

VALENCIA COLLEGE



SUSTAINABILITY PLAN

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INTRODUCTION

Sustainability is described as meeting the needs of the present without compromising the ability of future generations to meet their own needs (1987, Gro Harlem Brundtland in a report by the World Commission on our Environment and Development).

As an educational institution, Valencia College is aware of its unique position not only to provide by example but to act as a leader for future generations.

Sustainability is not a new concept for Valencia College. The Facilities Department has implemented many sustainability initiatives, including energy efficiency projects, a green building policy for all new buildings, and has replaced traditional cleaning products with green cleaning products.

Valencia College is committed to reducing its carbon footprint while also planning for future growth and development.

We wish to systematically incorporate sustainable practices and decision processes throughout both operations and the academic curriculum and to serve as a catalyst for awareness and education throughout the College community.

This Sustainability Plan focuses on activities, practices, and processes which directly and indirectly impact campus greenhouse gas emissions.

- Operations - buildings, transportation, waste management, dining services, energy, purchasing, grounds

- Education – curriculum, co-curricular education, and faculty/staff development and training

- Administration & Finance – sustainability infrastructure, investment, and planning

- Community Relations & Partnerships – student outreach and community partnerships

The Sustainability Plan reviews commitments and strategies previously suggested and prioritizes them, based on our current staffing, budgets, and areas of emphasis.

OUR PROFILE

In fall of 1967 Valencia Junior College opened in a few portables on West Oak Ridge Road in Orlando. In 1971, we moved to our first permanent location on what has become West Campus and the name was changed to Valencia Community College. In 2011, we changed our name to Valencia College.

Valencia College is the second largest 2-year college in Florida, after Miami-Dade College. Over 40,000 students attend classes each year (Fall 2011 42,987 on all campuses).

There is no typical Valencia College student. Students differ considerably in ethnic, social, and economic backgrounds and their educational goals. Most students reside in the Orange, Osceola, or Seminole Counties. Our campus does not operate residential housing and is essentially a commuter campus. Students typically work full or part time and attend college on a part time basis.

The college offers a two-year A.A. parallel program that prepares students to transfer to an upper-division college or university; college-preparatory courses that help first-year students excel; and technical (A.S.) programs and continuing education courses that prepare students to meet the needs of business and industry.

The University of Central Florida (UCF) operates joint buildings with Valencia College on two campuses (West and Osceola), and offers 15 UCF undergraduate degrees. Valencia offers two bachelor's programs: Radiologic and Imaging Sciences and Electrical and Computer Engineering Technology.

Valencia College was ranked the top community college in the nation for 2011-2012 by the Aspen Institute, a Washington educational and policy studies center. Aspen chose Valencia as the inaugural winner based on the strength of its graduation and transfer rates, especially among minority students, as well as its workforce training programs which boast high job placement rates.

Valencia College's Six Campuses

Valencia College operates six campuses and centers in Central Florida's Orange and Osceola counties.

- The West Campus, currently with 17 buildings, has been located since 1971 on 180 acres. Three LEED Gold buildings were constructed by 2010 and the newest building is designed to Green Globes standards. The campus encompasses considerable green space and a natural sinkhole lake, Lake Pamela, that is part of the Shingle Creek watershed.
- East Campus is second oldest of Valencia's campuses, having opened in 1975, on 94.6 acres adjacent to the Little Econlockhatchee River. It has 10 permanent buildings encompassing 793,325 square feet. The largest, Bldg 4 housing the library, is 100,573 square feet. Since the campus has no room for new buildings, retrofits are being carried out, guided by the LEED Existing Building Operations and Maintenance (EBOM) process.
- The Criminal Justice Institute (CJI) opened in 2006 on 58 acres near the East Campus. It is a 77,000 square foot, state-of-the-art training facility.
- Winter Park Campus first opened in 1986 as the Winter Park Center in a strip mall. The current building was opened in 1998 on a new site that is a little over an acre. The building was expanded to its current size of 51,079 square feet.
- The Osceola Campus was first opened with temporary buildings in 1992 on 100 acres. The first of the four permanent buildings was completed in 1997. Total square footage of the permanent buildings is 339,473, including the newest building which is 150,000 square feet and will be certified under the USGBC LEED rating system.
- The Lake Nona Campus has been built on 23 acres adjacent to Lake Nona High School and opened in fall 2012. The four story building is about 90,000 square feet and is certified under the Green Globes green rating system.

The college also owns two buildings at the Sand Lake Center, the Downtown Center, McCoy Center, a new property in MetroWest, and property in Horizons West.

Our Participation

Valencia College maintains membership or participation with several organizations specifically focused on sustainability in higher education, including the American College & University President's Climate Commitment (ACUPCC), Association for the Advancement of Sustainability In Higher Education (AASHE), and Sustainability Education and Economic Development (SEED), which is part of the American Association of Community Colleges. The Educational Alliance for Sustainable Florida (EASF) is a Florida higher education consortium in which we are a participant.

Additionally, because many organizations are incorporating sustainability into their existing structure, several of the College's memberships have elements of sustainability including Association of Physical Plant Administrators (APPA), National Association of University Business Officers (NACUBO), and Association of Florida Colleges (AFC).

Valencia College is a member of the United States Green Building Council (USGBC) and also an U.S. EPA Energy Star Partner.

OUR COMMITMENT AND PLANNING TOOLS

American College & University President's Climate Commitment

The American College & University Presidents' Climate Commitment (ACUPCC) is a high-visibility effort to address global climate disruption undertaken by a network of colleges and universities that have made institutional commitments to eliminate net greenhouse gas emissions from specified campus operations, and to promote the research and educational efforts of higher education to equip society to re-stabilize the earth's climate.

Valencia College President Sanford Shugart signed the ACUPCC making Valencia College a Signatory in June 2009.



Also joining in 2009 was Hillsborough Community College, the only other Florida 2-year school that has signed the ACUPCC so far.

Dr. Shugart's June 2009 pledge through the ACUPCC was:

- Within the first two months after signing, establish an institutional structure to oversee the development and implementation of the college's program to comply with ACUPCC.
- Within one year of signing, complete a greenhouse gas emissions inventory.
- Within two years, develop an institutional action plan for becoming climate neutral, which will include:
 - Actions to expand research or other efforts necessary to achieve climate neutrality.
 - Take immediate steps to reduce greenhouse gas emissions with tangible actions.
 - Integrate sustainability into the curriculum and make it a part of the educational experience.
 - Make the climate action plan, inventory, and progress reports publicly available.

The Triple Bottom Line/ Consideration for Social, Environmental, & Economic Factors

The three main aspects of sustainability are Social, Environmental, and Economic. As in this diagram Sustainability is where the three overlap, creating solutions that benefit society today without hindering society tomorrow.



The Triple Bottom Line concept is recognized and respected by both ACUPCC and Sustainability Tracking & Rating System (STARS). At Valencia College, the Triple Bottom Line model reminds us that finance intersects with the environment and with the best interest of society. In other words, it reminds us of the connection between *people, planet, and profit*.

Sustainability Tracking & Rating System (STARS)

Valencia College registered as a participant in the STARS program in October 2011 and will complete the first year of participation in October 2012. STARS is a tool offered by the Association for Advancement of Sustainability in Higher Education (AASHE) that provides a framework for gauging Sustainability progress among higher education institutions. STARS was launched as a pilot in FY 2007/08 and has been revised extensively by technical experts. STARS facilitates information sharing about higher education sustainability practices and performance, since reports from each college or university are posted online for public viewing.

As of August 2012, 200 institutions have submitted a STARS Report and earned a STARS rating, according to AASHE. Of these, only 26 participants are two-year colleges. Valencia College is the first 2-year college in Florida to participate in STARS.

By the diversity of the STARS credits, the program helps promote the interconnectedness and interdependence of the social, economic, and environmental components of sustainability. Our first submittal uses the STARS 1.2 rating system, which became available soon after we enrolled. Valencia College plans to conduct annual updates of the STARS documentation.

Clean Air Cool Planet and USGBC

ACUPCC partner Clean Air-Cool Planet provides tools to calculate greenhouse gas emissions, that are widely accepted in the academic community and by ACUPCC and STARS. The United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) program has helped guide our construction and renovations.

OUR SUSTAINABILITY PROGRESS

Year by Year Accomplishments

Practices, projects, and decision processes based on sound environmental practices, efficiency and cost savings—the ‘*right thing to do*’—have been incorporated throughout our operations for many years. In recent years, increased institutional support has offered opportunity for our campus to progress steadily toward a sustainable campus.

A summary of Valencia College’s sustainability efforts from 2005-2012 appears in Appendix 1.

Sustainability Committee

By 2005 Valencia College was already articulating a vision for stewardship, conservation, and reutilization of the campuses’ resources. The initiative began with the creation of the "Sustainability and Energy Savings Committee," which reports to the Operations Council.

This committee was originally charged with *investigating and researching current practices, and developing and defining a series of sustainable and energy savings measures that support Valencia's mission, and benefit the college in on-going operations, renovations, and new construction.*

As revised in September 2012, the committee was charged with *championing excellent stewardship of the College's habitats and resources and reduction of the College's carbon footprint. This stewardship reflects our commitment to the education of students, staff and community members on the preservation of our environment for future generations. Objectives include promoting the incorporation of sustainability in the College curriculum, supporting sustainable practices in procurement, operations and grounds keeping; and providing guidance in the establishment of procedures affirming our commitment to sustainability.*

Members of the Sustainability Committee include tenured faculty from various fields, as well as staff from Facilities, Procurement, Administration, Institutional Research, and Student Development.

Participation by members from all campuses is sought, with committee meetings monthly on West Campus. For those members from other campuses, the GoToMeeting feature (enabling remote access) was activated in 2012.

Agendas and minutes are posted on the Sustainability website <http://valenciacollege.edu/sustainability/getinvolved/committee.cfm>.

Office of Sustainability

The Office of Sustainability was established in November 2011, within the Facilities Department. Staff members include the Director of Sustainability, who reports to the Assistant Vice President for Facilities and Sustainability, the Operations Manager, Energy Efficiency and the Operations Manager, Energy Education. Other staff members in Facilities and Procurement work closely with the Office of Sustainability.

Brief job descriptions are as follows:

- **The Director of Sustainability**

Assists the Assistant Vice President for Facilities and Sustainability to collaboratively promote sustainability college wide. Champions excellent stewardship of the college's habitats and resources and reduction of the college's carbon footprint. Establishes a commitment to the education of students, staff, and community members on the preservation of the college's environment for future generations.

- **The Operations Manager, Energy Efficiency**

Is responsible for identifying energy waste college wide and proposing innovative solutions. Responsible for the management of college wide building automation systems. Works with local resource agencies, suppliers and contractors to establish resource efficiency programs for the college and to implement these programs. Collaborates with other staff members to educate the campus community in energy-saving procedures.

- **The Operations Manager, Energy Education**

Is responsible for programs to achieve savings through strategic shut down procedures. Conducts unoccupied and occupied energy audits, follows up on comfort complaints, works toward adherence to college-wide guidelines for energy efficiency, publicity in *The Grove* (the college's online newsletter) on savings achieved and recognition of "energy heroes." Educates faculty and staff by a variety of means.

BASELINE REPORTS

Our baseline reports, data gathering initiatives which best reflect the current environment of our campus as it relates to sustainability, include:

- Greenhouse Gas (GHG) Inventory-The report completed 2010 by an outside consulting firm covers 2006 as baseline year and compares it with 2007 and 2008. Key portions appear in Appendix 2. For our 2009 and 2010 GHG inventories, staff utilized the Clean Air Cool Planet software.
- Climate Action Plan (2010)-(Report completed 2010, referenced here and appears complete in Appendix 3)
- STARS (2012 submittal)

Each of these reports is made available to members of the Valencia College community and to the public at www.valenciacollege.edu/sustainability.

The Greenhouse Gas Inventories and Climate Action Plan are also posted on the ACUPCC website www.presidentclimatecommitment.org/reporting . Our STARS submittal is posted on the AASHE STARS website: <https://stars.aashe.org/>.

GOALS AND STRATEGIES

The following section reviews progress on goals from:

1. the ACUPCC commitment
2. strategies suggested in our Climate Action Plan (CAP)
3. 2006-2009 suggestions of the Sustainability Committee

In August and September 2012 the Office of Sustainability updated these goals and milestones with input from the Sustainability Committee.

ACUPCC ACTIONS

Upon signing the ACUPCC, we committed to carry out two or more tangible actions:

1. Establish a policy that all new campus construction will be built to at least the U.S. Green Building Council's LEED Silver standard or equivalent. *This policy has been in the Facilities Department standards since 2006, and all buildings constructed since that year (three to date) have achieved LEED Gold. We are using a similar rating system, Green Globes, for two projects. Many of the construction practices we have learned through certifying our first three LEED buildings have been incorporated into our Architectural and Engineering Guidelines.*
2. Adopt an energy-efficient appliance purchasing policy requiring purchase of ENERGY STAR certified products in all areas for which such ratings exist. *This practice had been gradually implemented over the past few years and was stated as official policy by our Procurement department in 2012.*
3. Encourage use of and provide access to public transportation for all faculty, staff, students and visitors at our institution. *We are meeting obstacles related to this goal, but will continue to work forward, since GHGs from vehicle miles traveled (VMT) make up nearly half of our total GHGs. See information on the Transportation Task Force below.*
4. Participate in the Waste Minimization component of the national RecycleMania competition, and adopt three or more associated measures to reduce waste. *We have participated since 2010 in the Waste Minimization component of the national RecycleMania. We won 4th in 2010, 2nd in 2011 and 1st in 2012 nationally. The three associated actions are that: 1) we promote recycling of paper, plastic bottles, aluminum cans, and cardboard on all our campuses; 2) we encourage double sided printing and reduced printing; 3) we have installed water refilling stations and publicized them as a means to use less disposable water bottles.*

CLIMATE ACTION PLAN MITIGATION STRATEGIES-Introduction

Valencia College's 2010 Climate Action Plan (CAP) contains strategies, goals and targets to reduce our GHG emissions over time (see Appendix 2 for details on GHG emissions). Developed by the consulting firm that also developed our Greenhouse Gas Inventory in 2010, the CAP was based on information from the inventory, on best practices used elsewhere, and on feedback from stakeholder engagement (the Sustainability Committee and Facilities Department). The CAP is intended to provide a roadmap to achieve climate neutrality by the year 2060.

As detailed in Appendix 2 to this Plan, the Greenhouse Gas Inventory, Valencia College produces most of its GHGs from its electricity use in its buildings and from commuting by faculty staff and students.

In addition to Transportation and Energy, areas of emphasis of the CAP are

- Solid Waste (Methane from landfills is a GHG, so reduction of our solid waste stream through recycling and composting reduces our GHG emissions)

- Carbon Offsets (A method utilized in other areas where there are regulatory requirements to reduce GHGs)
- Education and Outreach (Indirectly contributing to reduction in GHGs by changing energy using behaviors)

Although the CAP does not cover this area, the following is also important to reduce our GHGs:

- Grounds (Nitrogen fertilizer contributes N₂O to the atmosphere, which is a GHG. Trees and other plants absorb CO₂)

The CAP pointed out the following over the period 2007 and 2008, compared to baseline data from 2006:

On the positive side:

- Emissions from building electricity consumption *dropped* 8% as a result of energy efficiency projects across multiple campuses- *even though we increased the square footage.*
- Natural gas emissions *dropped* 65% due to the removal of a large boiler on West Campus
- Emissions from solid waste *decreased* by 10% with the implementation of a recycling program that reduced mixed municipal solid waste (MSW)
- Emissions from fertilizer applications decreased by 87% after converting to organic fertilizer.

On the negative side:

- Emissions from employee and student commuting *climbed* 15% with rising student population
 - Campus vehicle fleet emissions *increased* by 9% due to an increase in the size of the fleet and vehicle miles traveled
- Even with significant reductions across many categories, total emissions *increased* by 2%. Emissions from increased commuting exceeded the emission reductions in electricity and natural gas consumption.

2012 Note: Our electricity consumption continues to drop with our aggressive retrofit and behavioral energy efficiency programs; however, our commuting emissions continue to increase.

The CAP lists several overall strategies for which considerable progress has been made:

- The formation of a Transportation Task Force to educate the Valencia community on alternative forms of transportation; develop a long-range transportation plan to increase public transit to the college's campuses and centers, and establish incentives to decrease commuter vehicle miles traveled (VMT) *The Task force first met in February 2012 and continues to meet monthly.*
- The establishment of an Office of Sustainability and hiring of a full-time Sustainability Officer to coordinate all sustainability efforts and oversee the Sustainability Committee *Director of Sustainability position was created, the Director was hired and the Office of Sustainability was created in November 2011.*
- Numerous educational and outreach efforts that integrate sustainability into the everyday lives of students and employees -*See the Sustainability website <http://valenciacollege.edu/sustainability/>.*
- Policy initiatives aimed at conserving energy, increasing renewable energy, and reducing waste disposal and personal vehicle travel- *Substantial progress made on all except increasing renewable energy and reducing personal vehicle travel. The former is not currently being pursued for reasons mentioned previously, and the latter is an area of ongoing effort.*

One of the 2010 CAP's major strategies will not be pursued at this time.

- Initiatives to increase onsite electricity generation using low carbon and renewable fuels -*The solar panels installed on the UCF/ Valencia College Joint Use Building provide 10-25% of the buildings energy. This \$750,000 installation was supported by a state rebate. Unfortunately, even with that rebate, the installation has a very long payback period.*

CLIMATE ACTION PLAN MITIGATION STRATEGIES-Updates

The following repeats Strategies proposed by the 2010 CAP (with target dates removed). Additional Strategies proposed by the Office of Sustainability and Sustainability Committee are included and noted as to source. Milestones and Goals of the 2010 CAP are highlighted in orange. As a follow-up, Progress toward Goals is listed along with Updated Plans. These are highlighted in yellow.

TRANSPORTATION

Goal: Reduce transportation GHG emissions by 10% by 2015, 25% by 2025, 45% by 2040 and 85% by 2060.

Strategy: Transportation Task Force Formation

Milestones: Develop Task Force

Goal: Establish group with 5-8 members, comprised of representatives from Facilities, Campus Security, Institutional Research, Student Services, Communications and the Sustainability Committee.

Progress: A Transportation Task Force first met in February 2012. This subcommittee has the recommended mix of Valencia College stakeholders plus the transportation expert from the Orange County Environmental Protection Division. It meets monthly and reports to the Sustainability Committee. We have had guest speakers from LYNX (bus line) and Rethink Your Commute. The Task Force met with LYNX representatives at their downtown office in June 2012 to discuss expanded service.

Updated Plans: The Task Force will continue seeking solutions to reduce our vehicle miles traveled (VMT) through public transportation and other options.

Strategy: Commuting Data

Milestone: Collection and Analysis Commuting Analysis Report

Goal: Achieve > 75% Survey Response Rate.

Progress:

A survey on commuting habits was distributed in March 2010. The purpose of the survey was primarily to measure the demand for a shuttle service between campuses, which has been a request from Student Development for several years. To collect more responses on the survey, the CAP suggested that the survey be incorporated into the course and instructor evaluations that students fill out at the end of each semester.- Unfortunately since the college has converted to online course evaluations, participation in course evaluations has been low.

The college's Institutional Research department has provided data on 1. where our students live and 2. how many students have classes at East and West Campuses in the same day. We have provided this data to LYNX planners.

Updated Plans: No immediate plans to do an additional survey. When a survey is considered necessary, we will time it with the start of school in fall and, in cooperation with the Security Department, develop a mandatory commuting survey that students and employees must fill out to receive their parking decal.

Strategy: Transportation (Carpooling) Awareness Campaign

Milestones:

- 1) Website development
- 2) Selection of carpool coordination software
- 3) Deployment of workshops and kiosks on all campuses

Goals:

- 1) Create active website, two annual workshops per campus, and two dedicated kiosks per campus.
- 2) Sign up 500 carpool program participants in the first year and increase participation by a minimum of 250 annually until 2028.
- 3) Maintain 15% annual student participation in carpool program until 2060

Progress:

Carpooling software from ZimRide is utilized by many colleges around the country and a few four-year schools in Florida. The Office of Sustainability interviewed transportation coordinators at the mostly four-year Florida schools where ZimRide is used. This software was considered cost-prohibitive.

Through our Orange County Environmental Protection Division member on the Transportation Task Force we learned about a local intergovernmental organization, reThink Your Commute, that is a resource for commuter options in Central Florida funded by the Florida Department of Transportation. The Transportation Task Force heard a presentation by a representative of reThink on what the organization does. The link to reThink Your Commute <http://www.rethinkyourcommute.com/> is provided on the Sustainability website.

Updated Plans:

We will first check into the college's liability regarding carpooling and if no problem are identified, we will further publicize the carpooling options provided by reThink Your Commute. As of September 2012 only 19 people have signed up for RethinkYourRide's ride-matching service. We will work towards securing 250 participants in 2013.

Strategy: Promote Local Housing and Day Care Services

Milestones: Resources listed on website and incorporated into orientation materials

Goals: 1) Connect students and staff with resources on nearby housing and day care facilities. Where none exist, assess demand and encourage companies and developers to fill need.

2) Aim to attract 10% of students and staff to live within a 5-mile radius to campus by 2020.

Progress: There is increasing availability of apartments near West Campus. The apartment complexes advertise to students through flyers.

Updated Plans: Encourage Student Services to list Day Care facilities along with apartments.

Strategy: E-meeting Software Procurement and Training

Milestones:

1) E-meeting policy 2) Software procurement and employee training workshops

Goals: 1) Aim for 100 E-meetings by the second year of the effort. 2) Increase E-meetings by 100 annually through 2020.

Progress: The college owns GoToMeeting Software and has used Skype for key interviews.

Updated Plans: The Office of Sustainability will meet with key people in IT and upper management to encourage use of E-meetings, including training for users. Cost to the college in mileage reimbursements saved as well as VMT and GHGs will be documented.

Strategy: Expand On-campus Food Services (that is sustainability-focused)

Milestones:

1) Approved policy authorizing private vendors to provide food on campus grounds

2) Vendor selection process

Goals: Establish one to three private food vendors on each campus by 2015.

Progress: We were able to have healthy juice drinks sold in the bookstores by 2010. Although some improvements have been made, including a few vegan options, many sustainability-focused improvements could be made. For example, plastic sandwich holders are not recyclable. The current food vendor's contract goes until June 2013.

Updated Plans: Work with Procurement on changes to the food vendor's contract, and discuss the possibility of multiple private vendors. Develop list of sustainable needs for dining for the request for proposal.

Strategy: Commuter Challenge Month

Milestones: List of participants and VMT reductions by department

Goals: Aim for 100% department participation in event.

Progress: None. Options to reduce VMT - more frequent bus service, carpooling, and bike lanes- must be improved before this contest will be productive

Updated Plans: Not pursuing this option immediately.

Strategy: Safer multi-purpose paths/bike lanes plus bike racks

Milestones: Have adequate bike racks.

Goals: Improve bike access to campus.

Progress: We have adequate bike racks and will install more as needed. The difficulty is the bike lanes beyond the campus. Our task force chair had in the past been on the regional bicycle routes committee.

Updated Plans: Continue to meet with City of Orlando and regional bicycle routes committee.

Strategy: Collecting annual mileage per vehicle on Valencia College's campuses to improve accuracy of a fleet analysis.

Milestones: All staff record mileage when making work-related trips between campuses using their own vehicles.

Goals: Demonstrate GHG reduction benefits of investing in a Green fleet

Progress: None yet.

Updated Plans: This effort will be pursued in 2012-2013

Notes: Mileage paid to staff for the frequent trips between campuses may justify investing in a "green" fleet, perhaps of electric or plug-in hybrid vehicles. Many staff members do not report mileage, and efforts will be made to correct this. Tracking fuel use for each of our fleet vehicles will permit more in-depth analysis on individual vehicle fuel economy and yield more accurate emission results for GHG reporting

The following strategies were originated by the Transportation Task Force:

Strategy: LYNX express bus route (shuttle) between East and West campuses

Milestones: More frequent Lynx bus routes, with possible lower rates for Valencia College students and staff

Goals: Identify the best routes based on where students live using Institutional Research (IR) data.

Progress: IR provided data on students taking classes on East and West on the same day.

The Task Force met with LYNX particularly about the possibility of an intercampus shuttle. IR provided data on potential shuttle usage. We secured an initial cost estimate for a shuttle from LYNX

Updated Plans: Seek funding for shuttle.

Strategy: Preferred parking places for LEV and FE

Milestones: Preferred parking places. This credit was taken by the Allied Health Services LEED Gold building but having only LEVs and FEs park in the preferred spots has not been enforced.

Goals: Designate and enforce preferred parking spaces.

Progress: Our Security Department was provided lists of low emitting vehicles linked from <http://www.greencars.org>; however, the impression is that the list is too long to manage. The Head of Security found out that they can print “green” Preferred parking passes, based on auto information a student or staff member enters.

Updated Plans: Preferred parking is an educational measure on purchase of new cars that benefits our campus community but will not translate into lowered GHG emissions in the short term. This initiative has been tabled for now, as parking availability is a tense issue on the East and Osceola Campuses. A link to the greencars.org site is posted on the Sustainability website.

Strategy: Electric vehicle charging stations

Milestones: Install charging stations on all campuses

Goals: Publicize Electric vehicle charging stations and benefits of electric vehicles

Progress: We now have 10 stations (from OUC) on West and 2 stations (from Progress Energy) being installed on East. At a public event with Get Ready Central Florida in July, one of our professors brought his truck he had converted to electric.

Updated Plans: Try to secure electric vehicle charging stations for Osceola Campus. Continue working with the Get Ready Central Florida group with publicity for electric vehicles. Explore possibility of offering class through Continuing Education or Workforce on converting vehicles to electric.

Strategy: Tracking Air Travel

Milestones: Tracking a list of destinations traveled by faculty, students, and staff and their mileage at a minimum.

Goals: Make more accurate estimate of air miles traveled

Progress: Individual departments book their own travel, making this calculation difficult. However, the Budget Office will provide some information to use as an estimate. This effort will be pursued in 2012-2013.

Updated Plans: Obtain information from Budget Office to make more accurate estimate

BUILDING ENERGY

The overall goal stated in the CAP is to reduce GHG Emissions from building energy use by 20% by 2015, 35% by 2025, 60% by 2040 and 100% by 2060. Valencia College appears on target to reach these goals. Through retrofits of existing buildings, energy consumption by all of the Valencia College campuses has been reduced by approximately 1/3 over a 5-year period. Improvements have been primarily to HVAC (heating, ventilation, and air conditioning) and lighting. Evening, weekend and holiday shut downs and strategic scheduling from the Energy Education program are on target to save \$1 million per year in energy costs.

Strategy: Green Building Policy for Existing Buildings

Milestones: List of environmentally preferred upgrades; Draft policy

Goal: Upgrade 25% of existing buildings every 3 years.

Progress: In June 2012, Valencia College began the process of certifying one building under LEED Existing Building Operations and Maintenance (EBOM) as a pilot project.

Green operations and maintenance guidelines that will apply to all buildings college-wide have been drafted and are under review by our LEED EBOM consultant.

Updated Plans: Continue with pilot LEED EBOM project while continuing to improve the green guidelines. Consider costs to expand pilot.

***Strategy:* Re-commissioning Plan**

Milestones: Draft plan with proposed dates of upgrades

Goal: Re-commission all buildings every 3 years (note: this goal in the CAP is too expensive).

Progress: Buildings are now re-commissioned only if any Indoor Air Quality (IAQ) problems are noted. Re-commissioning is part of the LEED EBOM certification process and will be utilized in our East Bldg 3 LEED EBOM pilot project

Updated Plans: Cost to recommission a building is approximately \$4000-8000. With 39 buildings, including two still under construction, that would be 13 buildings per year or about \$80,000, which may or may not be cost-effective. We will seek to document savings that can be achieved through this recommissioning effort.

***Strategy:* Evaluate and Update Space Allocation Plan**

Milestones: Plan Review and Update

Goal: Re-evaluate plan and benchmark utility savings annually.

Progress: The Operations Manager, Energy Education, has been working with the Operations Manager of each campus regarding strategic scheduling of classes, to allow shut down of heating, ventilations, and air conditioning (HVAC) when and where not needed.

Updated Plans: We will continually review time of day scheduling and encourage strategic scheduling so fewer buildings will be operated on weekends.

***Strategy:* IT Power Management Solutions**

Milestones: 1. Select IT Power Management Software 2. List of equipment and configuration status

Goal: 1. Manage all computer equipment through a program by 2014. 2. Quarterly audits of equipment to ensure that they are configured for power saving mode.

Progress: Office of Information Technology (OIT) has programmed all PCs to go to sleep mode.

Updated Plans: The Operations Manager, Energy Education is working with lab managers to secure shut down of computer labs every evening.

***Strategy:* Increase onsite electricity generation**

Milestones: 1. Feasibility Study 2. List of potential projects 3. Issue RFI for projects

Goal: 1. Submit a minimum of 1-2 grant applications annually. 2. Increase onsite electricity generation 20% every 10 years.

Progress: Photovoltaics (PV) installed on Bldg 11, using a state energy grant.

Updated Plans: We continue researching state grant opportunities. The different campuses purchase electricity from four power companies, each with different rate structures, providing challenges and opportunities. Without the rebates that utilities provide in states that have Renewable Energy Portfolio Standards, utilizing renewable energy has not been pursued extensively due to the expense. We do have solar panels on one of our LEED Gold buildings, the UCF-Valencia Joint Use Building on West Campus. This building houses electrical engineering and the teaching of renewable energy technologies.

Strategy: **Renewable Energy Standard on New Buildings**

Milestones: Draft and approve policy

Goal: 1. All new buildings must meet a minimum of 10% of its energy demand through onsite renewable energy. 2. All new buildings must be built solar-ready.

Progress: As above, we have PV on one building.

Updated Plans: We will develop text for our architectural guidelines on making all new buildings solar ready.

Strategy: **Green Power Purchasing**

Milestones: Locate green power vendor

Goal: Purchase a minimum of 5% green power annually beginning in 2013.

Progress: None yet

Updated Plans: Locate green power vendors and make cost estimates to offset our energy use.

Strategy: **Analyze Electricity Consumption by Building**

Milestones: Install individual meters in buildings.

Goal: Install meters on at least three buildings per year starting in 2013

Progress: All new buildings are being built with dedicated meters. Staff has gained experience on which meters function best and are most easily connected to the Building Automation System. For the LEED EBOM pilot project on East Campus Building 3, a building meter was installed in late June 2012.

Updated Plans: A source of funding for additional building metering will be pursued in 2012-2013. Savings from the EBOM project will also be analyzed following its completion in fall 2013.

Notes: It is not possible to estimate greenhouse gas emissions per building for electricity without metering. Breaking down electricity consumption at the building level will allow us to identify the largest individual consumers of electricity, and better focus mitigation measures. It allows us to use the EPA's Energy Star Portfolio Manager with its comparison to other buildings in the same class.

The following strategies originated by the Facilities Department and Office of Sustainability:

Strategy: **Equipment Retrofits, Automation and Controls**

Milestones: Maintain data on electricity demand reductions through chiller retrofits and Building Automation Systems (BAS)

Goal: Install and maintain high performance HVAC equipment with BAS

Progress: We have remodeled old inefficient air-cooled chillers and retrofitted with high-efficiency variable speed, variable flow water-cooled chillers (West Campus, four 500-ton; East Campus two 650-ton; Osceola Campus, three 500-ton). The Winter Park Campus now has two 155-ton 20 SEER air-cooled chillers. Thermal energy storage (ice tanks) were added to the existing air-cooled chiller system at the Criminal Justice Institute to use off-peak energy to store cooling capacity. This leveraged the peak rate structure of CJI's utility (Progress Energy) plus a utility rebate making it cost-effective. The college has focused on chiller design to be able to run at part-load as well as full-load. All of the new chiller plants are Variable

Primary Flow with differential pressure sensors in the furthest buildings to assist in cooling without using more chilled water than necessary.

Updated Plans: Install new chiller on West Campus to serve Bldg 10, work through difficulties with Winter Park chillers, and streamline Building Automation System process.

Strategy: Energy Savings through Energy Education

Milestones: Educate Valencia Community on shut down procedures, phantom loads, and strategic scheduling

Goal: Have college adopt and follow Energy Education Guidelines

Progress: Operations Manager, Energy Education communicates with facilities staff about equipment and with all faculty and staff about this effort, does energy audits, and carefully documents use reductions through billing records and meter data.

Notes: Since September 2011, the total energy savings on all campuses have been \$407,500 compared to a baseline of the same 6 months of the previous year. The savings represent \$380,000 attributed to behavioral changes through utility (electric, water, gas) invoices. Mechanical adjustments (new equipment, lighting retrofits, control adjustments) added \$20,000 in savings, and weather added savings of \$5,000 (temperatures were warmer during the fall and winter compared to last year). Energy Education Guidelines, approved by the Operations Council, have been distributed via *The Grove*, employee online newsletter, and are posted on the college website (www.valenciacollege.edu/sustainability).

Electricity savings for the college-wide Learning Day shutdown (one single day) was approximately \$8,000. The spring break shut down garnered approximately \$54,000 in energy savings on all campuses.

For the first period for which Energy Education billed the college, September 2011 – February 2012 approximate figures are:

· Reduction in usage:	\$380,000
· Installation of new equipment:	\$20,000
· Milder weather:	\$5,000
· Rebates :	\$2,500
· Total Savings:	\$407,500

Updated Plans: Continue focus on computer lab shutdowns and use of fewer buildings on weekends.

Strategies: Reduce leakage of ozone depleting and global warming contributing refrigerants

Milestones: Improve refrigerant data and analysis by measuring refrigerant levels at the beginning and end of each year and recording instances where refrigerants and dates were drained.

Goals: Track refrigerant emissions

Progress: The need to replace refrigerants has been reduced through replacement of our chiller equipment. However, tracking could be done. This effort will be pursued in 2012-2013.

Updated Plans: A more complete inventory of equipment using refrigerants including refrigerators and fire suppression equipment will improve the accuracy of the analysis. This effort will be pursued in 2012-2013.

Strategies: Lighting retrofits

Milestones: Replace all incandescent lights with florescent or LEDs.

Goals: Track lighting retrofits and savings

Progress: Virtually all incandescents, T-12s and magnetic ballast fixtures have been replaced with florescent lamps (T-8s or T-5s and electronic ballasts).

Updated Plans: We will track lighting retrofits and savings. Return on investment from investing in LEDs will be evaluated. This effort will be pursued in 2012-2013.

EDUCATION AND OUTREACH

Education and Outreach is generally impossible to quantify in terms of its impact on GHG emission reductions; however, it provides support to positive behavioral changes for all of our Sustainability efforts.

The CAP lists the following as an overall goal: To increase student and employee involvement in sustainability initiatives and provide meaningful education that results in cultural and behavioral change inside and outside of the college.

***Strategy:* Student participation in the Sustainability Committee**

Milestones: Recruit 3-5 students to the Committee

Goal: Achieve equal representation of students, faculty and staff in Sustainability Committee.

Progress: A student member has participated in the Transportation Task Force

Updated Plans: We will continue to try to recruit students to the Sustainability Committee

***Strategy:* Hire Sustainability Coordinator**

Milestones: 1. Job Description 2. Begin Hiring Process

Goal: By the Fall of 2011, establish a Sustainability Office staffed with at least one full time staff member dedicated to sustainability

Progress: We were on target, with a Director of Sustainability hired in November 2011. The Office of Sustainability was set up at that time.

Updated Plans: Hire work study student and/or seek internship to assist the Office of Sustainability

***Strategy:* Establish Sustainability Website**

Milestones: 1. Content creation 2. Website Launch

Goal: Develop interactive educational website updated regularly by Communications Department.

Progress: A Sustainability website was launched in 2010. It underwent two revisions in 2012, the second with assistance from Marketing. A Facebook page was also launched in 2012.

Updated Plans: Continue to populate and improve the website and seek increased traffic to the Facebook page. Post documents for STARS on the website.

***Strategy:* Key Personnel Training and Certification**

Milestones: Identify key staff and outside training and certificate programs

Goal: Staff signed up for appropriate training course(s) in 2012-2013 academic year.

Progress: Having one or more staff members accredited as USGBC's LEED Accredited Professional (LEED AP) was a goal of the Facilities Department in the past, and the Director of Sustainability holds the LEED AP. The Operations Manager, Energy Education receives training through Energy Education conferences.

Updated Plans: The Director of Sustainability will continue training to maintain the LEED AP credential, take a workshop on Greenhouse Gas calculations, and attend higher education sustainability conferences. The Operations Manager, Energy Efficiency will participate in Commercial HVAC, Building Automation Systems, and other commercial energy efficiency

training at sponsored conferences and events. Other Facilities staff will continue to receive training, for example, on green cleaning methods or on operation of any new equipment or automation systems. The Office of Sustainability will provide encouragement to members of the Sustainability Committee and Facilities staff to take additional training.

Strategy: Basic Staff and Faculty Training

Milestones: Internal training program for faculty and staff

Goal: 100% of faculty and staff enroll and pass basic sustainability course during 2012-2013 academic year.

Progress: Edge workshops on Sustainability are being offered.

Updated Plans: A less ambitious goal than the above seems appropriate. Awareness building through frequent articles in The Grove (employee online newsletter) will be ongoing, along with Edge workshops.

Strategy: Sustainability curriculum integration

Milestones: 1. Develop curriculum standards 2. Research topic areas per department 3. Lesson plan examples

Goal: Lesson plans submitted by 100% of departments for review and approval by Chief Learning Officer and Sustainability Committee.

Progress: Sustainability Across the Curriculum course, for 10 Professional Development Units (LCTS 3219), has been set up for October-November 2012.

Updated Plans: Continue to offer this course and encourage more instructors to incorporate sustainability into their classes.

Strategy: Update existing mission statement

Milestones: Propose draft to President

Goal: Modify mission statement to include commitment to sustainability.

Progress: The Valencia College Strategic Plan will not be revised until 2013. We provided draft language for Sustainability in the Budget Process and have discussed with members of the original Strategic Plan committee the idea of including sustainability.

Updated Plans: Office of Sustainability will develop draft verbiage and modify it through the Sustainability Committee. Then we will forward it to the appropriate Strategic Plan committee for the next revision.

Strategy: Add a statement about sustainability on all college materials

Milestones: Sustainability statement or motto

Goal: Presence of motto in orientation materials, class syllabi and signs around campus.

Progress: None yet

Updated Plans: Build awareness through other efforts prior to suggesting this to Marketing.

Strategy: Install Conservation Signs

Milestones: 1. Choose focus areas 2. Create and post signs

Goal: Three focus areas and student participation in developing the signs

Progress: The LEED buildings have signage for the green features.

Updated Plans: Plant labels for the native plants will be pursued, as part of the Tree Campus USA effort. We will also try to develop signs to replace the Save the Air/Smoke Free posters, working with Marketing.

Strategy: **Sustainability training/certificate programs**

Milestones: Program approval

Goal: Offer 1 training/certificate program at VC.

Progress: None yet

Updated Plans: Discuss with administrators and Workforce Valencia. Keep this effort in mind for future.

Strategy: **Establish partnerships with local environmental organizations and government agencies**

Milestones: Event launch

Goal: 1. Research and develop relationships with organizations for collaborative projects 2. Collaborate annually to develop 1-2 events with a local organization

Progress: Orange County Environmental Protection Division (EPD) has their Air Quality Specialist as a member of our Transportation Task Force. We collaborated with EPD, Get Ready Central Florida, and Orlando Utilities Commission (OUC), our West Campus energy provider on an electric vehicle awareness event on July 17. We collaborated with the City of Orlando GreenUp program for our March 29, 2012 Arbor Day Foundation Tree Planting Event. Various organizations had tables at our Earth Day events.

Updated Plans: Continue to seek partnerships for events.

Strategy: **Green campus awareness week or competition**

Milestones: 1. Planning Committee 2. Event Plan

Goal: Dedicate a minimum of one week annually to raising awareness around a sustainability topic (i.e. energy, climate change, etc.)

Progress: We are seeking to encourage student clubs and a greater collaboration with Student Government and Valencia Volunteers (the student service group). Attempting to include sustainability information on the campuses in new student orientation tours is one effort. We are participating in the week long International Education Week.

Updated Plans: We will continue the above efforts, and work with SGA on Earth Day. We are not able to do a week-long event yet.

Additional Goals from Office of Sustainability

Strategy: **Energy Heroes program**

Milestones: Articulate the concept of Energy Hero, someone who contributes to the behavioral Energy Education effort in a significant way, versus the Energy Champion, a facilities staff member that saves the college over \$100,000.

Goals: Develop logo, Energy Hero award certificate and generate publicity on program

Progress: Logo and certificate under development, and our first Energy Heroes have been identified.

Updated Plans: Roll out program with publicity in *The Grove*, publicity at Faculty Welcome Back and through Posters on campus.

Strategy: **Support campus-based clubs for co-curricular and extra-curricular activities**

Milestones: Coordinate with club sponsors through inviting them to the Sustainability Committee

Goals: Help clubs grow until they take initiative on sustainability issues on their own

Progress: Sponsors of East Campus and West Campus environmental clubs are members of the Sustainability Committee.

Updated Plans: Work to support clubs with suggestions and any other assistance, for example Green Apple Day of Service Sept 29, 2012. Interface with Student Government Association (SGA) whenever possible. Work towards formation of USGBC Students club from Building Construction students and work with AIAS (American Institute of Architecture Students) giving tours of LEED buildings.

***Strategy:* Continue to expand partnerships with Student Development (speakers, field trips, events)**

Milestones: Meet with Student Development to propose joint projects

Goals: Develop joint projects

Progress: We met with Student Development to propose joint projects and worked together on Earth Day 2012 events.

Updated Plans: Continue working with Student Development and meet student leaders

***Strategy:* Provide speakers and facilitators for SkillShops, Visions and Voices, Leadership Valencia, etc.**

Milestones: Develop Skillshops on sustainability topics and monthly nature walks

Goals: Develop five to ten Skillshops

Progress: Three or more Skillshops are scheduled on each campus for spring

Updated Plans: Develop the Skillshops to be student-friendly.

SOLID WASTE

Goal: Reduce Solid Waste by 15% by 2015, 50% by 2025, 75% by 2040 and 100% by 2060.

The following are listed in the CAP:

***Strategy:* Organize Textbook Recycling Program**

Milestones: Contract with textbook recycling service

Goal: 1. Organize textbook recycling at the end of every semester. 2. Reduce overall tons of municipal solid waste (MSW) through textbook recycling program.

Progress: We have a Book Buy Back program for textbooks still in use or otherwise with a resale market. For those books not eligible for Book Buy Back, students are encouraged to donate them through Student Government Association (SGA). Bins are available in Student Government from which students can take books at no cost. Finally, SGA contracts with a company to pay a small fee for the remaining books.

Updated Plans: Continue these practices. In 2012, Textbook rental kiosks were installed, which further reduces any textbooks that might go to the landfill.

***Strategy:* Composting Program**

Milestones: 1. Education program to educate staff and students 2. Composting pilot program on all campuses

Goal: Compost >20% of food waste on all campuses

Goal: Expand program to all campuses by 2013.

Progress: Our food vendor has stated that they have a low percentage of food waste, so we are not pursuing food waste recycling at this time. Grounds crew on Osceola and East Campus are already composting landscape waste, and West Campus is planning to begin composting.

Updated Plans: Continue to encourage Grounds supervisors to compost yard waste.

Strategy: **Construction and Demolition Recycling Standard**

Milestones: Protocol for C&D waste recycling for new building construction and existing building upgrades

Goal: >15% of C&D material recycled on construction projects by 2012

Progress: New LEED or Green Globes certified buildings recycle their C & D waste to the extent possible.

Updated Plans: We will write strengthened specifications into our A & E Guidelines, and continue to monitor this effort by our contractors on new buildings.

Strategy: **Waste Reduction Policy**

Milestones: Waste reduction policy draft for review by Valencia College Board of Trustees

Goal: Reduce MSW through responsible procurement and paper use policy

Progress: Policies to use electronic files and print only if needed, and to use double-sided copies have been instituted throughout the college for some time. They are codified in Operations and Maintenance Green Guidelines from August 8, 2012.

Updated Plans: Education on how to do double-sided copies with the department printer will be offered, if needed for the different office copiers.

The following originated with the Office of Sustainability:

Strategy: **Green Office program**

Milestones: Develop criteria and simple checklist for program

Goals: Utilize this competition/recognition program to promote both recycling and energy efficiency (reduction in plug-load and attention to shut down procedures) by departments.

Progress: We have collected models for this program from other colleges and have secured interest from Osceola and Winter Park.

Updated Plans: Pilot Green Office program at Osceola and Winter Park campuses

WATER EFFICIENCY

Water does not cost as much as energy, but it is predicted to be increasingly scarce in the future. Valencia College is considering ways to use less potable water.

Strategy: **Reduce Irrigation Water Use by planting Drought-tolerant Plants**

Milestones: Replace St. Augustine grass with Bahia grass, which survives without irrigation

Goals: Plan installation of new landscaping in new buildings to use irrigation systems only for establishment

Progress: We have replaced St. Augustine grass with Bahia grass on most campuses.

Updated Plans: Document water use and seek other ways to reduce it, including climate-based controllers and drought-tolerant plant selection.

Strategy: Indoor Water Use Efficiency

Milestones: Fixtures chosen for greatest water efficiency for new construction and retrofits

Goals: Choose WaterSense labeled fixtures where available.

Progress: We utilize dual-flush toilets and other types that use no more than 1.28 gallons per flush for new installations and retrofits. Automatic flushing toilets have been chosen by the college to assist maintenance crews. We tried waterless urinals but were not pleased with the results. Currently we install urinals that use only 0.25 gallons per flush. This is a tremendous savings over older urinals that used as much as 3 gallons per flush.

Updated Plans: We are having Bldg 10 West Campus certified under the Florida Water Star Commercial Pilot program by the St. Johns River Water Management District. We will try to make practices utilized part of our Architectural and Engineering (A & E) Guidelines.

Strategy: Cooling Towers

Milestones: Research chemical treatment of cooling tower water.

Goals: Reduce large consumption of potable water in our chiller plants

Progress: In 2010 we implemented a low water usage chemical treatment program for our cooling towers, which saved \$111,000.00.

Updated Plans: Continue optimization of cooling tower performance and consider non-potable water for new cooling tower applications.

GROUNDS

Valencia recognizes the importance of stewardship of both the landscaped and naturally vegetated areas on the campuses, and that these areas can contribute to mitigation of the college's carbon footprint. The East, West, and Osceola Campuses contain large areas of intact natural forested habitat, and all of the campuses have protected shade trees.

A study of tree populations in both the landscaped and natural areas of the four campuses was carried out in 2009. This data was used with the I-Tree Streets software suite to determine the potential for carbon sequestration and other environmental benefits provided by the various tree species.

Strategy: Plant, Inventory, and Maintain Trees

Milestones: Obtain Tree Campus USA status

Goals: Maintain Tree Campus USA status

Progress: Tree Campus USA status was achieved in January 2012 (awarded on March 29, 2012). An Arbor Day Foundation/Toyota/AASHE grant for 100 large trees was secured, and a March 29 tree planting event was held with participation by approximately 100 students.

Updated Plans: East and West Campus have adequate tree populations, but Osceola Campus could use native trees. Secure a master landscape plan and tree grant and organize a planting event for Florida Arbor Day January 2013.

Strategy: Fertilizer reduction

Milestones: A more systematic way to track fertilizer applications across all campuses will improve the accuracy of future analysis.

Goals: Track fertilizer use

Progress: The campuses have basically stopped applying any fertilizer by policy with the changeover from St. Augustine grass to Bahia grass.

Updated Plans: We can compare amount of fertilizer used before this policy was implemented to see reduction in GHGs through this policy.

CAMPUS AS A LIVING LABORATORY

The following strategies were originated by the Sustainability Committee and Office of Sustainability:

***Strategy:* Improve Wildlife Habitat**

Milestones: 1. Continue to plant native trees and other plants 2. Bird boxes installed 3. Develop Master Plans for all campuses to guide future native plantings

Goal: Continue expansion of native trees and other plantings on all campuses, and removal of invasive exotics

Updated Plans: Contract developed with landscape architect for Osceola campus and leads on a tree grant secured.

Secure Tree Grant for Osceola Campus and hold planting event for Arbor Day

***Strategy:* Monitor Water Quality**

Milestones: Work with City of Orlando lake quality department to evaluate changes in lake water quality from practices such as refinishing parking lots

Goal: Maintain high water quality in our campus water bodies

Progress: Through changed fertilization, irrigation, and lake edge vegetation maintenance practices, water quality in Lake Pamela has improved from 2005 to present, according to City of Orlando data.

Updated Plans: Contact City of Orlando lake quality department to continue monitoring.

***Strategy:* Encourage Professors to Use the Campus as a Living Laboratory**

Milestones: Provide monthly nature walks

Goal: 1. Label trees 2. Build bat house with electronic monitoring.

Progress: Through the Sustainability Committee, interested professors are making plans to carry out activities with their classes utilizing the campus environment.

Updated Plans: Work with SGA on monthly nature walks for the campus community. Plan for installation of informational signage and an information kiosk. Through the Sustainability Across the Curriculum effort, encourage professors to use the campus as a living laboratory.

FINANCING

***Strategy:* Secure Financing for GHG Reduction-related projects and other Sustainability Efforts**

Milestones: Survey financing mechanisms

Goals: To support the development of more capital-intensive strategies in the 2010 Climate Action Plan, Valencia will need to take advantage of a variety of financing mechanisms, which may include the following:

1. Utility Incentives and Rebates
2. Valencia's Endowment
3. Cost Savings through Operations Improvements

4. State and Federal Grants
5. Property Assessed Clean Energy (PACE) Financing
6. Clean Renewable Energy Bonds

Progress: We have surveyed the Financing Options suggested in the CAP above. Current availability of 1) Utility Incentives and Rebates is limited to those from Progress Energy (possible for East Campus and CJI). 2) Valencia's Endowment is not a likely source at this time. 4) For State and Federal Grants we have surveyed the federal DSIRE site (<http://www.dsireusa.org/>) and not found any grants that are still funded. 5) Property Assessed Clean Energy (PACE) Financing is not currently viable in Orange County. 6) The federal Clean Renewable Energy Bonds program Cost Savings through Operations Improvements expired in 2010.

The only remaining option is 3) Cost Savings through Operations Improvements, which we are calling Development of a Green Revolving Fund.

Updated Plans: We are carefully documenting savings from our retrofit and energy education efforts using the ECAP software in conjunction with our consultant Energy Education. We will propose additional GHG-reducing projects outlining their return on investment (ROI). If these projects are currently without funding, we will seek to make a business case for funding them through this "Green Revolving Fund."

2013 plan

TIER ONE ACTIONS

The following are those that directly translate into GHG reductions and will be prioritized:

Strategy	Milestones	Goal	Target Date
1) Transportation (Carpooling) Awareness Campaign	Work through liability concerns with Legal Dept; Work with SGA and marketing to publicize	1) Increase registrants for ReThinkYou Ride from 19 to 250. 2) Estimate GHG savings from this effort	October 2013
2) E-meeting Software Procurement and Usage	1) Work with IT on availability of software 2) Work with senior staff to start using E-meetings 3) Consider incentives to promote	Increase E-meetings to 30 or more per year	October 2013
3) Research toward Purchase of Green Fleet	1) Document cost of travel currently 2) Research purchase and operations costs of green vehicles	Purchase one plug-in hybrid vehicle.	October 2015
4) Continue Energy Savings through Energy Education	1) Implement Energy Heroes program 2) Achieve Strategic Scheduling for weekend classes on East Campus	1) Save \$1 million per year over baseline (May 2010-April 2011) 2) Greater college-wide involvement	October 2013
5) Plan lighting and other energy efficiency retrofits with ROI	1) Develop system to track retrofits 2) Identify potential retrofits with greatest savings	Develop pattern of review of lighting retrofits for greatest savings	October 2013

TIER TWO ACTIONS

The following are those that support Tier One Actions:

Strategy	Milestones	Goal	Target Date
1) Launch Sustainability Across the Curriculum effort	1) Offer 2-day Faculty Development Workshop in Fall 2012 and Spring 2013. 2) Secure participation by at least 16 instructors	1) Foster interdisciplinary dialogue on 2) Increase number of courses that include Sustainability 2) Increase number of courses that include Sustainability	October 2013
2) Develop Green Office Program	1) Develop criteria and simple checklist for program 2) Launch pilot	1) Enhance paper recycling effort in pilot offices 2) Enhance reduction in plug load and shut down procedures	October 2014
3) Improve Sustainability of On-Campus Food Offerings	For new food vendor contract include specifications for compostable packaging	1) Eliminate plastic packaging 2) Offer greater variety of healthy food options	October 2013
4) Develop Green Revolving Fund Proposal	1) Specify equipment purchases and their return on investment 2) Specify other Sustainability-related projects and costs	Demonstrate how using funds saved through energy efficiency can save result in greater savings if applied to specific equipment purchases	October 2015

APPENDIX 1-OUR SUSTAINABILITY PROGRESS: YEAR BY YEAR ACCOMPLISHMENTS

2005

- The Sustainability and Energy Savings Committee was formed. The name was later shortened to the Sustainability Committee. Interested faculty and staff, college-wide, voluntarily joined the committee.

2006

- The policy that all new campus construction is built to at least the U.S. Green Building Council's LEED Silver standard or equivalent (Green Globes) was established and later written into the Architectural and Engineering Guidelines.
- An Energy Audit of all buildings was carried out by an Energy Service Company (ESCO) . A scope for Performance Contract was presented; however, Valencia College was able to secure \$13.5 million from the state government, so the Performance Contract did not need to be signed. Chiller plant renovations planned.
- Landscape master plans were developed for East Campus and West Campus, suggesting reduction in irrigation, fertilization, and pesticides through the changeover from St. Augustine grass to drought-tolerant Bahia grass and various native plants.
- East Campus began renovating its landscapes following the master plan's recommendations.
- Recycling of mixed paper began at Winter Park Campus
- Green housekeeping staff practices were instituted by custodial staff and training offered.

2007

- The Custodial Services Department Supervisor, East Campus, took on a recycling effort for all campuses. Bins were purchased and placed throughout campuses for plastic bottles, aluminum cans, and mixed paper. Cardboard from the bookstore receiving, cafeteria, and other areas of the college began to be recycled.
- Valencia contracted with an energy service company (ESCO) to implement energy efficiency projects.
- Major chiller plant renovations planned for West Campus.
- Drought tolerant landscaping was installed on all campuses- St. Augustine grass removed and replaced with Bahia grass.
- Eco-friendly pest control techniques, integrated pest management (IPM), initiated and fertilizers reduced or eliminated.
- A student group, the Valencia College Environmental Society, carried out GoGreen Month in November

2008

- Custodial and Procurement converted to purchase of Green Seal-approved products for 85% of custodial chemicals.
- Old inefficient Chiller plant on West Campus was retrofitted with four 500-ton high-efficiency water cooled Chillers (completed in 2010)
- The Phase II Energy Performance Contract finalized and work on the new chiller plant on East Campus began.

2009

- Valencia College became signatory to the American College & University President's Climate Commitment (ACUPCC).
- Valencia adopted an energy-efficient appliance purchasing policy requiring purchase of ENERGY STAR certified products in all areas for which such ratings exist.
- Allied Health Services (AHS) building completed on West Campus. It earns LEED Gold rating (tied for first LEED Gold building in Orlando with OUC's Reliable Plaza).
- Lake Pamela Design Intent documents completed by landscape architects. Success measured by the following: 1. Students Use It, 2. Visually Appealing from Kirkman Rd., 3. The Start of an Ethos of Sustainability for the Grounds, 4. Reduction of Maintenance Costs, 5. Provide a Multi-dimensional Outdoor Experience for the Students and Faculty, 6. Re-focus the Campus Towards the Lake
- Earth Day celebrated on most campuses

- Sustainability Meeting and Trade Show held in March. Exhibitors were those who sell recycled-content, environmentally preferable products, energy and water-efficient products, alternate fuel vehicles, products using renewable energy, organic foods, alternatives to hazardous or toxic chemicals, or any supplier with a focus on sustainability.
- East Campus carried out its North Parking Lot renovation which increased number of native trees, plants, and shrubs- 1600 parking spaces Faculty/Staff spaces have increased to 690 campus-wide [20% of all parking]; Increased Handicapped spaces; Re-Engineered traffic flow in North Lot; Improved/Expanded walking paths along North Lot; New Signage; New Lighting; New Sealing/Striping.
- Tree Survey was conducted on all campuses, involving a Service Learning Project, counting over 21,000 trees.

2010

- With assistance from a consulting firm, Valencia College energy managers completed a baseline Greenhouse Gas Inventory (using 2006 as the baseline year and comparing to 2007 and 2008). This effort enabled compliance with ACUPCC commitment.
- With assistance from the same firm, Valencia College energy managers completed a Climate Action Plan (CAP) to comply with ACUPCC.
- Special Events Center completed on West Campus. It earns LEED Gold rating. The building has Valencia's first cistern with water used for toilet flushing.
- Bldg 11/UCF-Valencia Joint Use building completed on West Campus. It earns LEED Gold rating. This building has Valencia's first solar array.
- Valencia College became a member of AASHE
- Earth Day celebrated on most campuses
- Valencia College entered and won 4th in the Waste Minimization category in the national Recyclemania competition.

2011

- Operations Manager, Energy Education hired to achieve and document energy savings through carefully planned and implemented equipment shutdown procedures.
- Valencia College won 2nd in the Waste Minimization category in the national Recyclemania competition.
- Earth Day celebrated on most campuses
- Several aspects of Environmentally Preferred Purchasing instituted by Procurement.
- Director of Sustainability position created and filled.
- Two Orange County Homeowners Energy Efficiency Program (OCHEEP) workshops offered in conjunction with Orange County
- Cell phone recycling carried out on Winter Park Campus
- Water Refilling Station installed on East Campus
- Sustainability-related articles printed in *The Grove*, the employee online newsletter
- Budget request for Plug In Electric Vehicle for use by the Operations Manager, Energy Education submitted.

2012

January-March

- Transportation Task Force created with members of Sustainability Committee, Security and one Student.
- Garbage bins are labeled Landfill and kept next to recycle bins to promote recycling.
- Learning Day (February 10) featured three Sustainability-oriented volunteer activities on West Campus: Native plantings, removal of invasive plants, and construction and erection of bird boxes. Greening of Learning Day suggestions submitted.
- Seven OCHEEP workshops offered in conjunction with Orange County January through March 2012.
- Water refilling stations installed on West Campus, Winter Park Campus, and Osceola Campus.

- Grant for 100 trees received from Arbor Day Foundation, AASHE and Toyota Corporation. Tree planting event March 29 on West Campus had over 100 participants, mostly students.
- Tree Campus USA Status awarded at the March 29 event
- Preferred parking option presented to Campus Presidents and information for Fuel Efficient (FE) and Low Emitting Vehicles (LEV) provided to security. Head of Security research and confirmed that our Parking Decal software can give special green decals for FE and LEVs.

April-June

- Valencia College won 1st place in the Waste Minimization category in the national Recyclemania competition.
- Orange County E-waste drop off day was on West Campus on April 21.
- Earth Day was celebrated on all campuses.
- Five double Electric vehicle charging stations were installed on West Campus (allowing 10 cars to charge).
- Sustainability Facebook page was created.
- GHG Calculations for 2009, 2010 were completed using Clean Air Cool Planet software and submitted to ACUPCC.
- Valencia Volunteers (a student organization) held a Lake Pamela Day volunteer effort with student leaders doing invasive plant removal and putting up bird boxes.
- The Horticulture Department Greenhouse was installed with native plant landscaping.
- President Shugart signed the Energy Star Commitment and SEED membership.
- List of Sustainability-focused and Sustainability-related courses was developed through the Sustainability Committee and posted on Sustainability website.
- Project Manager for construction of the UCF/Valencia Joint Use Facility trained Architecture students to lead tours of LEED buildings on campus.
- LEED Existing Buildings Operation and Maintenance (EBOM) process was initiated, starting with East Campus Bldg 3. A building electric meter was installed in late June to allow energy use monitoring and calculations in EnergyStar Portfolio Manager.
- Sustainability Committee member works toward electronic monitoring of bird boxes.
- Sustainability Committee Co-chair received Endowed Chair for student construction projects around Lake Pamela.
- Transportation Task Force met with LYNX planners about increased bus routes and an intercampus shuttle.

July-Sept

- Electric Vehicle public event held in collaboration with Get Ready Central Florida.
- Two single electric vehicle charging stations were secured from Progress Energy for East Campus.
- The Operations Manager, Energy Conservation retired and the position was restructured to include more central management of building automation and controls. Now titled Operations Manager, Energy Efficiency, the position was advertised and filled.
- For LEED EBOM project for East Bldg 3, draft Operations and Maintenance Green Guidelines were developed.
- Green modifications were made to Architectural and Engineering Green Guidelines.
- Green Event Suggestions were developed, distributed to Welcome Back organizers, and posted on the Sustainability website.
- Energy Hero program was planned, with logo developed by Communications.

- Edge workshops and Student Skillshops on Sustainability were scheduled for Fall 2012
- Information on Sustainability features of campuses submitted to Student Development for inclusion in New Student Orientation Tours.
- Welcome Back Faculty events at all campuses had a sustainability presence.
- A Sustainability Brochure/card was developed and distributed.
- A Sustainability Across the Curriculum workshop through Faculty Development, to begin infusion of sustainability throughout different departments, is planned for October and November.
- Valencia College's Continuing Education is offering two Sustainability related classes for fall and a Panel presentation on Corporate Ethical Responsibility including Sustainability.
- For USGBC's Sept 29 LEED for Schools Green Apple Day of Service, we secured participation by the Valencia College Horticulture Club, Valencia Volunteers West Campus, and Grounds Department to develop a butterfly garden.
- Eight-slide powerpoint version of a longer Sustainability presentation was provided to HR for "Onboarding" of new staff.
- Sustainability Committee discussed LYNX partnership on field trip downtown.
- Global Sustainability workshop planned for International Education Week, November 12-16.
- Data regarding waste and recycling costs consolidated along with upcoming retirement of Recycling Coordinator and handover to new Coordinator.
- Osprey nests relocated on Osceola Campus.

APPENDIX 2

GREENHOUSE GAS INVENTORY

A comprehensive, college-wide measurement of the college's carbon footprint was conducted in 2010 in compliance with our Year Two ACUPCC commitment. This GHG Inventory was carried out by a consulting firm in conjunction with our energy staff. This Inventory created a baseline from which to target specific areas for feasible short-term and long-term reduction of emissions. It allows for comparing data over the years both internally and externally with other institutions.

A baseline determination was made for 2006 of the major sources of greenhouse gases associated with each campus. Additional follow up data determined the percent change in emissions from the baseline established through 2007 and 2008.

In 2006, Valencia College emitted a total of 52,785 metric tons of CO₂e. Only 3% of these were categorized as Scope 1. The majority of emissions were classified as Scope 2 (electricity consumption) and Scope 3 (employee/student commuting), which comprised 50% and 47% of Valencia's total emissions, respectively.

Solid waste, fugitive emissions from refrigerant use, natural gas consumption, vehicle fleet emissions from the campus vehicle fleet and fertilizer application made up the remaining 3% of the emissions, categorized as Scope 3. Emissions for air travel were not included in the analysis due to lack of data.

Source	Source	GHGs	Emissions [metric tons CO ₂ e]
Scope 1 Emissions - 3% of our emissions in 2006			
Direct Emissions from Stationary Combustion	Natural Gas Consumption	CO ₂ , CH ₄ , N ₂ O	924.43
Direct Emissions from Mobile Combustion	Gasoline and Diesel Fuel Use for Valencia's Vehicle Fleet	CO ₂ , CH ₄ , N ₂ O	138.74
Direct Emissions from Fugitive Emissions	Refrigerants Used in HVAC systems, Chillers, and Vehicle A/C units	R-12, R-22, R-134A, R-404A, R-409, R-502	295.43
Direct Emissions from Fertilizer	Fertilizer application	N ₂ O	2.73
		Total	1,361.33
Scope 2 Emissions - 50% of our emissions in 2006			
Indirect Emissions from Purchased Electricity	Purchased electricity	CO ₂ , CH ₄ , N ₂ O	26,509.99
		Total	26,509.99
Scope 3 Emissions - 47% of our emissions in 2006			
Indirect Emissions from Employee/Student Commuting	Fuel use from personal vehicles and buses used in commuting to and from Valencia campuses	CO ₂	24,641.85
Indirect Emissions from Solid Waste	Solid waste sent to landfill	CO ₂ , CH ₄	269.77
Indirect Emissions from Fertilizer	Fertilizer application	N ₂ O	2.07
		Total	24,913.69

APPENDIX 3

SUSTAINABILITY ACROSS THE CURRICULUM

With the long-term goal of making sustainability a core value of both campus practices and curriculum, Valencia College is in the process of identifying and featuring courses that are *Sustainability-focused* and *Sustainability-related*.

Sustainability-focused courses concentrate on the concept of sustainability, including its social, economic, and environmental dimensions, or examine an issue or topic using sustainability as a lens.

Sustainability-related courses incorporate sustainability as a course component or module, or address a single sustainability principle or issue, such as economic development, social justice, public health, energy, water, sustainable building or design, environmental health, land use, environmental policy, biodiversity, socio-economic diversity, human rights, etc.

The following are some courses we have identified as Sustainability-focused.

BIOLOGY COURSES

Environmental Science

BSC 1050 3 3 0 General education non-laboratory course provides understanding of our interdependence with and responsibility for environment. Investigates such aspects of environment as pollution, urbanization, population trends and changes in lifestyles. Treats present and projected solutions to problems.

Florida Environmental Systems

PCB 1440 (Formerly PCB 1435) 3 3 0 Focuses on Florida ecology. Combination of lecture, lab, field and computer lab techniques used to study variety of habitats. Topics include energy flow through food chains, environmental modeling and general ecology. Prior exposure to general biology topics recommended. No prior experience required.

Central Florida Habitats

BSC 10613 3 0 This active learning elective science course teaches students to recognize the common habitats of Central Florida through identification of typical plants, plant species composition, and soil and topography. Supporting topics are natural fire cycles, fire-mediated succession and prescribed burning, nature of watersheds and causes and effects of flooding, invasive exotic plants and animals, and conservation land acquisition and management. A three-hour canoe trip allows study of the floodplain swamp habitat. Field work will vary with weather conditions. This hybrid course combines field work and online (Blackboard) assignments.

Everglades Ecology

BSC 2062 3 3 0 A non-lab science course designed to introduce students to the history, biology, climatology, ecology, geology, hydrology, biodiversity, evolution, and restoration of the Everglades. Topics include: the Greater Everglades watershed, natural communities, flora and fauna interactions, ecological niches, hydro-pattern modification and its impact on the Everglades, exotic and invasive species, endangered species, nutrient loads and cycles, habitat alteration, protected areas, and the Comprehensive Everglades Restoration Plan. This course will not be considered for science general education credit.

Neotropical Ecology

BSC 2366 3 3 0 Prerequisite: Consent of Instructor. This course emphasizes observations of ecological relationships of plants and animals of the New World Tropics and associated habitats. Onsite studies in neotropical locations (Costa Rica, Belize, Amazonia, etc.) will emphasize basic ecological concepts, such as the niche concept, niche partitioning, symbiosis, competition, trophic structure, evolutionary relationships, co-evolution and predation. In addition, this course will emphasize identification of representative forms of life of various tropical ecosystems in the study country located within the neotropics. Both natural and artificial biological communities will be visited. Special travel fees apply. A valid passport is required prior to travel. This course will not be considered for science general education credit.

Neotropical Biology

PCB 2350 3 3 0 This course introduces students to the history, biology, ecology, diversity, and evolution of ecosystems of the New World tropics. Emphasis will be on rainforest, riverine, savanna, estuarine, and coral reef communities. Topics include: nutrient and energy cycling; light gaps, vertical strata and forest structure; animal-plant interactions, such as pollination biology, seed predation, dispersal and herbivory; plant and animal defenses; social insects; and latitudinal trends in biodiversity.

Introduction to Birdwatching

ZOO 1030 3 3 0 A non-lab field course with supporting lecture, designed to increase awareness of North American bird species. Some of the topics included are: bird identification techniques, bird topography and anatomy, tips on using field guides and checklists, binocular basics, basic birding principles, identification of common backyard birds, urban birds, birds of prey, wading birds, shore birds, and migratory species, conservation measures and issues impacting bird populations, an introduction to the ecology of birds, bird habitat relationships, birding by ear, taxonomy, scientific nomenclature, Alpha codes, census techniques, eBird data input and analysis, citizen science, and birding ethics. This course will not be considered for science general education credit.

Natural History of Florida Rivers

PCB 2308 (Formerly PCB 2304) 1 0 3 Field ecology course. Topics include plants, animals, water chemistry, stream flow dynamics, fresh water resources and management and pollution. All-day field trip required.

ENGINEERING AND BUILDING CONSTRUCTION COURSES

Introduction to Alternative and Renewable Energy

ETP 1501 3 3 0: No prerequisites. This course will introduce students to a variety of energy sources such as nuclear, wind, geothermal, solar, hydro, and biodiesel.

Engineering Materials and Processes

ETC1251 4 4 0: No prerequisites. Survey of basic materials used in industry, metallic and non-metallic, and processes used to form, fabricate, and finish these materials. Survey of materials and methods used in construction. Covers broad areas of wood, concrete, masonry, metal, and other building materials. Students select various topics for class presentation. Variety of audio visual material enhances student understanding of topics. This course includes learning activity designed to ensure competence in oral communication. (Special Fee: \$16.00).

Materials and Methods of Construction

ARC 2461 4 4 0: No prerequisites. Broad introduction to the methods and materials used in the construction of the build environment and to building technologies as they influence both architectural design and construction.

Building Materials and Construction Methods

BCN 1210C (Formerly BCN 1200C) 4 4 0 Survey of materials and methods used in construction. Covers broad areas of wood, concrete, masonry, metal and other building materials. Students select various topics for class presentation. Variety of audio visual material enhances student understanding of topics. (Special Fee: \$14.00)

Building Service Systems

BCN 2563 3 3 0 Recommended prerequisite: ETC 1251 Survey of design and installation of various mechanical and electrical systems used in buildings. Covers heat loss and heat gain, comfort control, water systems, system installation and coordination, illumination and other selected topics.

HORTICULTURE

Types and Systems of Agricultural Operations

AOM 2012C - Study of operational and management styles utilized in agricultural (horticultural) situations. Emphasis on process of systems development, administrative definition, product research and development, service and maintenance,

machinery and equipment needs and application, operational analysis for purchasing, communications, transportation, production, and marketing. Lab experiences will include field trips to horticulture concerns for systems analysis.

Introduction to Horticulture and Landscape Technology

HOS 1010C - A study of plant science as it is applied to the horticulture industry. A general survey is made regarding plant culture as it is utilized in all areas of horticulture. Labs include plant productions, plant training, and plant classification sciences.

Soils and Fertilizers

SWS2102C - Prerequisite: HOS 1010 or department approval. Study of soil-water-plant relationships. Emphasis on soil properties (soil science), soil management and soil use (economical as well as social). Includes nursery and greenhouse soils for Florida, elemental nutrient studies and selected research topics.

SUSTAINABILITY-RELATED COURSES (AS OF SEPTEMBER 2012)

The following are courses identified by faculty members as Sustainability-related, through a September 2012 survey. Note that not all instructors may teach these courses with a Sustainability lens. However, with this list as a starting place and the Sustainability Across the Curriculum Faculty Development course now being offered, we will be working toward making college-wide Learning Objectives for these courses include some focus on Sustainability.

Communication:

EAP 400 English for Academic Purposes

SPC 1608 Fundamentals of Speech

SPC1608H Fundamentals of Speech Honors

Architecture, Engineering & Technology Division

EGS 2310 EGS 2310 Engineering Analysis-Statics

Science

ESC 1000 Earth Sciences

MCB 2010C Microbiology

OCE 1001 Introduction to Oceanography

Business, Behavioral & Social Sciences Division

EUH 2000 European History 1

EUH 2001 European History 2

GEA 1000 World Geography

GEA 1200 Physical Geography

GEB 1011 Introduction to Business

REE 1000 Real Estate Principles and Practices

REE 1400, Real Estate Law

PSY 2012 - General Psychology

MAR 2011 Principles of Marketing

MNA 2403 Employment Law

Fine Arts Division

FRE 1120 (French for beginners)

FRE 1121 (Elementary French Two)

Humanities & Foreign Language Division

ENC 1101 English Composition I

HUM 1020 introduction to Humanities

HUM 2220 Greek & Roman Humanities

HUM 2250 Twentieth Century Humanities

FRE 1120 (French for beginners)

FRE 1121 (Elementary French Two)

PAX 1000 Introduction to Peace Studies

Nursing Division

HUN 1001 Basics of Personal Nutrition

Mathematics Division

MAC 1114 College Trigonometry

MAC 2233 Calculus for Business and Social Science

MAP 2302 Differential Equations

STA 2023 Statistical Methods

Curriculum and Articulation

SLS1122 Student Success

SLS1201 Personal Development - Global Perspective

REA 0017C Developmental Reading II

Plan to expand Sustainability Across the Curriculum

Valencia College's Faculty Development department has now launched [Sustainability Across the Curriculum LCTS 3219](#) for 10 Professional Development Units, as a six week hybrid class with two in-person meetings. Participants in this hybrid workshop will examine sustainability concepts, explore available resources and develop a plan to infuse sustainability and ethical responsibility into a current course. Participants will learn a variety of strategies and techniques they can use to make sustainability concepts relevant to students' lives and academic work. Through collaborative learning, including face-to-face and online group work, participants will prepare assessment plans to measure student learning for the sustainability-focused module or unit.

The syllabus for the inaugural class appears on the next page.

LCTS 3219

Sustainability Across the Curriculum

Overview

Participants in this 2-day hybrid workshop will examine sustainability concepts, explore available resources and develop a plan to infuse sustainability and ethical responsibility into a current course. Participants will learn a variety of strategies and techniques they can use to make sustainability concepts relevant to students' lives and academic work. Through collaborative learning, including face-to-face and online group work, participants will prepare assessment plans to measure student learning for the sustainability-focused module or unit.

Course Learning Outcomes

- Participants will be able to discuss sustainability concepts and the benefits of taking a sustainability approach to activities.
- Participants will be able to describe varied actions that faculty members and students can take to reduce environmental impact.
- Participants will be able to provide examples of Valencia College's efforts to green the campuses.
- Participants will be able to relate sustainability to ethical responsibility and discipline concepts, i.e. demonstrate awareness of personal responsibility for stewardship in one's civic, social, and academic life.
- Participants will be able to infuse sustainability-focused concepts into their course.
- Participants will be able to modify the syllabus for one course to incorporate sustainability.
- Participants will be able to prepare an assessment plan to evaluate student learning for a sustainability-focused module or unit.

Requirements

To complete this course and be awarded the 10 PDUs you must

1. Attend and participate in the 2 days of in-person workshops (5 hrs total)
2. For the Blackboard portion, post weekly to your group discussion board on videos viewed and provide feedback on the work of your group members. Some weeks have 2 discussion (seven total).
3. Modify a unit in your course to go through a sustainability lens (People, Planet, Profit) and develop appropriate assessments.

Fall 2012 6-week hybrid course

Instructor: Deborah Green

E-Mail: dgreen1@valenciacollege.edu

Phone: 407-582-1830

Office: West 14-108

Materials

You will be discuss assigned video clips with your group in the online Forums. You are also requested to view the film *Food Inc.* This film is available in all the Valencia College libraries, public libraries and from Netflix. If you absolutely cannot find time to find and view the film, provide a substitute.

Milestones

Week One Oct 5 In Person

- Introduction to Sustainability and examples of using it into your classes.
- In-Person group discussion on the "Planet" part of Triple Bottom Line within your course.

Week Two Due Oct 12

- View Environmental Justice Video clips and post to group discussion on including the "People" part of Triple Bottom Line in your course.
- Using the Curriculum Plan Template develop content to add to your course. Include how it relates to the Triple Bottom Line and how it supports a Learning Centered Approach. Post to group discussion for input.

Week Three Due Oct 19

- View *Food Inc.* (or equivalent) and discuss with group the "Profit" part of Triple Bottom Line.
- Write up draft learning outcomes for your unit. Post to group discussion for input.

Week Four Due Oct 26

- Using the Curriculum Plan Template post your proposed assessments for your sustainability unit. Comment on at least two of your colleagues' plans.

Week Five Due Nov 2

- Post your revised syllabus and full description of unit to group discussion for input.

Week Six Due Nov 9

- In-Person meeting for discussion and feedback on your unit. Prepare to explain your new unit for the entire class in no more than 5 minutes.
- We will discuss how to expand the Sustainability Across the Curriculum effort college-wide.