionally-built bicycles, starting at \$169.
  - f. Special ordering of almost any bicycle component or accessory.

**Mission Statement:** Transportation at UCSB shall evolve to meet the needs of the campus culture and the environment to ensure the quality and long-term survival of all life on Earth.

## Long Term Vision:

### Goals (measurable or numerical data)

Short term (0-1 years)

1. Campus Fleet
  - a. Access to E-85 (85% Ethanol + 15% Gasoline) fueling station
  - b. Access to BioDiesel fueling station with at least 50% renewable content(Only 1 diesel vehicle in fleet, doesn't seem practical)

- c. Create purchasing policies that coincide with our renewable fuel or energy availability and further our sustainable vision i.e. Flex-Fuel Vehicles for new purchase and retrofitting (fairly expensive and contractor must be CARB certified) existing fleet to use flex fuels such as ethanol. Becoming part of the Hydrogen Superhighway both in terms of delivering Hydrogen for Transportation and procuring hydrogen powered vehicles. (Electric Vehicles favored, but if electricity is fossil-fuel generated, emissions still exist)
- d. Waste Stream Management related to campus fleet (Mary Ann Hopkins, PF Recycling, Refuse, very pleased with Fleet's Program)
- e. Built-in Carbon offset fee per gallon charged at the pump when fleet vehicles fill up
  - i. (\$8/MTCO<sub>2</sub>e for AgCert's "Driving Green Program")
  - ii. .009 MTCO<sub>2</sub>e/gal of gasoline
  - iii. \$.072/gal tax on gasoline to offset fleet

## 2. Parking

- a. Fair Pay-as-you-Go Parking Pricing to encourage alternatives to Single Occupant Vehicle Use i.e. each time a vehicle parks on campus its user pays a parking fee. Each time a vehicle is not used the user saves the parking fee. Current Parking Pricing Policy encourages anyone who parks more than once a week to buy a parking permit and Park Every Day. Existing technology such as In-Vehicle Parking Meters or License Plate Recognition, or Pay by Cell Phone could be used immediately to accomplish sustainability goals.
- b. Long Range Development Plan should specify that there will be No net growth in campus parking spaces beyond 2006 levels. All Campus Growth related to parking should be accommodated through Transportation Demand Management (TDM).
- c. Option to purchase voluntary offsets when ordering online campus parking permits.
- d. Offer other alternatives to purchase carbon offsets: Paid for by other aspects of the University OR voluntary donation by campus users perhaps with local campus perks that reduce greenhouse emissions.

## 3. Bicycle commuting

- a. Encourage employees and students to commute by bicycle:
- b. Continued presence of UCSB bike repair shop in a central campus location offering periodic free bike tune-up for bicycle commuters
- c. Offer monthly *Street Skills for Cyclists* training
- d. Shower and Locker facilities for bikers (already available at Robertson Gym, RecCen I & II, Broida Hall and Bren Hall)
- e. Wider distribution of bike and transit maps, and brochures on campus

## 4. Energy

- a. Achieve UCSB's intellectual goals with energy conservation

## 5. Work with the Transportation Alternatives Board

6. Work with the Associated Students BI.K.E.S. committee
  
7. Mass Transit
  - a. Influence Local Transit to meet the needs of UCSB Commuters
  - b. Santa Barbara Metropolitan Transit District
    - i. Increase transit service, esp. 15x Route, possibly others
    - ii. Work with schedules and routes
  - c. Influence Regional and Long Distance Transit to meet the needs of UCSB Commuters
    - i. Amtrak Rail or other commuter rail
    - ii. Coastal Express
    - iii. Clean Air Express
    - iv. Santa Ynez Valley Express
    - v. Greyhound Bus Line
  
8. Cooperation with Goleta, Santa Barbara and County Planners
  - a. Opportunities for "smart corridor" technology
    - i. Maximize existing road capacity by adjusting signal timing and highway access depending upon existing traffic volumes
  - b. Develop recycle-a-bike program
  - c. Participation in local and state grant programs funding improvement projects with local industry mitigation fees i.e. (CREF)
  
9. UCSB Travel Management
  - a. Business Travel
  - b. Athletic Travel
  - c. Expanded use of Video Conferencing and Conference calls to reduce trips by UCSB Administrators to UCOP or other UC campuses
  
10. Human Resources Options
  - a. FlexTime 4/40s, 9/80s and other ways to reduce trips through schedule adjustments (this relates to the work that the HR group is doing)
  - b. FlexWork (this relates to the work that the HR group is doing)
  - c. TeleCommuting (this relates to the work that the HR group is doing)

Intermediate (1-5 years) **please fill in**

53. Bicycle rental fleet for personal and related local trips similar to TAP Rideshare
54. Hire a Bicycle Planner to Design a Bicycle master plan and a for all areas of the campus.
  - a. UC Davis has such a full-time employee at this position
55. A Transportation Planner to develop and implement a Transportation Plan and for UCSB
56. Expanded quantity and distribution of Bicycle lockers on campus for a nominal rate (\$50/year)

57. Incorporate needed Bicycle Infrastructure support into every capital project that creates increased Bicycle traffic or increased need for bicycle parking. This could include Bike Paths, Bike Parking, Showers and Lockers for Bicycle Commuters.
58. Site a Biodigester to create methane and hydrogen as a fuel source for campus fleet vehicles.
  - a. How it works:
    - i. Steam conversion of CNG into Hydrogen (?)
    - ii. Methane energy sold back to grid, lowers net cost to run digester(?).
  - b. Potential CA state grant to cover ~50% of costs from Hydrogen Highway Initiative
  - c. Possible Biodigester contractor - OnSite Power, Inc. - Davis area  
(Need to contact OnSite Power or UC-Davis to get current actual quantity of green waste input and output of CNG and potential amount of Hydrogen)

#### Long Term (5-10 and 10-20+)

- Affordable Housing for 80% of Faculty and Staff within 5-mile biking distance to campus
- Carbon Neutrality for all campus-related Transportation (Fleet, Vendors, Visitors and Commuters)

#### Barriers:

1. Bulk-rate discounts are currently given to those campus commuters who park the most \$1.60/day pretax. Those who park the least pay 5 times the price \$8 per day post-tax.  
In-Vehicle parking meters or License plate Recognition could be used to encourage aggressive trip reduction on the UCSB campus.
2. Parking Rate Payers currently unwilling to pay more for trip reduction strategies to encourage Campus Sustainability.
3. No path(s) exist for FM lot to connect to existing bike paths.
4. Increasing limited funding and resources currently devoted to Sustainable Transportation to and from campus.
5. The perception that the automobile will always be the most convenient mode of transportation
6. Need for additional campus staff, beyond the current two-person staff of the Transportation Alternatives Program Office, with planning positions devoted to the promotion of sustainable transportation

#### Action Items:

1. Built-in Carbon offset fee per gallon charged at the pump when fleet vehicles fill up

- i. (\$8/MTCO<sub>2</sub>e for AgCert's "Driving Green Program"
  - ii. .009 MTCO<sub>2</sub>e/gal of gasoline
  - iii. \$.072/gal tax on gasoline to offset fleet
- b. Work with Driving Green.com to add option to purchase voluntary offsets when ordering online campus parking permits from Parking Website

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# Change Agent Group Goals- Waste

**List of Current Sustainable Practices:** Please fill in

## **Mission Statement:**

Reduce the UCSB waste stream to a minimum using the parameters of the Natural Step system

## **Long Term Vision: Zero Waste**

### **Goals** (measurable or numerical data)

#### Short term (0-1 years)

1. To characterize the waste on the UCSB campus
2. Determine current regulatory framework
3. To evaluate the waste stream characterized in goal 1 with regard to the parameters of the Natural Step system
4. Determine how we'll interact with other groups
5. Re-evaluate intermediate and long term goals in light of information discovered from short term goals

#### Intermediate (1-5 years)

59. Get through the list of low hanging fruit developed in short term goals
60. Assist in identifying and implementing micro-experimentation protocols around campus

#### Long Term (5-10 and 10-20+)

1. (5-10 yrs) 50% reduction in total weight of campus waste
2. (5-10 yrs) Identify and remove or replace the worst (most environmentally problematic) waste leaving campus
3. (10-20 yrs) 80% reduction in total weight of campus waste.

**Barriers:** please fill in

### **Action Items:**

1. Gather all currently available campus waste records.
2. Determine current regulating bodies and current regulation along with future regulated goals
3. Brainstorm ways to determine possible un- or lightly documented waste streams.
4. Determine method to be used to evaluate waste streams based on the Natural Step method.

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