



Rancho Santiago Community College District
Sustainable RSCCD Committee

April 16, 2014
District Office
Decision Room - #340
3:00 – 4:00 p.m.

Agenda

1. Update on Sustainability Plan Development Process Matsumoto/NAM
 - a. Sustainability Plan Progress – Where are we now?
 - b. Review Existing Measures Matrix
 - c. RSCCD Sustainability Plan – Working Draft
 - d. Future Measures – Brainstorming & Feedback
 - e. Goals – Review Citrus Community College District examples
 - f. Vision Statement – Revisions?
 - g. SAC “Sustain-A-Palooza” Presentation – 4/23

2. Update on Recycling Efforts Morris/Iannaccone

3. Reference Materials from AACC Conference Matsumoto

4. 2014-2015 Meeting Schedule Matsumoto

5. Other

Next Meeting:

May 21, 2014
3:00 p.m.
District Office – Decision Room #340

Mission Statement

The mission of the Rancho Santiago Community College District is to provide quality educational programs and services that address the needs of our diverse students and communities.

The mission of Santa Ana College is to be a leader and partner in meeting the intellectual, cultural, technological, and workforce development needs of our diverse community. Santa Ana College provides access and equity in a dynamic learning environment that prepares students for transfer, careers and lifelong intellectual pursuit in a global community.

Santiago Canyon College is an innovative learning community dedicated to intellectual and personal growth. Our purpose is to foster student success and to help students achieve these core outcomes: to learn, to act, to communicate and to think critically. We are committed to maintaining standards of excellence and providing accessible, transferable, and engaging education to a diverse community.

7.1 Management and Organizational Structure

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
7.1.2.1 Adopt a District Sustainability Policy	The board of trustees delegated authority to the chancellor to establish administrative regulations for sustainable practices in the following areas: environmental education and training; energy, waste management and recycling; resource conservation, facilities, grounds and landscape management; hazardous materials, transportation and air quality; and purchasing practices.	What additional areas of sustainability would the District like to officially address and incorporate in their high level goals? Campus outreach and awareness? Water conservation?	Comprehensive Master Plan	Completed Board Approved on
	The board of trustees recommened the creation of a sustainability plan that addresses district-wide and site-specific needs for each college.	Has work on this plan been started? Have needs of campuses an district been determined?	Comprehensive Master Plan	
7.1.2.2 Appoint a Sustainability Coordinator and Establish an Office of Sustainability				
7.1.2.2.1 Manage the Process				
7.1.2.2.2 Champion for Sustainability Projects				
7.1.2.2.3 Point of Contact				
7.1.2.2.4 Qualities and Credentials				
7.1.2.3 Appoint a Campus Sustainability Committee	In 2011 the Sustainable RSCCD Committee (SRC) was established under the leadership of Chancellor Rodriguez. The membership, which is open to all interested employees of RSCCD, represents students, faculty, staff, and administration. The Committee is organized into subcommittees, each focusing on one of four areas of interest—transportation, facilities, recycling, and newsletter and communication.	What has been accomplished thus far by each of the subcommittees? How often do they meet? And what are they working on now?	Comprehensive Master Plan	Completed
	SAC currently has a Green Task Force, which consists of both faculty and students and works to provide a "greener" SAC campus.	What green actions has this task force accomplished?	Per Michael Collins emailed document (3/19)	
	SAC currently has an Environmental Task Force which serves as a sub-committee to the SAC Facilities Committee.	What is the difference between this and the Green Task Force? What has this committee worked on?	Per Michael Collins emailed document (3/19)	
	Created the committee logo.	Who created the logo and when?		
7.1.2.4 Funding and Resources to support Sustainability Activities	In 2002, voters approved Measure E, a \$337 million general obligation bond to renovate existing campus buildings and construct new classrooms.	How much of this funding is left?	Measure E Text	
7.1.2.5 Employ Sustainability Professionals as Required				
7.1.2.6 Consider Sustainability in Endowment Investments				
7.1.2.7 Integrate Sustainability Planning into Campus Master Plan	Conducted a district-wide survey on sustainability.	When was the survey conducted and what were the results? What came of the survey? Where specific actions implemented or taken?	Comprehensive Master Plan	
	With guidance from the architects and consultants from HMC Architects, the Master Plan committee considered current offerings, potential future programs, current facility challenges, future instructional needs, and the state of infrastructure systems, while striving to incorporate sustainability.		Letter from the President, Santa Ana College Facilities Master Plan	
	The master plan states that the district should update and implement facilities master plans, maximize college and community use of facilities, and incorporate "green" efforts into facilities development and other efforts when cost-effective.	Which "green" efforts have been incorporated within Facilities?	Educational Master Plan, Facilities Master Plan	

7.2 Energy Efficiency

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
7.2.2.1 Set Energy Efficiency Goals	The district has stated that it will participate in the California Community Colleges/Investor Owned Utility (CCC/IOU) Energy Efficiency Partnership		Comprehensive Master Plan. Prop 39 projects. Melrock Study. Other energy savings	
	The district will plan for energy conservation.	Are there measurable conservation goals in place?	Comprehensive Master Plan	
	Currently in fiscal year 2013-2014 and moving forward into 2014-2015, the Administrative Services/Facilities has set goals and measurable objectives related to sustainability efforts in the operation of our campus as well as the products we utilize for the maintenance of our facility.	What are these measurable goals? Which sustainability efforts to they relate to?	Per Michael Collins emailed document (3/19)	Comprehensive Master Plan
7.2.2.2 Evaluate Mechanisms for the Implementation of Energy Efficiency Projects	The district will incorporate sustainable features to improve efficiency and reduce operating costs.	Which specific features?		
7.2.2.3 Conduct a Facility Prioritization Survey				
7.2.2.4 Conduct Comprehensive Facility Energy Audits	In process of compiling baseline documentation to complete a comprehensive audit.		Southern California Edison ; Simone Wolfe email 4/7	In process
7.2.2.5 Implement New and Existing Audit Recommendations				
7.2.2.6 Implement Ongoing Energy Monitoring	The District plans on implementing a monitoring based commissioning program as part of a Prop 39 project. The project requires installation of energy meters to trend base line data against actual results to address energy inefficiencies.		CCC/IOU Approved Prop 39 Projects; Simone Wolfe email 4/7	Planned
7.2.2.7 Participate in Demand Response (DR) Programs				
7.2.2.8 Identify and Take Advantage of Grant and Incentive Programs	Measure Q bond funds will be used for the construction of new utility infrastructure and a complete central plant project.	What new infrastructure?	Per Michael Collins emailed document (3/19)	
	The Central Plant project will provide chilled water to cool most of the conditioned spaces on campus, and saving money and energy by taking advantage of cooling load diversity and off-peak production. It is estimated to reduce campus electrical consumption by 40%. This facility will include a small building, the thermal energy storage (TES) tank, the chilled water distribution pipe loop, and the adaptation of existing building mechanical equipment. The pipe loop will be built under the campus drive. The location of the building and TES tank will be determined during design.		SCC Facilities Master Plan	In design
	We estimate the central plant will reduce the campus electrical bill by approximately 50%; this is for the portion of the bill that pertains to cooling only. The electrical consumption of the campus will be reduced by approximately 40% and demand will be reduced by 50%. We expect the emission of greenhouse gases that result in the production of electricity to be reduced by the same amount as electrical consumption.	What is the status of the chiller plant project?	SCC Facilities Master Plan	
	Buildings A, F, and R received Boiler Replacements at Santa Ana			Completed
	Building D Chiller and received Boiler Upgrades at Santiago Canyon (Double up)			Completed
	Campus-wide LED lighting upgrades have been committed with Prop 39 funds, for both the interior and exterior light fixtures.	Did this actually happen?	Per Michael Collins emailed document (3/19)	Underway
	SAC has committed scheduled maintenance funds into upgrading inefficient boilers and plumbing to seek a reduction in the use of fossil fuels.	Did this actually happen?	Per Michael Collins emailed document (3/19)	In progress
	SCC plans to increase the use of the swimming pool cover by having renters be responsible for putting the pool cover on when finished as a condition of the rental.	Planned implementation date?	Per Steve Kawa emailed document (3/15)	In progress
	SCC recently changed out our one boiler and installed a new boiler that meets the new SCAQMD emission standard.		Per Steve Kawa emailed document (3/15)	In progress
	Implement various projects using the Saving by Design program established by the public utilities. The various project will be designed with the objective of reducing energy and fossil fuel consumption. The projects include: SCC- Building 'D' & 'C' HVAC Renovations SAC- Central Plant and New Infrastructure SAC- Health Sciences Building SAC- Science Technology Engineering Math Building (STEM)		Sempra/SCE; Simone Wolfe email 4/7	In progress
	SCC is looking to install VFD's for our pool water pumps to reduce energy consumption.	Planned implementation date?	Per Steve Kawa emailed document (3/15)	In progress
7.2.2.9.1 Establish an Energy Efficiency Purchasing Policy				
7.2.2.9.2 Efficient Lighting and Lighting Controls	LED Lighting Demonstration (Santa Ana)			Completed
	LED Building + Site Lighting Replacement (Santa Ana)	Project status?		Planned
	LED Lighting Demonstration (Santiago Canyon)			Completed
	LED Building + Site Lighting Replacement (Santiago Canyon)	Project status?		Planned
7.2.2.9.3 Install Energy Efficient HVAC Systems	Existing buildings will need their HVAC systems to be modified to work with the new centralized cooling plant. The existing systems, with the single exception of building "D", have air-cooled DX AC units. The cooling coils and refrigeration compressors in these machines will not work with chilled water. The machines will be converted to chilled water operations by removing and replacing the unsuitable components.		Facilities Master Plan	
	Central Chiller Plant + Building HVAC Upgrades (Santa Ana)	Project status?		Planned
	Science Building HVAC Control System + Re-commissioning (Santiago Canyon)			
	Install occupancy sensor that adjust the speed of exhaust fans to based occupied/ non-occupied status of the lab rooms.			
	Revise sequence of operations for various mechanical equipment including the air handlers, the boilers, the exhaust fans and the fume hood equipment. Adjust air handler scheduling and boiler scheduling for energy efficiencies.	Project status?	Prop 39 Project; Simone Wolfe email 4/7	Construction
	SCC- Building 'D' and 'C'- The District will replace an inefficient chiller unit with a new efficient chiller and install new pumps and VFD equipment. In addition, the existing split-system units and single-packaged systems will be replaced with efficient units.		Scheduled Maintenance Project; Simone Wolfe email 4/7	Planned
	SAC Buildings- The HVAC components in buildings A, B, C, D, E, F, M, N, P, S will require a retrofit of the mechanical cooling systems and chiller piping system to connect to a centralized cooling plant to more efficiently service the campus and buildings.		Measure 'Q' Project; Simone Wolfe email 4/7	Design
	SCC- Install new VAV hot water return and supply actuators to distribute reheat water efficiently.		Scheduled Maintenance Project; Simone Wolfe email 4/7	Planned
	All campus- Install a new robust and more efficient energy management system with a versatile range of controls for the mechanical equipment and lighting systems.		Joe Melendez; Simone Wolfe email 4/7	Planned
	Retrofit air handlers and install new high efficient motors and fans at various buildings.		CCC/IOU Approved Prop 39 Projects; Simone Wolfe email 4/7	Planned
DOC- The chiller equipment, cooling tower, and the pumps will be replaced with more efficient equipment. The equipment will be installed with VFDs to adjust the speed of fans and motors. The existing EMS will be replaced with a new robust and more efficient energy management system with a wide range of controls for the mechanical equipment. The air distribution system will be modified to efficiently distribute air in the building.		Capital Project; Simone Wolfe email 4/7	Construction	
Central Chiller Plant + Building HVAC Upgrades (Santiago Canyon)	Project status?	Comprehensive Master Plan	Planned	
7.2.2.9.4 Energy Efficiency Measuring-Monitoring Base Commissioning	All campuses- Implement advanced energy data and monitoring-based commissioning techniques to maximize long term efficiency and lower energy costs. Install energy meters to continuously track energy data from the building management system (BMS) to compare actual performance to baseline performance.		Simone Wolfe email 4/7	Planned
SCC- Science Building. The District's consultant has developed a Measurement and Verification Plan to evaluate building and/or energy system performance after retro-commissioning the building. The M&V process will evaluate the building and/or energy systems through energy simulation or engineering analysis. The retro-commissioning contractor will install the necessary metering equipment to measure energy use. They will be able to track performance by comparing predicted performance to actual performance, broken down by component or system. Once we implement the M&V, the consultant will evaluate energy efficiency by comparing actual performance to baseline performance.		Simone Wolfe email 4/7	Construction	

7.3 Facilities Operation

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
SAC FACILITIES GOALS 2014	Align SAC Facilities Improvements with the RSCCD Sustainability Initiative. Maximum effort will be made to ensure that all improvements be created and managed sustainably for reduction of fossil fuel consumption, and thus the reduction of the campus carbon footprint. "Green" efforts will be considered as a means of reducing utility costs and improving the campus and community environment.	Details?	Santa Ana College Facilities Meeting (2/18/14)	In progress, Draft
7.3.2.1 Encourage and Support Energy Efficiency Training of Staff	SAC & SCC- The M&O staff have been trained on new energy management systems. Further ongoing training programs need to be developed and implemented to ensure staff is aware of systems updates as they are rolled out.		Simone Wolfe email 4/7	Complete
	All campus- install a new robust and more efficient new energy management system that has a more versatile range of controls for the mechanical equipment and lighting systems.		Simone Wolfe email 4/7	Planning
	SAC utilizes an EMS system for control of much of its HVAC equipment.	Quantitative benefits/ data?	Per Michael Collins emailed document (3/19)	Complete
	The Humanities Building uses day-lighting with sensors that dim the lights as outside lighting increases. SCC- Humanities Bldg: In the pursuit of a LEED credit, all the classrooms were designed with a daylight harvesting lighting system that will adjust lighting levels based on the amount of natural light entering the building. This will allow for energy reduction.		Per Steve Kawas emailed document (3/15); Simone Wolfe email 4/7	Complete
7.3.2.2 Install Energy Management Systems	SCC currently has two energy management systems. The older American Automatrix system controls HVAC and lighting in some of our buildings and we have a ALC system that controls HVAC in our newest buildings. We use these systems weekly to schedule HVAC and lighting for classes and events scheduled in each of our buildings.		Per Steve Kawas emailed document (3/15)	Complete
	SCC will be installing motion detectors in our science labs so that the ventilation system will run at a lower speed thus reducing energy usage when the lab(s) is not in use.	Implementation date?	Per Steve Kawas emailed document (3/15)	Complete
	SCC Retro-commissioning- Install Occupancy sensors to adjust exhaust fan speed and modify the sequence of operations such the mechanical systems are operating efficiently to reduce energy consumption.		Simone Wolfe email 4/7	In progress
	All of the newer buildings at SCC have motion detectors in the classrooms which turn off lights when the room is not occupied.		Per Steve Kawas emailed document (3/15)	
	At the District Office an energy study was conducted in May 2013. The energy study recommended measures to improve the overall energy efficiency, reduce the electrical energy consumption and associated carbon foot print of the building. The project was reviewed by agency partners at Southern California Edison and the Gas Company to determine potential energy rebates the project may qualify for which is currently estimated at \$107,985. Southland Industries is currently conducting a site study.		Board Resolution 14-07	In planning
7.3.2.3 Adjust Temperature Set Points and Schedule Operating Times	As part of the new construction program the District will implement a facilities wide Owner Operating Requirement form that will be used by the Commissioning agents and EMS installer to ensure the EMS systems are customized to the campus needs and the HVAC Equipment scheduling and maintenance is optimized. We are currently implementing this system on the Science Center- Retro Commissioning project and the District Operation Center- HVAC Renovations. The Owner Operating Requirement form will include the following items: Air Temperature Range Operating schedule		Simone Wolfe email 4/7	In progress
7.3.2.4 Optimize Building Occupancy Scheduling	As part of the new construction program the District will implement a facilities wide Owner Operating Requirement form that will be used by the Commissioning agents and EMS installer to ensure the EMS systems are customized to the campus needs. We are currently implementing this system on the Science Center- Retro Commissioning project and the District Operation Center- HVAC Renovations. The Owner Operating Requirement form will include the following items: Normal Occupancy Schedule Pre-occupancy Operating Period Non-occupancy schedule Holiday Schedule Cleaning Schedule		Simone Wolfe email 4/7	In progress
	SAC will evaluate needs related to instruction so as to utilize entire buildings and shut off HVAC and lighting in buildings that are not being utilized.	Status?	Per Michael Collins emailed document (3/19)	
	SAC has regular PM schedules to ensure that the HVAC systems, as old as they are, work.		Per Michael Collins emailed document (3/19)	
7.3.2.5 Optimize HVAC Equipment Scheduling	As we move forward with our new construction program the District will implement a Facilities Wide Owner Operating Requirement form that will be used by the Commissioning agents and EMS installer to ensure the EMS systems are customized to the campus needs and the HVAC Equipment scheduling and maintenance is optimized. We are currently implementing this system on the Science Center- Retro Commissioning project and the District Operation Center- HVAC Renovations. The Owner Operating Requirement form will include the following items: Normal Occupancy Schedule Pre-occupancy Operating Period Holiday Schedule Air Temperature Range Humidity Range Relative Building Pressure Air Filtration Ventilation Noise Criteria Supply Air Temperature Reset Range Preferred CO2 Range CO Alarm Cleaning Schedule		Simone Wolfe email 4/7	In Progress
	Most of SCC's air handlers have VFD's that reduce energy usage when there is a reduction in demand.		Per Steve Kawas emailed document (3/15)	Complete
7.3.2.6 Activate Energy-Saving Features for Appliances and Computers	SCC has installed motion sensors on its PC's which shut down the PC and ancillary equipment.	Where on campus? Administration? Student computer centers?	Per Steve Kawas emailed document (3/15)	
7.3.2.7 Pursue Monitoring-Based(MBCx)/Retro-Commissioning (RCx)	A retro-commissioning project under Proposition 39 to reduce energy consumption by the HVAC system that services SCC's science labs is about to begin. It is expected to be completed by the end of June, 2014.		Per Steve Kawas emailed document (3/15)	

7.4 Sustainable Building Practices

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
7.4.2.1 Establish a Green Building Standard	The district will develop green building design standards.			
	The District is developing standards for efficient landscaping and plant materials, irrigation equipment, low flow plumbing fixtures, low wattage LED lighting, efficient HVAC equipment, Glazing and Fenestration, Insulation, Roofing, Low VOC Painting and Coating, Energy Management Systems, Lighting Controls, Daylight Harvesting Options.	Have these been developed?	Comprehensive Master Plan	In progress
	The sustainability committee recommends the development of sustainable design standards for the renovation of existing buildings to make such buildings more efficient, cost effective, and comfortable for their occupants.	Have these been developed?	Comprehensive Master Plan	
	Our newest building is the 90,000 sq. ft. Humanities is a Gold L.E.E.D. Building. In addition to the photo-voltaic system, some of the other sustainable features include, a block exterior which requires little maintenance, lighting features that coordinates day-lighting with interior lighting and drought tolerant landscaping.	LEED Gold certified or equivalent?	Per Steve Kawa emailed document (3/15)	
	In pursuit of a LEED credit (Heat Island- Roofs), the Humanities and the Gymnasium building were designed and installed with a fluid-applied roof coating that contain low SRI values promoting cooler roofs to avoid heat islands effects. Cooler roofs reduces building cooling loads.			Complete
	The District has implemented a policy to minimize exposure of buildings occupants, indoor surfaces, and ventilation air distribution systems to Environmental Tobacco Smoke. The District prohibits smoking in the buildings except in designated exterior parking lots. The exterior parking areas are at least 25 feet away from entries, outdoor air intakes, and operable windows.			Complete
7.4.2.2 Implement Sustainable Design Practices	In pursuit of LEED credit (Indoor Environmental Quality); The Humanities building was designed with low emitting products to reduce the quantity of indoor air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of occupants.			
	The following adhesives and sealants were designed and installed in accordance with SCAQMD Rule # 1168, limiting the VOC limits: Adhesives and Sealants used for carpet, rubber flooring, vct, drywall, cover base, structural glazing, pvc welding, abs welding, top and trim adhesive.			Complete
	Building H - Low E Window Replacement (Santa Ana)		Comprehensive Master Plan	Planned
	In our regular SAC Facilities Committee meetings, there is a regular report from the Environmental Task Force, many times discussing the implementation of sustainable building practices for SAC campus buildings.	Example bldg practices?	Per Michael Collins emailed document (3/19)	
	In the last two buildings at SAC hand dryers have been installed in restrooms.		Per Steve Kawa emailed document (3/15)	
	The renovation of the Johnson Center will provide modern and efficient infrastructure and technology to support the building use and fulfill the College's objective for sustainable and environmentally responsible operations. Service and receiving facilities will be developed to accommodate recycling, and to separate delivery vehicles from pedestrian circulation.	Renovation date?	Santa Ana College Facilities Master Plan	Planned
7.4.2.3 Use an Integrated Systems Approach in Building Design	The swimming pool and Building E replacement facility will utilize state of the art technology for efficient energy and water use.	Details?	Santa Ana College Facilities Master Plan	
	In pursuit of LEED credits, the Humanities building was designed with outdoor teaching spaces. The exterior teaching environments are designed such that the exterior concrete benches have the capability to provide data and power to electronic devices to facilitate teaching. This promotes a sustainable environment.			Complete
	The new parking structure planned at Santa Ana College is also a potential location for a central cooling plant, which could be integrated into the design. The parking structure also provides an opportunity for integrating a large scale photovoltaic electrical power facility into the campus. The College wishes to consider the feasibility of a rainwater harvesting system, which would use the upper deck as a collection area.	Implementation likelihood/ date?	Santa Ana College Facilities Master Plan	Planned
7.4.2.4 Hire Sustainable Building Design Professionals				
7.4.2.5 Commission New Buildings	The last two major buildings at SCC, the Athletics and Aquatics Center completed in 2012 and Humanities Building completed in 2014, have been through the commissioning process.		Per Steve Kawa emailed document (3/15); Simone Wolfe email 4/7	Complete
	As part of the measure 'Q' construction program, prop 39 projects, and scheduled maintenance projects, facilities will require new and renovation projects contain a comprehensive commissioning plan as part of the project specifications.		Simone Wolfe email 4/7	In progress

7.5 On-Site Generation and Renewable Energy

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
7.5.2.1 Evaluate Clean Cogeneration and Renewable Energy Generation	The district will explore renewable energy opportunities.		Comprehensive Master Plan	
	Photovoltaic System Feasibility Study (Santa Ana)	Results/ date study occurred	Comprehensive Master Plan	Planned
	Photovoltaic System Feasibility Study (Santiago Canyon)	Results/ date study occurred	Comprehensive Master Plan	Planned
	In the SCC facilities master plan, there is a plan to include a energy efficient central plant to provide air conditioning for the entire campus.	See also 7.2.2.9	Per Steve Kawa emailed document (3/15); Simone Wolfe email 4/7	Planned
	SCC's newest building, the 90,000 square foot Humanities Building, has a photo voltaic system them should provide approximately 19% of building's electrical needs.		Per Steve Kawa emailed document (3/15); Simone Wolfe email 4/7	Completed
7.5.2.2 Evaluate Load Shifting Technologies	<p>As part of the Central Plant project, SAC is implementing an ice based chiller system that will make use of load shifting technologies. The chiller will use off-peak energy for production of ice. This technology will the reduce energy costs required to produce the ice.</p> <p>The District will also implament load shifting technologies as part of the future central plant at the SCC campus. The Central Plant project at SCC is included as as part of facilities master planned project.</p>		Simone Wolfe email 4/7	Design
7.5.2.3 Minimize Greenhouse Gas Intensity of Purchased Electricity				
7.5.2.4 Evaluate Participation in Community Choice Aggregation				
7.5.2.5 Identify and Take Advantage of Grant and Incentive Programs	The district will applying for green facilities grants and incentives.	Details?	Comprehensive Master Plan	
	The District is collaborating with various public utlities to take advantage of various incentive programs such as the Savings by Design programs and other similar programs.		Simone Wolfe email 4/7	In Progress

7.6 Transportation, Commuting, and Campus Fleet & Travel

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
7.6.2.1 Understand Commute and Travel Patterns	SAC follows annual compliance with the South Coast AQMD survey requirements in accordance with emission reduction targets.	In what ways does SAC ensure that the campus is compliant ?	Per Michael Collins emailed document (3/19)	
7.6.2.2 Encourage and Enhance Public Transportation and Ridesharing Options				
7.6.2.2.1 Utilize the local MTA Programs	SAC has active engagement via the RSCCD Sustainability Committee in alternative commuting opportunities, including a tie to OCTA.	Current status?	Per Michael Collins emailed document (3/19)	
	OCTA has a bus stop in the center of the SAC campus off Campus Road. The bus stop is convenient for student and staff thereby promoting the use of public transportation.		Simone Wolfe email 4/7	Complete
7.6.2.2.2 Increase Awareness	The district will be partnering with the Air Quality Management District to raise community awareness.	Has this happened?	Comprehensive Master Plan	
7.6.2.2.3 Facilitate Public Transit Use				
	The district researched the student public bus pass program.	Results? Plans moving forward?	Comprehensive Master Plan	
7.6.2.2.4 Incentivize Public Transportation and Carpooling	Because SCC is located in a suburb of the City of Orange, there are not many options to get to SCC. There is one bus line that comes from the west and we are at the very end of the line. There are discounted bus passes to encourage students and staff to come on the bus. However, staff and students coming from any other direction have to drive to get to the campus.		Per Steve Kawa emailed document (3/15)	
7.6.2.2.5 Facilitate Ridesharing				
7.6.2.2.6 Facilitate Car Sharing				
	The district is researching the feasibility of electric vehicles for RSCCD use.	Status?	Comprehensive Master Plan	
7.6.2.2.7 Encourage Fuel Efficient Vehicles for Commuters	The district will research the feasibility of campus electric vehicle charging stations.	Will SCC be installing charging stations as well ?	Comprehensive Master Plan	
	Electric Car Charging Stations (Santa Ana) SAC is installing two (2) electric vehicle charging stations within its Lot 11 expansion project for use by the campus community.	Estimated completion date?	Comprehensive Master Plan Per Michael Collins emailed document (3/19)	In progress
	Electric Car Charging Stations (Santiago Canyon)	Status?	Comprehensive Master Plan	Planned
7.6.2.3 Encourage and Enhance Bicycling Options	SAC will partner with the City of Santa Ana on a bike-friendly city initiative.	Details?	Comprehensive Master Plan	
7.6.2.3.1 Install Bike Racks and Bathroom Facilities with Showers	SAC purchased additional bike racks in 2013-2014 to encourage alternative transportation options		Per Michael Collins emailed document (3/19)	Complete
	Approximately two years ago, SCC added three bicycle racks on campus to the three we have had for years. There has been some increase in usage but none have ever been seen fully utilized.		Per Steve Kawa emailed document (3/15)	Complete
7.6.2.3.2 Increase Campus Bike Friendliness	The district held the 2013 Ride to Work Day contest.	Is this an annual event? Participation results? / Event success?	Comprehensive Master Plan	
7.6.2.3.3 Facilitate Bike Sharing				
7.6.2.4 Improve Campus Fleet & Travel				
7.6.2.4.1 Reduce or Improve Petroleum Powered Vehicles and Equipment	SAC has replaced gas powered maintenance carts in and purchased electric powered carts.		Per Michael Collins emailed document (3/19)	Complete
	SAC has upgraded one of its security vehicles to a Prius hybrid vehicle.		Per Michael Collins emailed document (3/19)	Complete
7.6.2.4.2 Purchase or Lease Alternative Fuel Vehicles				
7.6.2.4.3 Facilitate Telecommuting & Virtual Meetings				
7.6.2.5 Enhance Student Distance Learning	Another priority for the college will be the expansion and enhancement of distance education course offerings. A full-time faculty coordinator will be hired, training on effective online course design will be implemented, and an outreach and marketing plan will be developed. To support distance education and other technology advancements, funding will be needed for faculty and staff to attend conferences and workshops.	Status, was coordinator hired?	Santiago Canyon Facilities Master Plan	

7.7 Water, Wastewater, and Sustainable Landscaping

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
7.7.2.1 Establish Water Conservation Goals	The district will plan for water conservation.	Details ?	Comprehensive Master Plan	
7.7.2.2 Implement Water Conservation Strategies	Irrigation of the Soccer Fields with Recycled Water (Santiago Canyon)	Quantitative savings data?	Comprehensive Master Plan	Planned
7.7.2.2.1 Utilize Water Conservation Programs from the local Water Utility	SCC is currently working with the Irvine Ranch Water District (IRWD) to utilize reclaimed water to irrigate our athletic fields. Although we are in the area served by the Irvine Ranch Water District, our water is provided by the City of Orange Water Department. IRWD had already received approval from the City of Orange. Preliminary information is if we commit to a \$70,000 construction cost, IRWD will proceed with the construction. It is estimated that we will recover the cost of construction in 5-6 years in the form of reduced water charges.	Implementation date?	Per Steve Kawa emailed document (3/15)	
7.7.2.2.2 Rainwater Capture				
7.7.2.2.3 Connect to Reclaimed Water if Available				
7.7.2.2.4 Install Low Flow Water Equipment	SAC has installed new efficient, low flow irrigation systems in all of its new perimeter landscape.	Quantitative savings data?	Per Michael Collins emailed document (3/19)	
	SAC has installed efficient irrigation valves to reduce its water use on campus.	Quantitative savings data?	Per Michael Collins emailed document (3/19)	
	The new Humanities and Gymnasium buildings were designed with low-flo flushometers with automatic operation providing reduced water usage.		Simone Wolfe email 4/7	Complete
	SCC installed some waterless and low-flush urinals and would like to install more when additional funding becomes available.	Quantitative savings data?	Per Steve Kawa emailed document (3/15)	
7.7.2.2.5 Install Artificial Turf	Synthetic Turf Soccer Field (Santa Ana) SAC has installed a new tournament quality artificial turf soccer field to reduce the use of potable water for irrigation as well as engine combustion required for maintenance	Quantitative savings data?	Comprehensive Master Plan Per Michael Collins emailed document (3/19)	Completed
	Synthetic Turf Softball Field (Santiago Canyon)	Quantitative savings data?	Comprehensive Master Plan	Completed
7.7.2.3 Reduce Storm Water, Sewer Discharges, and Water Pollution				
7.7.2.3.1 Raise Awareness to Reduce Discharges and Pollutants				
7.7.2.3.2 Reduce Storm Water Runoff	West Campus Storm Water Percolation Field (Santa Ana) Storm Water Management Storm water management has been a concern to the College and an environmental issue in Southern California. A long dry season followed by frequent, sometimes heavy rains contributes to the flushing of pollutants into the Santa Ana River and the Pacific Ocean. The Master Plan recommendations include the incorporation of best management practices which use natural processes to filter and retain or slow the flow of storm water. Opportunities for bio swales and rain gardens are shown on this plate. Rain gardens will be used to retain and percolate water for building roof drains. They will be incorporated in attractive outdoor seating areas near the entrances of buildings. Rain gardens will be engineered to overflow to the storm drain system if needed. Bio swales will be incorporated in large areas of impervious paving, including roads and parking lots. Currently most of these areas are drained by surface flow to the southwest, ultimately draining to the box culvert under Washington Street. The city drainage system has a finite capacity, and efforts to retain or detain storm water on the campus significantly reduce the College's environmental impact. As future campus development occurs, the College will explore the feasibility of harvesting storm water to replace potable water used for irrigation and other uses. Efforts to promote sustainable storm water management is a key part of Santa Ana College's planning for environmental stewardship. See storm water management strategies on page 110.		Comprehensive Master Plan SAC Facilities Master Plan, Page 54 & 110	Completed
	Southwest Campus Storm Water Percolation Field (Santa Ana) As part of Lot # 11 expansion project, the SAC campus will have a second retention basin that will manage storm water runoff to prevent flooding and downstream erosion, and improve water quality going to the Santa Ana River or down stream to the city stormwater drains. The captured storm water runoff eventually empties out at a controlled rate downstream and removes any excess sediment.	Status?	Simone Wolfe email 4/7	Construction
	The District implements erosion control systems and best management practices on our construction program. The District hired a Storm Water Pollution Prevention Program consultant to inspect, monitor, and advise construction personnel and the District on best practices.		Simone Wolfe email 4/7	Completed
	The District will implement a District Wide Storm Water Management Plan. We will hire a consultant to help us develop this plan, obtain agency approval, as required, and implement the plan on District wide level.		Simone Wolfe email 4/7	Planned
	SAC has installed and is continuing to grow its underground storm water percolation fields, along with new storm water infrastructure to reduce the impact on the surrounding City of Santa Ana's storm water discharge problems		Per Michael Collins emailed document (3/19)	
7.7.2.3.3 Reduce Chemical Usage				
7.7.2.4 Adopt Sustainable Landscaping Practices	Campus Landscape Improvement Projects (Santa Ana)	Details ?	Comprehensive Master Plan	Planned
	Coastkeeper Garden (Santiago Canyon) SCC leases some of our property to the non-profit Orange County Coastkeepers who has built a demonstration garden open to the public. They provide a variety of drought tolerant gardens that homeowners can view and possibly install at their homes and significantly reduce water consumption.	Details ?	Per Steve Kawa emailed document (3/15)	Completed
	Campus Landscaping (Santiago Canyon)	Specific projects? Status?	Comprehensive Master Plan	Planned
	In pursuit of a LEED credit (Heat Island- Non roof), the new Humanities building and the Science building were designed with site hardcape that reduces solar reflection thereby reducing the heat island effects associated with certain site pavers. The site paver system has a solar reflective index (SRI) value less than the USGBC recommended value. Cooler hardscape reduces building cooling loads.		Simone Wolfe email 4/7	Complete
	The landscape designer for the SCC measure 'E' projects designed native or adaptive plant materials to reduce or eliminate irrigation requirements. Where irrigation is required, the landscape designer used high-efficiency equipment.		Simone Wolfe email 4/7	Complete
	In pursuit of a LEED credit (Heat Island- Roofs), the Humanities and the Gymnasium building were designed and installed with a fluid-applied roof coating that contain low SRI values promoting cooler roofs to avoid heat islands effects. Cooler roofs reduces building cooling loads.		Simone Wolfe email 4/7	Complete
7.7.2.4.1 Adopt the "Bay Friendly Landscape Guidelines" or other sustainable landscaping guidelines				Complete

7.8 Solid Waste Reduction and Management

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status	
7.8.2.1 Create Waste Reduction Goals	Surveyed existing practices/ Researching best practices.	Date conducted/ Action taken?	Comprehensive Master Plan		
7.8.2.2 Maximize Programs Offered by Contracted Waste Hauler	The district plans on improving waste management contracting.	Actions taken?	Comprehensive Master Plan		
	The current waste management contract with CR&R is effective through 2016. The contract, however, does not call for recycling efforts and it was determined that all waste is being co-mingled and put in one truck. The subcommittee will do more research to explore the possibility of rebidding the contract to meet district's requirements for recycling.	Contract status?	RSCCD Minutes 03/20/13		
	SCC will investigate the use of other trash haulers that will provide recycling services and help promote recycling.	Status?	Per Steve Kawa emailed document (3/15)		
7.8.2.3 Reduce the Waste Stream to the Landfill	The district and colleges will act to make resource conservation an integral part of its waste reduction and recycling programs.	Measurable goals?	Administrative Regulations, Environmentally Preferable Practices, Recycling Waste		
	The district and colleges will integrate the concept of resource conservation, including waste reduction and recycling, into its environmental programs.	Measurable goals?	Administrative Regulations, Environmentally Preferable Practices, Recycling Waste		
	The district and colleges will decrease the amount of waste of consumable materials by: a) reduction of the consumption of consumable materials wherever possible; b) full utilization of all materials prior to disposal; and c) minimization of the use of non-biodegradable products whenever possible.	Measurable goals?	Administrative Regulations, Environmentally Preferable Practices, Recycling Waste		
	Despite the increase in student population and in facilities over the past few years, SCC has been able to avoid an increase in what goes to landfills and believes it can do even better with recycling campaigns.	Recycling campaign details?	Per Steve Kawa emailed document (3/15)		
7.8.2.3.1 Raise Awareness of Waste Reduction	Representatives of the district and colleges will actively advocate, where appropriate, for resource conservation practices to be adopted at the local, regional, and national levels.	Details?	Administrative Regulations, Environmentally Preferable Practices, Recycling Waste		
7.8.2.3.2 Minimize Unnecessary Waste	SCC Facilities committee has expressed interest in advertising recycling with promotional activities that explain the benefits of recycling.	Implementation plans?	Per Steve Kawa emailed document (3/15)		
7.8.2.3.3 Reduce Paper Use	SCC Facilities committee hopes to promote the use of electronic media vs. using so much paper for syllabi and class handouts.	Details? Action plan?	Per Steve Kawa emailed document (3/15)		
7.8.2.3.4 Minimize Use of Disposable Items	The SCC's copy center's standard is to make all copies double-sided. Requestors need to specify single-sided copies otherwise it defaults to double-sided. Also, if white paper is tossed in the trash and it is unused on one-side, it's collected and used in the math tutoring center as scratch paper.		Per Steve Kawa emailed document (4/6)		
7.8.2.3.5 Facilitate Swap Shops and Flea Market					
7.8.2.3.6 Donate Reusable Goods					
7.8.2.3.7 Support Producer Responsibility Programs	The district will purchase, where financially viable, recycled products. The district will also encourage suppliers, both private and public, to make recyclable products and unbleached paper products available for purchase.	Details? Plans to incorporate into an official purchasing policy?	Administrative Regulations, Environmentally Preferable Practices, Recycling Waste		
7.8.2.4 Improve Existing Recycling Programs	The district and colleges will cooperate with, and participate in, recycling efforts of service area cities and the county. As systems for the recovering of waste and recycling are developed within service area cities and the county, the district will participate by appropriately separating and allowing recovery of recyclable waste products.		Administrative Regulations, Environmentally Preferable Practices, Recycling Waste		
	Mario Salazar – ASG Environmental Awareness Commissioner brought forward two concerns to the committee. Students are concerned about recycling efforts on campus. Currently community members come on campus and recycle bottles and cans from the trash receptacles for their own needs. Efforts are being made to build a more robust recycling program that would include construction debris, cardboard, mulching and green waste. A higher level of sustainability will be included when bidding waste /management services. There are discussions in regards to a district wide program at the SRC meetings (Sustainable RSCCD). Mario will be attending this district committee meeting representing SAC ASG. At the February SAC Facilities committee, Jim Kennedy will provide an update on the SRC progress towards the district wide recycling program. Dr. Collins welcomed the combined efforts of the ASG, Maintenance & Operations and Student Services toward recycling efforts on campus.		Santa Ana College Facilities Meeting (2/18/14)		
	It was noted that some of the drinking fountains on campus do not work properly or do not work at all. The idea of including hydration stations in plans for future buildings was suggested. Campus could sell reusable water containers				
	In pursuit of a LEED credit (Storage and Collection of Recyclables), the Humanities Building was designed such that free-standing recyclable/ trash receptacles are strategically placed in certain key locations of the building to promote recycling.			Simone Wolfe email 4/7	Complete
7.8.2.4.1 Improve Source Separation of Recyclables	Paper Collection and Recycling (Santiago Canyon)	Details ?		Completed	
7.8.2.5 Collect and Sell All Recyclable Material	SCC Facilities Committee plans to place more recycling containers throughout the campus.	Implementation plan ?	Per Steve Kawa emailed document (3/15)		
7.8.2.6 Green Waste and Food Waste Composting	SCC's current contract agreement with the landscape contractor requires that none of the green waste goes to landfill but goes toward composting.		Per Steve Kawa emailed document (3/15)		
7.8.2.6.1 On-site Composting					
7.8.2.6.2 Third Party Green Waste and Food Waste Composting					
7.8.2.6.3 Provide Biodegradable Silverware and Dishware					
7.8.2.7 Adopt Construction and Demolition (C&D) Recycling	As part of the measure 'E' and measure 'Q' building program, our consultants are required to include a construction waste management specification so that contractors properly separate recyclable material from the construction waste to promote recycling on the construction program. It is required for the Contractor to separate construction and demolition waste materials generated on-site in three categories 1. Re-use or recycle on-site 2. Transport to approved recyclers, 3. Transport to legally designated landfills for the purpose of recycling, salvaging or reusing a minimum of 50% of construction and demolition generated. The contractor is required to provide a monthly report to verify the target amounts.		Simone Wolfe email 4/7	In Progress	

7.9 Green Purchasing

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
7.9.2.1 Sustainable Food Purchasing		Are any organic, fair-trade, or locally sourced items available for sale at campus cafeterias and/or vending machines?		
7.9.2.1.1 Buy Locally Grown and Organic Food				
7.9.2.1.2 Track and Reduce Food Waste				
7.9.2.1.3 Offer Trays in Dining Facilities on a Request-Only Basis				
7.9.2.2 Green Purchasing Practices		Are any biodegradable, reusable, post-consumer, etc. products for sale at campus student stores? Does the District purchase any post-consumer goods?		
7.9.2.2.1 Establish Requirements for Minimum Recycled Content	The Director of Purchasing will work with departments to establish minimum recycled content standards for designated recycled products to maximize recycled product availability, recycled content, and competition.	Have standards been established, distributed, and enforced?	Administrative Regulations, Environmentally Preferable Practices, Recycling Waste	
7.9.2.2.2 Establish Standards for Green Purchasing	A majority of SCC's custodial paper products are identified as green paper products. A majority of SCC's custodial cleaning products are environmentally friendly.	Product brands? Part of a purchasing policy ?	Per Steve Kawa emailed document (3/15)	
	The district may require procurement of designated recycled products or recycled products above the levels required by this regulation.		Administrative Regulations, Environmentally Preferable Practices, Recycling Waste	
	The district shall require its contractors and consultants to use and specify recycled products in fulfilling contractual obligations whenever practicable.		Administrative Regulations, Environmentally Preferable Practices, Recycling Waste	
	The district and colleges shall promote the use of recycled products publicizing its procurement regulation whenever practicable.		Administrative Regulations, Environmentally Preferable Practices, Recycling Waste	
	The Director of Purchasing shall coordinate the implementation of this regulation. He/she will establish a list of recycled products that shall be purchased by all departments whenever practicable and will develop the mechanism for maintenance, additions, and deletions to the list of recycled products available for procurement. Maintenance of the list will include addition of new products containing recycled material as they become available and make available to departments specifications on the new product along with a list of suggested uses.	Is this list available?	Administrative Regulations, Environmentally Preferable Practices, Recycling Waste	
	The district and colleges shall, whenever possible, use recycled products and recycled materials to meet their needs. This regulation is enacted to demonstrate compliance with the Waste Management Reduction Act and foster market development for recycled products.		Administrative Regulations, Environmentally Preferable Practices, Recycling Waste	
	The district, colleges and departments shall use recycled products whenever practicable. Special emphasis shall be placed on the purchase of products manufactured with post-consumer recycled materials.		Administrative Regulations, Environmentally Preferable Practices, Recycling Waste	
7.9.2.2.3 Require Deliveries to be Made Less Frequently and in Larger Quantities	Purchasing has previously established a waste management program to increase the amount of recyclables. They have made it a point to start procurement of Green Seal products for the Janitorial staff to reduce VOC emissions.		Simone Wolfe email 4/7	In progress
7.9.2.2.4 Bulk Purchasing				
7.9.2.3 Socially Responsible Purchasing				

7.10 Student and Curriculum Development

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status	
7.10.2.1 Create a Sub-Committee in the Academic Senate Devoted to Sustainability	SCC's Associated Student Government(ASG) has recently appointed a student to a position that looks at environmental issues including recycling.	What has this position accomplished?	Per Steve Kawa emailed document (3/15)		
7.10.2.2 Provide Professional Development and Create a Faculty Forum					
7.10.2.3 Utilize Different Pathways to Integrate Sustainability in the Curriculum	<p><u>Courses that integrate sustainability:</u></p> <p>Santa Ana College Environmental Geology 140 - This course focuses on the study of urban geologic hazards: earthquakes, groundwater pollution, flood potential, landslides and creep, soil expansion, coastal erosion, and volcanic hazards. Biology 200 - The Environment of Man: Sustainability is fundamental to the class, as it touches on environmental problems such as energy, resources, pollution, land use, population and food, including economic and political factors.</p> <p>Santiago Canyon College Biology 111- Marine Biology Biology 128 Natural History of the California Coast Biology 200 - The Environment of Man Biology 212 – Animal Diversity and Ecology Biology 214 – Evolution and Plant Diversity Biology 259 - Introduction to Environmental Biology: This course includes the study of ecosystems, population dynamics, classification, diversity of plant and animal species, effects of pollutants at both the cellular and organismal levels and principles of ecology. Geology 140 – Environmental Geology Geology 150 – Introduction to Oceanography</p>		RSCCD Online Newsletter ; Kimo Morris email 4/3	Completed	
	Currently, SAC has curriculum in Engineering 201 that focuses on energy efficiency and building design, including thermal massing and natural ventilation as cooling methods. Students inquire and work with SAC Facilities team on identifying potential renovation projects on campus.			Per Michael Collins emailed document (3/19)	
	The District implemented a District-wide wireless infrastructure project to facilitate internet connectivity for students and staff . The new wifi system will facilitate the ability for students and staff to connect and promote learning.				Complete
7.10.2.3.1 Adding a Component to an Existing Course Outline of Record					
7.10.2.3.3 Create a New Certificate or Degree Program	<p>Water Utility Science Program: The Water Utility Science program envisions being recognized as a leader in the field by being responsive to the needs of the industry through the offering of a wide range of courses that directly apply to water distribution, treatment, and wastewater management.</p> <p>The Water Utility Science program provides a great opportunity to be trained in a growing and important field around sustainability. This combination of professional/technical classes and hands-on experience makes the learning process important and dynamic! The certificate program is designed to prepare students for entry-level jobs in the water distribution, treatment and water reclamation industries. The associate of science degree provides coursework and internship experience designed to provide an overview of a wide range of environmental career opportunities. For more information, visit the Water Utility Science website.</p>		http://rscdd.edu/Discover-RSCCD/Documents/sustainable-rscdd/2013/sustainable-rscdd-january-2013.htm#green corner Educational Master Plan; Page 90		
	SCC has a prominent Water Utility Science Program and has a class section entitled "Water Conservation Practitioner."			Per Steve Kawa emailed document (3/15)	
	Santiago Canyon College may want to consider environmental programs for future development, building on the existing Water Utility Science program. When asked what kinds of programs and services the college should offer in the future, participants touched on developing programs in the areas of High Technology and Green Technology . For example, participants noted that "The college needs to not only add on to its signature programs in Water and Surveying, but [also] develop green technology programs.", "Can't we get Donald Bren to create that program here? Create an Environmental Studies-Sustainable Studies program."			Santiago Canyon Master Plan	
7.10.2.4 Advocate for Change at the Statewide Level	Dr. Kimo Morris spoke about the 2013 Higher Ed Sustainability Conference to be held at the University of Santa Barbara June 23-27, 2013. It was recommended that the district send representatives – from both the SRC and the Campus Facilities Committee.		Sustainable RCCD Sommittee Meeting Minutes (3/20/2013)		
7.10.2.5 Training Opportunities for Students					
7.10.2.5.1 Assist in Green Internship and Job Placements					
7.10.2.5.2 Facilitate Hands-On Campus Projects	Biology faculty also oversee the Green Task Force, which works to identify recycling projects and puts together Earth Day events		Per Michael Collins emailed document (3/19)		
	<p>Recently, a representative of the Associated Student Government (ASG) committed to personally getting involved with re-cycling and will attempt to generate student interest. The Administrative Services Department agreed to provide re-cycle bins for cans and bottles. Students will regularly empty them along with the current containers used for paper. The students will then deliver the collections to re-cycling centers.</p> <p>Students want to jointly explore the following areas: A. Replacing old restroom faucets that have conventional on/off knobs with automatic shutoff valves. B. Changing the college landscaping requiring a high amount of irrigation to drought-tolerant landscaping. C. Look at having water bottle filling stations so that students/staff will not discard their water bottles.</p>	Have these been explored?	Per Steve Kawa emailed document (3/15)		
7.10.2.5.3 Encourage Social Service					
7.10.2.5.4 Invite Notable Speakers	At last year's earth day, we brought in guest speakers and had several exhibits including electric and hybrid vehicles.		Per Steve Kawa emailed document (3/15)		
7.10.2.5.5 Support Student Committees & Clubs	The district will support student recycling activities; The district will engage student organizations and clubs-		Comprehensive Master Plan		
	Collegiate Alliance for Positive Enviromnetal Stewardship Engineering Club (CAPES). Students involved participate in activities that focus on sustainable topics such as sustainable design, building with solar, etc.		Kimo Morris email 4/7		

7.11 Campus and Community Outreach and Awareness

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status	
7.11.2.1 Create a Website Dedicated to Campus Sustainability	Created and updating the RSCCD sustainability web page.	Who created the webpage and who is responsible for updating?	Comprehensive Master Plan	Complete (?)	
7.11.2.2 Hold Workshops and Presentations					
7.11.2.3 Sustainability Events					
7.11.2.3.1 Coordinate Sustainability Events	The district worked with student clubs to hold the 2013 Earth Day events.		Comprehensive Master Plan	Complete	
	There was an Earth Day program and events including presentations, workshops, etc.		Per Michael Collins emailed document (3/19)		
	The Transportation Subcommittee proposes that Friday, May 13, be designated as "Ride Your Bike to Work Day" for the district. A flyer was presented to the committee and discussion followed which included prizes for participants	Annual event?		Sustainable RCCD Sommittee Meeting Minutes- March 20, 2013	
	It was reported that the SAC "Sustain-a-Palooza" event was a success, with overflowing crowds, informational presentations, speakers and involvement by a number of the campus clubs.	Additional event details?		Sustainable RCCD Sommittee Meeting Minutes- March 20, 2013	
	The only on-going activity that the students have been doing at SCC is a periodic campus clean-up day.			Per Steve Kawas emailed document (3/15)	
7.11.2.3.2 Hold Sustainability Challenges and Competitions	Held a sustainability tag line contest.		Comprehensive Master Plan	Complete	
7.11.2.4 Campus Specific Outreach and Awareness					
7.11.2.4.1 Post Behavioral Reminders					
7.11.2.4.2 New Student Orientation					
7.11.2.4.3 Campus Newspaper or Newsletter	Publishing the sustainable rscdd e-newsletter.	How often is this published?	Comprehensive Master Plan	Complete/ On-going ?	
7.11.2.5 Community Specific Outreach and Awareness	Fostering community partnerships.	What kind of pernetships?	Comprehensive Master Plan		
7.11.2.5.1 Cooperate with Local Governments					
7.11.2.5.2 Partner with Local K-12 Schools					
7.11.2.5.3 Encourage Volunteer Work and Community Service					

7.12 Create a Climate Action Plan

Sustainability Template Section	Existing Sustainability Action	Additional Information Needed	Source Document	Status
7.12.5.1 American College & University Presidents' Climate Commitment (ACUPCC)	The Sustainable RSCCD Committee has discussed the possibility of becoming a signatory to the American College and University Presidents' Climate Commitment (ACUPCC). Signatories of the ACUPCC agree to complete a greenhouse gas (GHG) inventory; create an action plan with targets and milestones for reducing emissions; integrate sustainability into curriculum; and make their plans, inventory, and progress reports publicly available.	Has this possibility been explored further?	Comprehensive Master Plan	Planned

Source Document	File Location
Comprehensive Master Plan	http://rscdd.edu/Trustees/Documents/Master-Plan/rscdd-cmp-final-09192013.pdf
Santiago Canyon Facilities Master Plan	http://www.sccollege.edu/About/Documents/SCC%20Facilities%20Master%20Plan.pdf
Santa Ana College Facilities Master Plan	http://www.sac.edu/AdminServices/facilities/Documents/FacilitiesMasterPlan2011.pdf
Measure E	http://rscdd.edu/Bond-Projects/Pages/About-Measure-E.aspx
Letter from the President, Santa Ana College Facilities Master Plan	http://www.sac.edu/AdminServices/facilities/Documents/FacilitiesMasterPlan2011.pdf
Santa Ana College Facilities Meeting (2/18/14)	https://www.sac.edu/AdminServices/facilities/Documents/BBBFeb%2018%20meeting%20presentation.pdf
RSCCD Minutes 03/20/13	https://www.rscdd.edu/Discover-RSCCD/Documents/SRC/2012-2013/Sustainable%20RSCCD%20Meeting%20Notes%20-%2003.20.13.pdf
Administrative Regulations - Environmentally Prefereable Practices - Recycling Waste	http://rscdd.edu/Trustees/Administrative-Regulations/Pages/Admin-Regulation-BusFin-Support-Serv-AR3701.aspx
RSCCD Online Newsletter	http://rscdd.edu/Discover-RSCCD/Documents/sustainable-rscdd/2013/sustainable-rscdd-january-2013.htm#green corner



Rancho Santiago Community College District Sustainability Plan

WORKING DRAFT Version 1

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ACKNOWLEDGMENTS

Rancho Santiago Community College

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- [Campus Committee Members – Name and Title]
- [Other Acknowledgements – Name and Title]

Orange County

- [Local Government Official – Name and Title]
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- [Electric and/or Gas Utility – Name and Title]
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Local Community Contributors

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SECTION 1.

EXECUTIVE SUMMARY

As with many public sector agencies, the Rancho Santiago Community College District (RSCCD) recognizes the environmental, economic, and social benefits of resource efficiency and sustainability. The passage of the California Global Warming Solutions Act (AB-32) and the establishment of a Sustainability Policy by the California Community Colleges (CCC) Board of Governors have made it imperative for Community Colleges to develop an organized, comprehensive approach that incorporates the elements of sustainability, satisfies state regulations, takes advantage of available resources and complimentary programs, and adopts the Best Practices of others who are further along this path.

Sustainability is defined as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” The purpose of this Sustainability Plan is to prepare the Rancho Santiago Community College District for the anticipated environmental and regulatory challenges of the 21st century, to guide the campus towards becoming a more sustainable institution, and to prepare students for the green economy.

RSCCD is a two-campus District: Santa Ana College and Santiago Canyon College. The District has prepared this Plan to encompass the activities, goals, and priorities of each College. The following Sustainability Plan articulates the vision, goals, and objectives established by the District for sustainability, as well as the strategies to meet these goals. This Plan has been developed by the Sustainable RSCCD Committee (SRC). The SRC has developed this Sustainability Plan in coordination with the many different campus stakeholders, including students, faculty, and staff, to ensure that the plan meets the different needs of the campus.

Vision Statement

The Rancho Santiago Community College District holds sustainability to be a foundational principle in its current and future development.

As a responsible steward of natural resources and the environment, the District will endeavor to minimize its impact on the environment by implementing best practices for conserving resources, reducing waste, implementing energy reduction and alternative energy generation strategies, constructing efficient buildings, and by developing partnerships that will further these activities.

SECTION 2. BACKGROUND

2.1 HISTORY OF SUSTAINABILITY EFFORTS TO DATE

Insert a summary of the work the campus has performed to date in the area of sustainability. All past sustainability projects and efforts should be fully recognized.

2.2 CREATION OF THE SUSTAINABILITY PLAN

This section describes the process for the creation of the Sustainability Plan. The flow chart to the right reflects the process flow that is used in the Sustainability Template.

To create this Sustainability Plan, RSCCD followed the process and utilized the tools provided in the California Community Colleges Sustainability Template. The process is illustrated in the flow chart at right. The implementation of the sustainability planning process and the resulting Sustainability Plan are described in the following chapters.



2.3 CAMPUS SUSTAINABILITY COMMITTEE

In order to manage the process and to develop this Sustainability Plan, the District established the Sustainable RSCCD Committee (SRC), consisting of faculty, staff, and students to provide representation from the different campus stakeholders. The Committee is responsible for developing and implementing the sustainability programs and projects described in this plan to achieve the sustainability goals.

The SRC chair is [Name], [Title], and can be reached at [email] or [phone number].

2.4 THE POLICY CONTEXT OF SUSTAINABILITY PLANNING

Colleges may need to update this section as major legislation or regulations relating to sustainability are adopted.

Sustainability can provide environmental, economic, and social benefits to campuses. However, there are other motivations for the Rancho Santiago Community College to pursue these practices. The State of California has been on the forefront of efforts in establishing aggressive policies and standards for environmental protection and reducing greenhouse gas (GHG) emissions that contribute to global

warming. In 1970, the State adopted the California Environmental Quality Act (CEQA) with the goal to inform governments and the public about potential environmental impacts of projects. From 2005 onward, legislation has been passed to directly regulate GHG emissions by utilizing incentive mechanisms, cap-and-trade programs, and mandatory reporting while encouraging voluntary activities such as purchasing emissions offsets and offering renewable energy certificates (RECs). Compliance with state policies and regulations regarding these issues is an important factor for consideration by the Rancho Santiago Community College.

The following outlines the numerous policy and regulatory drivers that contributed to the creation of this Plan.

2.4.1 CCC BOARD OF GOVERNORS ENERGY AND SUSTAINABILITY POLICY

To encourage the CCCs to a more sustainable future, the CCC Board of Governors approved the Energy and Sustainability Policy in January 2008, which puts forth goals for each campus to reduce their energy consumption from its 2001-02 baseline by 15 percent by 2011-12. It also sets goals for minimum efficiency standards of new construction and renovation projects and provides an incentive of 2 percent of construction cost for new construction projects and 3 percent of construction cost for modernization projects. The policy also sets goals for energy independence through the purchase and generation of renewable power and energy conservation through the pursuit of energy efficiency projects, sustainable building practices, and physical plant management.

The CCC Board of Governors Energy and Sustainability Policy can be found here:

http://www.cccco.edu/Portals/4/Executive/Board/2008_agendas/january/3-1_Attachment_CCC%20Energy%20and%20Sustainability%20Policy%2011-9-07%20FINAL.pdf

2.4.2 CALIFORNIA STATE CLIMATE REGULATIONS

2.4.2.1 State of California Executive Order S-3-05

Executive Order S-3-05 was signed by the Governor of California in 2005, thereby identifying the California Environmental Protection Agency (Cal/EPA) as the primary state agency responsible for establishing climate change emission reduction targets throughout the state. The Climate Action Team, a multi-agency group comprised of various state agencies, was formed to implement the Executive Order S-3-05. Shortly thereafter in 2006, the team introduced GHG emission reduction strategies and practices to reduce global warming. These measures are aimed at meeting the Executive Order's long term goal of reducing GHG emission to 80 percent below 1990 levels by 2050.

2.4.2.2 Global Warming Solutions Act of 2006 (AB-32)

The Global Warming Solutions Act, or Assembly Bill 32 (AB-32), was adopted in 2006 by the California legislature, establishing two key requirements in regard to climate change reduction measures. The first requires that California GHG emissions be capped at 1990 levels by 2020, and the second establishes an enforcement mechanism for the GHG emissions reduction program with monitoring and reporting implemented by the California Air Resources Board (CARB).

In 2008, the Assembly Bill 32 Scoping Plan was released by CARB which describes measures to implement the requirements set by AB-32. In addition to partnering with local governments to encourage the establishment of regional emission reduction goals and community regulations, the Scoping Plan uses various mechanisms to reduce emissions state-wide, including incentives, direct regulation, and compliance mechanisms.

2.4.2.3 Assembly Bill 1493 (The Pavley Bill)

Assembly Bill 1493, widely known as “The Pavley Bill”, was passed in 2002 and authorizes CARB to establish regulations to reduce the GHG emissions from passenger cars and light trucks by 18 percent by 2020 and 27 percent by 2030 from 2002 levels. This aggressive bill was temporarily blocked by the US EPA in March 2008 and later received a waiver of approval for implementation throughout California in June 2009.

2.4.2.4 Low Carbon Fuel Standard (LCFS)

The Low Carbon Fuel Standard (LCFS) was established in January 2007 by Executive Order S-01-07 and requires California fuel providers to decrease lifecycle fuel carbon intensity of transportation fuels by 10 percent from 2007 levels by 2020.

2.4.2.5 California Renewables Portfolio Standard

The California Renewables Portfolio Standard (RPS) was established in 2002 under Senate Bill 1078 and mandated that electrical corporations increase its total procurement of eligible renewable resources by at least 1 percent a year to reach a goal of 20 percent electricity generation from renewable resources. These goals were accelerated in 2006 under Senate Bill 107, which mandated that at least 20 percent of the total electricity sold be generated from renewable resources by the end of 2010. The RPS was further extended in 2008 by Executive Order S-14-08, which required that 33 percent of total electricity sales be generated from renewable resources by 2020. In April of 2011, this RPS standard of 33% renewable by 2020 was enacted into law through final passage of Senate Bill X 1-2 (Simitian) and extended to apply to both public and investor owned utilities.

2.4.2.6 Senate Bill 97

Senate Bill 97, passed in 2007, required the Governor’s Office of Planning and Research (OPR) to develop and recommend amendments to CEQA Guidelines for addressing GHG emissions related to land use planning. The amendments to CEQA were approved and became effective in March 2010, thereafter requiring all CEQA documentation to include and comply with the new amendments established for addressing greenhouse gas emissions.

2.4.2.7 Senate Bill 375

Senate Bill 375 was passed in 2008 to reduce GHG emissions caused indirectly by urban sprawl throughout California. The bill offers incentives for local governments to execute planned growth and

development patterns around public transportation in addition to revitalizing existing communities. Metropolitan Planning Organizations (MPOs) work with CARB to reduce vehicle miles traveled by creating sustainable urban plans with a comprehensive focus on housing, transportation, and land use. Urban projects consistent with the MPO's Sustainable Community Strategy (SCS) can bypass the CEQA's GHG emission environmental review. This provides developers with an incentive to comply with local planning strategies which support the State's greater effort for overall emission reduction in the land use and transportation sector.

2.4.2.8 Assembly Bill 341

Starting July 1, 2012, businesses and public entities, including schools and school Districts that generate four cubic yards or more of waste per week and multifamily units of five or more will be required to recycle, if they are not already doing so. AB 341 also establishes a statewide goal of 75% diversion of solid waste to landfills. The purpose of this new law is to reduce greenhouse gas emissions by diverting commercial solid waste to recycling efforts and expand opportunities for additional recycling services and recycling manufacturing facilities in California.

2.4.2.9 Regional Air Pollution Control Districts (APCD) and Air Quality Management Districts (AQMD)

In 1947, the California Air Pollution Control Act was passed and authorized the creation of Air Pollution Control Districts (APCDs) and Air Quality Management Districts (AQMDs) in every county. APCDs and AQMDs are tasked with meeting federal and state air pollution requirements set by the Clean Air Act and can develop regulations to achieve the necessary public health standards, though these regulations need approval from CARB and the US EPA. APCDs and AQMDs have jurisdiction over businesses and stationary sources of emissions and can offer varying levels of outreach, grants, and CEQA review and technical assistance to interested public and private parties. The APCDs and AQMDs do not have the authority to regulate mobile air pollution sources, which is the responsibility of CARB, and must defer to state or federal regulations provided by the California Air Resources Board and the U.S. Environmental Protection Agency.

SECTION 3.

VISION STATEMENT, GOALS, AND PRIORITIES

The Sustainable RSCCD Committee has developed the following Vision Statement to guide the District in its Sustainability Planning efforts.

The Rancho Santiago Community College District holds sustainability to be a foundational principle in its current and future development.

As a responsible steward of natural resources and the environment, the District will endeavor to minimize its impact on the environment by implementing best practices for conserving resources, reducing waste, implementing energy reduction and alternative energy generation strategies, constructing efficient buildings, and by developing partnerships that will further these activities.

To realize this Vision Statement, the SRC has defined the following sustainability goals and priorities. The goals and priorities for the Sustainability Plan reflect campus needs, interests, and available resources.

Fill in the following table with the campus's goals and add or delete rows as necessary. In addition, the campus may want to include graphs of energy use, water use, or other relevant information to better illustrate the goals. It is recommended. Criteria assigned to a goal should contain both a target that can be measured and a timeframe by which to achieve the target. These are sometimes called SMART Goals (Specific, Measurable, Achievable, Relevant, Time-bound).

	Area of Sustainability	Established Goal
1	Environmental education and training	
2	Energy use	
3	Waste Management and recycling	
4	Hazardous materials management	
5	Resource conservation	
6	Facilities design and operation	
7	Grounds and landscape management	
8	Purchasing practices	
9		
10		
11		
12		

The goals and criteria established for the Sustainability Plan will be monitored during Plan implementation as described in Section 5, "Monitor and Report Performance".

SECTION 4.**PROGRAMS AND PROJECTS FOR IMPLEMENTATION**

This section describes the specific programs and projects that have been selected for implementation from the menu of choices in Section 7 of the Sustainability Template. If the Implementation Programs and Plans Checklist was used, it should be attached to this Sustainability Plan document as an appendix. Campuses should not feel limited to the options here and should include any innovative program or project that was not identified in the Sustainability Template Plan under “Section 7.13: Other” below.

Based on the goals and priorities described above, the Sustainable RSCCD Committee has selected the following programs and projects to actively improve campus sustainability. These programs and projects are also reflected in the Implementation Programs and Plans Checklist, located in Appendix [number], which outlines the details of each action item, its priorities, responsibility for implementation, schedules, and estimated cost of each program or project. The Checklist will be used by the Sustainability Committee to manage the implementation process.

These key actions were selected from a menu of suggested programs and projects from Section 7 of the California Community College Sustainability Template. As a result, the following programs and projects are numbered to reflect the numbering system outlined in the Template and Implementation Programs and Plans Checklist.

7.1 MANAGEMENT AND ORGANIZATIONAL STRUCTURE

In order to implement an effective Sustainability Plan, it will be important for RSCCCD to have a policy mandate for sustainability, the institutional structure required to manage the process, and the financial and programmatic expertise to accomplish Plan goals. The District will implement the following programs to meet this requirement.

7.1.2.1 ADOPT A DISTRICT SUSTAINABILITY POLICY

The Rancho Santiago Community College Board of Trustees has adopted a District Sustainability Policy by delegating authority to the Chancellor to establish administrative regulations for sustainable practices in the following areas: environmental education and training; energy, waste management and recycling, resource conservation, facilities, grounds and landscape management; hazardous materials, transportation and air quality; and purchasing practices.

In addition, the Board of Trustees endorsed the creation of a Sustainability Plan that addresses District-wide and site-specific needs for each college.

7.1.2.2 APPOINT A SUSTAINABILITY COORDINATOR AND ESTABLISH AN OFFICE OF SUSTAINABILITY

7.1.2.3 APPOINT A CAMPUS SUSTAINABILITY COMMITTEE

The Sustainable RSCCD Committee (SRC) was established as a District-wide committee in 2011 under the leadership of Chancellor Rodriguez. The membership, which is open to all interested stakeholders of RSCCD, represents students, faculty, staff, and administration. The Committee is organized into subcommittees, each focusing on one of four areas of interest—transportation, facilities, recycling, and newsletter and communication. The SRC has also created a committee logo to represent their sustainable efforts on campus.

In addition, Santa Ana College (SAC) has established a Green Task Force, which consists of both faculty and students, and works to provide a greener SAC campus. SAC has also created an Environmental Task Force which serves as a sub-committee to the SAC Facilities Committee.

7.1.2.4 FUNDING AND RESOURCES TO SUPPORT SUSTAINABILITY ACTIVITIES

Rancho Santiago Community College District has worked hard to obtain funding for sustainable development, and to spend these funds responsibly. In 2002, voters approved Measure E, a \$337 million general obligation bond to renovate existing campus buildings and construct new classrooms. These funds were used for a variety of sustainability projects on campus.

7.1.2.5 EMPLOY SUSTAINABILITY PROFESSIONALS, AS REQUIRED**7.1.2.6 CONSIDER SUSTAINABILITY IN ENDOWMENT INVESTMENTS****7.1.2.7 INTEGRATE SUSTAINABILITY PLANNING INTO CAMPUS MASTER PLAN**

The District has integrated principles of sustainability into the RSCCD Master Plan, with guidance from the architects and consultants from HMC Architects. The Master Plan committee considered current offerings, potential future programs, current facility challenges, future instructional needs, and the state of infrastructure systems, while striving to incorporate sustainability into all aspects of campus life. To gain information about this topic, a District-wide survey on sustainability was conducted. The current Master Plan states that the District should update and implement facilities master plans, maximize college and community use of facilities, and incorporate green efforts into facilities development and other efforts when cost-effective.

7.2 ENERGY EFFICIENCY

Energy efficiency is one of the most cost effective ways to reduce campus energy use and its carbon footprint. When implemented properly, efficiency measures can decrease energy use without compromising comfort and can improve indoor air quality and enhance student, faculty, and staff performance. Energy efficiency will be a higher priority than renewable or other on-site energy generation due to more favorable economics and to avoid over-sizing renewable energy systems.

The following energy efficiency programs and projects will be implemented at Citrus College.

7.2.2.1 SET ENERGY EFFICIENCY GOALS

It is important to set goals for the reduction of any resource in order to define success. Planning for energy conservation is important to the District. The District has stated that it will participate in the California Community Colleges/Investor Owned Utility (CCC/IOU) Energy Efficiency Partnership in order to help further this goal and reduce energy consumption and increase energy efficiency, as well as reducing operating costs. Currently in fiscal year 2013-2014 and moving forward into 2014-2015, the Administrative Services/Facilities has set goals and measureable objectives related to sustainability efforts in the operation of our campus as well as the products we utilize for the maintenance of the campus facilities.

7.2.2.2 EVALUATE MECHANISMS FOR THE IMPLEMENTATION OF ENERGY EFFICIENCY PROJECTS

7.2.2.3 CONDUCT A FACILITY PRIORITIZATION SURVEY

7.2.2.4 CONDUCT COMPREHENSIVE FACILITY ENERGY AUDITS

The District recognizes the need for energy audits to gain information about the current state of energy use at its facilities and is currently in the process of compiling baseline documentation to complete a comprehensive audit.

7.2.2.5 IMPLEMENT NEW AND EXISTING AUDIT RECOMMENDATIONS

7.2.2.6 IMPLEMENT ONGOING ENERGY MONITORING

As part of the Year 2 Proposition 39 allocation, the District plans on implementing a Monitoring Based Commissioning (MBCx) program. The project would involve installation of whole-building energy meters to determine trends in energy use. The process will identify base-line usage data, identify changes in building and systems operations that will reduce use, and monitor the actual results of projects implemented to demonstrate increased efficiency.

7.2.2.7 PARTICIPATE IN DEMAND RESPONSE PROGRAMS

7.2.2.8 IDENTIFY AND TAKE ADVANTAGE OF GRANT AND INCENTIVE PROGRAMS

The District has demonstrated an effective use of funding to finance many sustainability projects on campus. Funds from Measure Q will be used for the construction of new utility infrastructure and to complete a Central Plant project, which is projected to significantly increase campus energy efficiency. In addition, funds from Measure E were used for to update and renovate campus buildings.

7.2.2.9 ENERGY EFFICIENT EQUIPMENT

A wide variety of energy efficient equipment had been installed on both campuses in the District. Most

notably, the Central Plant project which is underway at Santa Ana College will provide chilled water to cool most of the conditioned spaces on campus, and save money and energy by taking advantage of cooling load diversity and off-peak production. The Central Plant is estimated to reduce campus electrical consumption by 40%. This facility will include a small building, the thermal energy storage (TES) tank, the chilled water distribution pipe loop, and the adaptation of existing building mechanical equipment. The pipe loop will be built under the campus drive. The location of the building and TES tank will be determined during design. The District estimates that the Central Plant will reduce the campus electrical bill by approximately 50% for the portion of the bill that pertains to cooling only. The electrical consumption of the campus will be reduced by approximately 40% and demand will be reduced by 50%. The emissions of greenhouse gases from this project will likewise be reduced by 50%.

In addition to the Central Plant, various other energy reducing projects have been implemented employing the Investor Owned Utilities (IOUs) incentive programs. These projects include:

Santa Ana College:

- Buildings A, F, and R Boiler Replacements
- Central Plant and New Infrastructure
- Health Sciences Building
- Science Technology Engineering Math Building (STEM)
- Committed scheduled maintenance funds to upgrade inefficient boilers and plumbing to seek a reduction in the use of fossil fuels
- Campus-wide LED lighting upgrades committed with Prop 39 funds, for both the interior and exterior light fixtures

Santiago Canyon:

- Building D Chiller and Boiler Upgrades
- Building 'D' & 'C' HVAC Renovations
- VFD's for our pool water pumps
- Boiler replacement to meet new SCAQMD emission standard
- Planned increase in the use of the swimming pool cover by making renters responsible for putting on pool cover when finished as a condition of the rental.

7.2.2.9.1 ESTABLISH AN ENERGY EFFICIENCY PURCHASING POLICY

7.2.2.9.2 EFFICIENT LIGHTING AND LIGHTING CONTROLS

Both Santa Ana College and Santiago Canyon College have installed LED lighting as part of LED Building and Site Lighting Replacement projects. The District has also participated in LED Lighting Demonstrations, to educate the public about efficient lighting.

7.2.2.9.3 INSTALL ENERGY EFFICIENT HVAC SYSTEMS

With the implementation of the new centralized cooling plant at Santa Ana College, existing buildings on campus will need their HVAC systems to be modified to work with the new system. The existing systems,

with the single exception of building D, all have air-cooled DX AC units. The cooling coils and refrigeration compressors in these machines will not work with chilled water. The HVAC components in buildings A, B, C, D, E, F, M, N, P, S will require a retrofit of the mechanical cooling systems and chiller piping system be converted to chilled water operations and more efficiently service the campus and buildings.

Santiago Canyon College has planned to update the HVAC control system in their Science Building as well as implement re-commissioning for that building. They also have plans to install occupancy sensors that adjust the speed of exhaust fans based on whether or not the lab rooms there are occupied or not. In addition, they plan to revise the sequence of operations for various mechanical equipment including the air handlers, the boilers, the exhaust fans and the fume hood equipment. They also plan to adjust air handler scheduling and boiler scheduling to attain maximum energy efficiency.

In Buildings 'D' and 'C' of Santiago Canyon College the District will replace an inefficient chiller unit with a new efficient chiller and install new pumps and VFD equipment. In addition, the existing split-system units and single-packaged systems will be replaced with efficient units. The District also plans to install new VAV hot water return and supply actuators to distribute reheat water efficiently.

For both campuses, the District will install a new robust and more efficient energy management system with a versatile range of controls for the mechanical equipment and lighting systems. They will also retrofit air handlers and install new high efficient motors and fans at various buildings.

At the District office, the chiller equipment, cooling tower, and the pumps will be replaced with more efficient equipment. The equipment will be installed with VFDs to adjust the speed of fans and motors. The existing EMS will be replaced with a new robust and more efficient energy management system with a wide range of controls for the mechanical equipment. The air distribution system will be modified to efficiently distribute air in the building.

7.2.2.9.4 ENERGY EFFICIENCY MEASURING-MONITORING BASED COMMISSIONING

At both Santa Ana and Santiago Canyon College, the District will implement advanced energy data and Monitoring-Based Commissioning (MBCx) techniques to maximize long-term efficiency and lower energy costs. Energy meters will be installed to continuously track energy data from the Building Management System (BMS) to compare actual performance to baseline performance.

For Santiago Canyon's Science Building the District's consultant developed a Measurement and Verification (M&V) Plan to evaluate building and/or energy system performance after retro-commissioning the building. The M&V process will evaluate the building and/or energy systems through energy simulation or engineering analysis. The retro-commissioning contractor will install the necessary metering equipment to measure energy use. They will be able to track performance by comparing predicted performance to actual performance, broken down by component or system. Once M&V is implemented, the consultant will evaluate energy efficiency by comparing actual performance to baseline performance.

7.3 FACILITIES OPERATION

In addition to installing energy efficient equipment, RSCCD strives to operate high-performing facilities, buildings, and energy infrastructure systems that are optimized for inhabitant comfort, productivity, and energy and resource efficiency. The District plans to align all facilities improvements with the RSCCD Sustainability Initiative. Maximum effort will be made to ensure that all improvements be created and managed sustainably for reduction of fossil fuel consumption, and thus the reduction of the campus carbon footprint. Green efforts will be considered as a means of reducing utility costs and improving the campus and community environment.

Current and planned activities in this area are described below

7.3.2.1 ENCOURAGE AND SUPPORT ENERGY EFFICIENCY TRAINING OF STAFF

The Maintenance and Operations staff at both Santa Ana and Santiago Canyon Colleges have been trained to operate new Energy Management Systems (EMS). Further ongoing training programs will be developed and implemented to ensure that the staff is aware of systems updates as they are implemented.

7.3.2.2 INSTALL ENERGY MANAGEMENT SYSTEMS

A new robust and more efficient energy management system that has a more versatile range of controls for the mechanical equipment and lighting systems will be installed. Currently, Santa Ana College already utilizes an EMS system for control of much of its HVAC equipment.

At Santiago Canyon College, there are currently two EMS systems in place. The older American Automatrix system controls HVAC and lighting in some of the buildings and there is an ALC system that controls HVAC in the newest buildings. These systems are used weekly to schedule HVAC and lighting for classes and events scheduled in each of the buildings. In the pursuit of a LEED credit, the Humanities Building at SCC had all its classrooms designed with a daylight harvesting lighting system that will adjust lighting levels based on the amount of natural light entering the building, which reduced energy consumption in the building. All of the newer buildings at SCC already have motion detectors, and moving forward, SCC will be installing motion detectors in the science labs so that the ventilation system will run at a lower speed thus reducing energy usage when the labs are not in use. In addition occupancy sensors will be installed to adjust exhaust fan speed and modify the sequence of operations so the mechanical systems are operating efficiently.

At the District Office an energy study was conducted in May 2013. The energy study recommended measures to improve the overall energy efficiency, reduce the electrical energy consumption and associated carbon footprint of the building. The project was reviewed by agency partners at Southern California Edison and Southern California Gas to determine potential energy rebates the project may qualify for, which is currently estimated at \$107,985. Southland Industries is currently conducting a site study to implement the projects.

7.3.2.3 ADJUST TEMPERATURE SET POINTS AND SCHEDULE OPERATING TIMES

As part of the new construction program, the District will implement a facilities wide Owner Operating Requirement specification that will be used by the commissioning agents and EMS installer to ensure the EMS systems are customized to the campus needs and the HVAC equipment scheduling and maintenance is optimized. This system is currently being implemented on the Science Center- Retro Commissioning project and the District Operation Center- HVAC Renovations. The Owner Operating Requirement form will include the following:

- Air Temperature Range
- Operating Schedule

7.3.2.4 OPTIMIZE BUILDING OCCUPANCY SCHEDULING

The above mentioned Owner Operating Requirement form which is currently being implemented on the Science Center- Retro Commissioning project will also include the following items to optimize the building occupancy scheduling:

- Normal Occupancy Schedule
- Pre-occupancy Operating Period
- Non-occupancy Schedule
- Holiday Schedule
- Cleaning Schedule

7.3.2.5 OPTIMIZE HVAC EQUIPMENT SCHEDULING

To best optimize the equipment scheduling of the HVAC systems, the District will evaluate needs related to instruction so as to utilize entire buildings and shut off HVAC and lighting in buildings that are not being utilized. Santa Ana already has regular PM schedules to ensure that the HVAC systems work, despite their age. At Santiago Canyon, most of the air handles have VFD's to reduce usage when there is a reduction in demand.

In addition, the Owner Operating Requirement specification will include the following items to optimize HVAC equipment scheduling:

- Air Temperature Range
- Humidity Range
- Relative Building Pressure
- Air Filtration
- Ventilation
- Noise Criteria
- Supply Air Temperature Reset Range
- Preferred CO2 Range
- CO Alarm

7.3.2.6 ACTIVATE ENERGY-SAVING FEATURES FOR APPLIANCES AND COMPUTERS

Santiago Canyon College has made a commitment to utilize energy-saving features by installing motion sensors on its personal computers (PC's) which shut down the PC and ancillary equipment when not needed.

7.3.2.7 PURSUE MONITORING-BASED COMMISSIONING (MBCX)/RETRO-COMMISSIONING (RCX)

AS described above, both campuses have plans to implement Monitoring Based Commissioning using Proposition 39 funds in FY 14-15. Santiago Canyon is about to begin a retro-commissioning project under Proposition 39 to reduce energy consumption by the HVAC system that services its science labs. This project is expected to be completed by the end of June 2014.

7.4 SUSTAINABLE BUILDING PRACTICES

7.4.2.1 ESTABLISH A GREEN BUILDING STANDARD

In its Comprehensive Master Plan, the District has stated that it will work to develop green building design standards. Currently the District is developing standards for efficient landscaping and plant materials, irrigation equipment, low flow plumbing fixtures, low wattage LED lighting , efficient HVAC equipment, Glazing and Fenestration, Insulation, Roofing, Low VOC Painting and Coating, Energy Management Systems, Lighting Controls, and Daylight Harvesting Options. The District has already implemented a policy to minimize exposure of buildings occupants, indoor surfaces, and ventilation air distribution systems to Environmental Tobacco Smoke. The District prohibits smoking in the buildings except in designated exterior parking lots. The exterior parking areas are at least 25 feet away from entries, outdoor air intakes, and operable windows.

The Sustainable RSCCD Committee has recommended the development of sustainable design standards for the renovation of existing buildings to make such buildings more efficient, cost effective, and comfortable for their occupants. Already on campus, many buildings have been built using sustainable design criteria.

The newest building at Santiago Canyon College is the 90,000 sq. ft. Humanities Building, which is a US Green Building Council LEED Gold Building. In addition to its photo-voltaic system, some of its other sustainable features include a block exterior which requires little maintenance, lighting features that coordinates day-lighting with interior lighting and drought tolerant landscaping. It was also designed with low emitting products to reduce the quantity of indoor air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of occupants. To attain an Indoor Environmental Quality LEED credit, the Humanities building was designed with the following adhesives and sealants in accordance with SCAQMD Rule # 1168, limiting the VOC limits: Adhesives and Sealants used for carpet, rubber flooring, vct, drywall, cover base, structural glazing, pvc welding, abs welding, top and trim adhesive. The following materials do not exceed Green Seal GS-11 (VOC content limit) and Green Seal Plus requirements; Painting and Coatings, Carpet Systems, and Composite Woods. Both the Humanities

building and the Gymnasium were designed and installed with a fluid-applied roof coating that contain low SRI values promoting cooler roofs to avoid heat islands effects, also in pursuit of LEED credits. The cooler roofs reduce building cooling loads.

7.4.2.2 IMPLEMENT SUSTAINABLE DESIGN PRACTICES

Both campuses have made efforts to implement sustainable design practices in various buildings, and to research the best methods for doing so. At Santa Ana College, the Facilities Committee includes a regular report from the Task Force which often discusses Environmental the implementation of sustainable buildings practices for buildings on campus. The recent renovation of the Johnson Center at SAC will provide modern and efficient infrastructure and technology to support the building use and fulfill the College's objective for sustainable and environmentally responsible operations. Service and receiving facilities will be developed to accommodate recycling, and to separate delivery vehicles from pedestrian circulation. In other buildings, hand dryers have been installed in restrooms, and the swimming pool and Building E replacement facility will utilize state of the art technology for efficient energy and water use.

Santiago Canyon's Humanities building embodies sustainable design with its outdoor teaching spaces, which were implemented in pursuit of LEED credits. The exterior teaching environments are designed such that the exterior concrete benches have the capability to provide data and power to electronic devices to facilitate teaching. This promotes a sustainable environment.

7.4.2.3 USE AN INTEGRATED SYSTEMS APPROACH IN BUILDING DESIGN

The new parking structure planned at Santa Ana College is also a potential location for a central cooling plant, which could be integrated into the design. The parking structure also provides an opportunity for integrating a large scale photovoltaic electrical power facility into the campus. The College wishes to consider the feasibility of a rainwater harvesting system, which would use the upper deck as a collection area.

7.4.2.4 HIRE SUSTAINABLE BUILDING DESIGN PROFESSIONALS

7.4.2.5 COMMISSION NEW BUILDINGS

As part of the Measure 'Q' construction program, Proposition 39 projects, and scheduled maintenance projects, facilities will require new and renovation projects to contain a comprehensive commissioning plan as part of the project specifications, to best commission new buildings. At Santiago Canyon, the last two major buildings, the Athletics and Aquatics Center completed in 2012 and Humanities Building completed in 2014, have both been through the commissioning process.

7.5 ON-SITE GENERATION AND RENEWABLE ENERGY

7.5.2.1 EVALUATE CLEAN COGENERATION AND RENEWABLE ENERGY GENERATION

The District has stated in the Master Plan that it will explore renewable energy opportunities. So far this has been manifested as several feasibility studies including a comprehensive Photovoltaic System Feasibility Study at both Santa Ana and Santiago Canyon.

In the Santiago Canyon College Facilities Master Plan, there is a plan to include an energy efficient central plant to provide air conditioning for the entire campus, which is being evaluated. Some renewable energy generation has already been installed, at the newest building on campus, the 90,000 square foot Humanities Building, which has a photovoltaic system that should provide approximately 19% of the building's electrical needs.

7.5.2.2 EVALUATE LOAD SHIFTING TECHNOLOGIES

As part of the Central Plant project at Santa Ana, the campus is implementing an ice based thermal energy storage system that will make use of load shifting technologies. The chiller will use off-peak energy for production of ice. This technology will reduce energy costs required to produce the ice. The District will also implement load shifting technologies as part of the future central plant at the Santiago Canyon campus. The Central Plant project at SCC is included as part of the facilities master planned projects.

7.5.2.3 MINIMIZE GREENHOUSE GAS INTENSITY OF PURCHASED ELECTRICITY

7.5.2.4 EVALUATE PARTICIPATION IN COMMUNITY CHOICE AGGREGATION

7.5.2.5 IDENTIFY AND TAKE ADVANTAGE OF GRANT AND INCENTIVE PROGRAMS

The District plans to apply for various green facilities grants and incentives. The District is already collaborating with the investor-owned utilities to take advantage of various incentive programs such as the Savings by Design program.

7.6 TRANSPORTATION, COMMUTING, AND CAMPUS FLEET & TRAVEL

Ranch Santiago CCD will strive to reduce Vehicle Miles Traveled (VMT) for students, faculty, and staff commuting to the campuses in an effort to reduce greenhouse gas emissions and minimize the infrastructure costs related to parking. The following programs will be implemented.

7.6.2.1 UNDERSTAND COMMUTE AND TRAVEL PATTERNS

Santa Ana College follows annual compliance with the South Coast AQMD survey requirements in accordance with emission reduction targets, for emission from commutes to campus.

7.6.2.2 ENCOURAGE AND ENHANCE PUBLIC TRANSPORTATION AND RIDESHARING OPTIONS

7.6.2.2.1 UTILIZE THE LOCAL MTA PROGRAMS

The RSCCD Sustainability Committee is actively engaged with Santa Ana College in finding alternative commuting opportunities, including a tie to OCTA. OCTA has a bus stop in the center of the Santa Ana campus off Campus Road. The bus stop is convenient for student and staff, thereby promoting the use of public transportation.

7.6.2.2.2 INCREASE AWARENESS

The District will be partnering with the Air Quality Management District to raise community awareness about sustainable transportation options.

7.6.2.2.3 FACILITATE PUBLIC TRANSIT USE

7.6.2.2.4 INCENTIVIZE PUBLIC TRANSPORTATION AND CARPOOLING

Because Santiago Canyon College is located in the City of Orange, there are not many options to get to campus. There is one bus line that comes from the west and SCC is located at the very end of the line. The District has researched the student public bus pass program, and there are now discounted bus passes to encourage students and staff to take the bus.

7.6.2.2.5 FACILITATE RIDESHARING

7.6.2.2.6 FACILITATE CAR SHARING

7.6.2.2.7 ENCOURAGE FUEL EFFICIENT VEHICLES FOR COMMUTERS

The District is researching the feasibility of electric vehicles for RSCCD use, and plans to research the feasibility of campus electric vehicle charging stations. There are plans for electric car charging stations at Santa Ana, which include the planned installation of two electric vehicle charging stations within its Lot 11 expansion project for use by the campus community. There are also plans at Santiago Canyon for electric car charging stations.

7.6.2.3 ENCOURAGE AND ENHANCE BICYCLING OPTIONS

Santa Ana College plans to partner with the City of Santa Ana on a bike-friendly city initiative to increase the use of bicycling as a means of transportation for staff and students to get to campus. In 2013-2014 Santa Ana purchased additional bike racks to encourage alternative transportation options.

Approximately two years ago, Santiago Canyon added three bicycle racks on campus to the three existing ones. Since then, usage of the bike racks has been noted to have increased.

In 2013 the District held a Ride to Work Day contest, to promote biking throughout both campuses and the District office.

7.6.2.4 IMPROVE CAMPUS FLEET & TRAVEL

Santa Ana College has worked to improve the campus fleet by the replacement of gas powered maintenance carts for newly purchased electric powered carts. SAC also upgraded one of its security vehicles to a Prius hybrid vehicle.

7.6.2.5 ENHANCE STUDENT DISTANCE LEARNING

The Santiago Canyon Master Plan stated that a priority for the college will be the expansion and enhancement of distance education course offerings. A full-time faculty coordinator will be hired, training on effective online course design will be implemented, and an outreach and marketing plan will be developed. To support distance education and other technology advancements, funding will be needed for faculty and staff to attend conferences and workshops.

7.7 WATER, WASTEWATER, AND SUSTAINABLE LANDSCAPING

Water conservation is an important component of sustainability and is aggressively pursued by RSCCD. The District strives to reduce potable water use as well as waste water discharges to both the sewer and storm water systems. In addition, the District reduces waste water pollution by minimizing chemical fertilizers and pesticide use in association with landscaping practices.

7.7.2.1 ESTABLISH WATER CONSERVATION GOALS

The District Master Plan stresses the importance of water conservation, and will continue to develop specific goals to meet this objective.

7.7.2.2 IMPLEMENT WATER CONSERVATION STRATEGIES

Both Santa Ana and Santiago Canyon have implemented water conservation strategies through various projects on their respective campuses.

Santiago Canyon is currently working with the Irvine Ranch Water District (IRWD) to utilize reclaimed water to irrigate the athletic fields. Although the area is served by the Irvine Ranch Water District, the water is provided by the City of Orange Water Department. IRWD has already received approval from the City of Orange for this partnership. Preliminary information shows that if SCC commits to a \$70,000 construction cost, IRWD will proceed with the construction. It is estimated that the cost of construction will be recovered in 5-6 years in the form of reduced water charges. On other parts of campus, the new Humanities and Gymnasium buildings were designed with low-flow flushometers with automatic operation providing reduced water usage. Some waterless and low-flush urinals were also installed and SCC would like to install more when additional funding becomes available. Synthetic turf has also been installed on the softball field to reduce the need for water.

Santa Ana has installed new efficient, low flow irrigation systems in all of its new perimeter landscape as well as efficient irrigation valves to reduce its water use on campus. A new tournament quality artificial turf soccer field was installed to reduce the use of potable water for irrigation as well as engine combustion required for maintenance.

7.7.2.3 REDUCE STORM WATER, SEWER DISCHARGES, AND WATER POLLUTION

Efforts to promote sustainable storm water management are a key part of Santa Ana College's planning for environmental stewardship. Storm water management has been a concern to the College and an environmental issue in Southern California for a long time. A long dry season followed by frequent, sometimes heavy rains contributes to the flushing of pollutants into the Santa Ana River and the Pacific Ocean. The Santa Ana Master Plan recommendations include the incorporation of best management practices which use natural processes to filter and retain or slow the flow of storm water. Opportunities for bio swales and rain gardens have been investigated. Rain gardens will be used to retain and percolate water for building roof drains. They will be incorporated in attractive outdoor seating areas near the entrances of buildings. Rain gardens will be engineered to overflow to the storm drain system if needed. Bio swales will be incorporated in large areas of impervious paving, including roads and parking lots. Currently most of these areas are drained by surface flow to the southwest, ultimately draining to the box culvert under Washington Street. The city drainage system has a finite capacity, and efforts to retain or detain storm water on the campus significantly reduce the College's environmental impact. As future campus development occurs, the College will explore the feasibility of harvesting storm water to replace potable water used for irrigation and other uses.

At the District level, erosion control systems and best management practices on the construction program have been implemented. The District hired a Storm Water Pollution Prevention Program consultant to inspect, monitor, and advise construction personnel and the District on best practices.

7.7.2.4 ADOPT SUSTAINABLE LANDSCAPING PRACTICES

Various sustainable landscaping projects have been implemented on both campuses, such as the Campus Landscape Improvement Projects at Santa Ana and the Coastkeeper Garden at Santiago Canyon. The Coastkeeper Garden is a project where SCC leases some of its property to the non-profit Orange County Coastkeepers who have built a demonstration garden open to the public. They provide a variety of drought tolerant gardens that homeowners can view and possibly install at their homes and significantly reduce water consumption. SCC has also undergone campus landscaping projects to implement sustainable landscaping. The landscape designer for the SCC projects designed native or adaptive plant materials to reduce or eliminate irrigation requirements. Where irrigation is required, the landscape designer used high-efficiency equipment.

7.8 SOLID WASTE REDUCTION AND MANAGEMENT

The goal of the Sustainability Plan is to improve and expand efforts into source-separated recycling, Construction and Demolition (C&D) recycling, and green waste composting. If designed effectively, minimizing solid waste can save the District money and create revenue streams that can be reinvested in the campus. The District will employ the principles of Reduce, Reuse, and Recycle in its solid waste reduction program.

7.8.2.1 CREATE WASTE REDUCTION GOALS

In order to gather information to create goals for waste reduction, the District surveyed existing practices and conducted researching on best practices that could be implemented.

7.8.2.2 MAXIMIZE PROGRAMS OFFERED BY CONTRACTED WASTE HAULER

The District plans on improving waste management contracting. The current waste management contract with CR&R is effective through 2016. The contract, however, does not call for recycling efforts and it was determined that all waste is being co-mingled and put in one truck. The waste management subcommittee of the sustainability committee will conduct further research to explore the possibility of rebidding the contract to meet District's requirements for recycling. Santiago Canyon will investigate the use of other trash haulers that will provide recycling services and help promote recycling for their campus.

7.8.2.3 REDUCE THE WASTE STREAM TO THE LANDFILL

The District and colleges will act to reduce the waste stream to the landfill by making resource conservation an integral part of its waste reduction and recycling programs. They will integrate the concept of resource conservation, including waste reduction and recycling, into its environmental programs and will decrease the amount of waste of consumable materials by reduction of the consumption of consumable materials wherever possible, full utilization of all materials prior to disposal, and minimization of the use of non-biodegradable products whenever possible. Santiago Canyon has made efforts to avoid an increase in what goes to landfills despite the increase in student population and in facilities over the past few years. SCC believes it can do even better with recycling campaigns.

7.8.2.3.1 RAISE AWARENESS OF WASTE REDUCTION

Representatives of the District and colleges will actively advocate, where appropriate, for resource conservation practices to be adopted at the local, regional, and national levels. The Santiago Canyon Facilities committee has hopes to advertize recycling with promotional activities that explain the benefits of recycling.

7.8.2.3.2 MINIMIZE UNNECESSARY WASTE**7.8.2.3.3 REDUCE PAPER USE**

Santiago Canyon's Facilities Committee hopes to promote the use of electronic media in place of the enormous amount of paper used for syllabi and class handouts. SCC further reduces paper use by having its copy center's standard set to make all copies double-sided. Requestors need to specify single-sided copies otherwise it defaults to double-sided. Also, any white paper tossed in the trash which is unused on one-side, is collected and used in the math tutoring center as scratch paper.

7.8.2.3.4 MINIMIZE USE OF DISPOSABLE ITEMS

7.8.2.3.5 FACILITATE SWAP SHOPS AND FLEA MARKET

7.8.2.3.6 DONATE REUSABLE GOODS

7.8.2.3.7 SUPPORT PRODUCER RESPONSIBILITY PROGRAMS

The District will purchase, where financially viable, recycled products. The District will also encourage suppliers, both private and public, to make recyclable products and unbleached paper products available for purchase.

7.8.2.4 IMPROVE EXISTING RECYCLING PROGRAMS

The District and colleges will cooperate with, and participate in, recycling efforts of service area cities and the county. As systems for the recovering of waste and recycling are developed within service area cities and the county, the District will participate by appropriately separating and allowing recovery of recyclable waste products.

In addition to administrators, students are also concerned about recycling efforts on campus. Currently community members come on campus and recycle bottles and cans from the trash receptacles for their own needs. Efforts are being made to build a more robust recycling program that would include construction debris, cardboard, mulching and green waste. A higher level of sustainability will be included when bidding waste and management services. A District wide recycling program has been discussed at the sustainability committee meetings.

At Santiago Canyon, the Humanities building was designed such that free-standing recyclable and trash receptacles are strategically placed in certain key locations of the building to promote recycling, in pursuit of a Storage and Collection of Recyclables LEED credit. Throughout campus a Paper Collection and Recycling Program has also been implemented, and there are plans to place more recycling bins around campus.

7.8.2.5 COLLECT AND SELL ALL RECYCLABLE MATERIAL

7.8.2.6 GREEN WASTE AND FOOD WASTE COMPOSITING

Santiago Canyon's current contract agreement with the landscape contractor requires that none of the green waste goes to landfill but goes toward composting, thus reducing the waste stream to the landfill.

7.8.2.7 ADOPT CONSTRUCTION AND DEMOLITION (C&D) RECYCLING

As part of the Measure 'E' and Measure 'Q' building program, the District's consultants are required to include a construction waste management specification so that contractors properly separate recyclable material from the construction waste to promote recycling on the construction program. It is required for the Contractor to separate construction and demolition waste materials generated on-site in three categories: re-use or recycle on-site, transport to approved recyclers, and transport to legally designated

landfills for the purpose of recycling, salvaging or reusing a minimum of 50% of construction and demolition generated. The contractor is required to provide a monthly report to verify the target amounts.

7.9 GREEN PURCHASING

Rancho Santiago CCD has adopted purchasing policies to meet the goals of environmental, economic, and social sustainability and to use its market power to influence suppliers to be more sustainable, as described below.

7.9.2.1 SUSTAINABLE FOOD PURCHASING

7.9.2.2 GREEN PURCHASING PRACTICES

7.9.2.2.1 ESTABLISH REQUIREMENTS FOR MINIMUM RECYCLED CONTENT

The Director of Purchasing for the District will work with departments to establish minimum recycled content standards for designated recycled products to maximize recycled product availability, recycled content, and competition.

7.9.2.2.2 ESTABLISH STANDARDS FOR GREEN PURCHASING

The District and colleges shall, whenever possible, use recycled products and recycled materials to meet their needs. The District and colleges promote the use of recycled products publicizing its procurement regulation whenever practicable. The District will require its contractors and consultants to use and specify recycled products in fulfilling contractual obligations whenever practicable. This regulation is enacted to demonstrate compliance with the Waste Management Reduction Act and foster market development for recycled products. The Director of Purchasing shall coordinate the implementation of this regulation. He/she will establish a list of recycled products that shall be purchased by all departments whenever practicable and will develop the mechanism for maintenance, additions, and deletions to the list of recycled products available for procurement. Maintenance of the list will include addition of new products containing recycled material as they become available and make available to departments specifications on the new product along with a list of suggested uses. Purchasing has previously established a waste management program to increase the amount of recyclables. They have made it a point to start procurement of Green Seal products for the Janitorial staff to reduce VOC emissions.

At Santiago Canyon, a majority of custodial paper products are identified as green paper products and a majority of custodial cleaning products are environmentally friendly. Purchasing has previously established a waste management program to increase the amount of recyclables. They have made it a point to start procurement of Green Seal products for the Janitorial staff to reduce VOC emissions.

7.9.2.3 SOCIALLY RESPONSIBLE PURCHASING

7.10 STUDENT AND CURRICULUM DEVELOPMENT

The mission of Rancho Santiago CCD is to deliver high quality instruction to students both within and beyond traditional geographical boundaries and to provide an open and welcoming culture that supports student completion and success. With the economics of environmental sustainability becoming increasingly important in all facets of society, the District has a responsibility to play a role in moving current and future generations toward a sustainable future.

RSCCD will strive to create learning opportunities for student involvement and encourage active sharing of current and evolving content to support implementation of the plan. Through the Sustainability Plan initiatives, faculty, staff, administrators, and students will have opportunities to collaborate, participate and serve as effective agents for positive change.

7.10.2.1 CREATE A SUB-COMMITTEE IN THE ACADEMIC SENATE DEVOTED TO SUSTAINABILITY

Santiago Canyon's Associated Student Government (ASG) has recently appointed a student to a position that looks at environmental issues including recycling in order to involve students in the promotion of sustainable practices on campus.

7.10.2.2 PROVIDE PROFESSIONAL DEVELOPMENT AND CREATE A FACULTY FORUM

7.10.2.3 UTILIZE DIFFERENT PATHWAYS TO INTEGRATE SUSTAINABILITY IN THE CURRICULUM

Both Santa Ana and Santiago Canyon have several courses that involve principles of sustainability in the curriculum offered to students:

Santa Ana College

Environmental Geology 140 - This course focuses on the study of urban geologic hazards: earthquakes, groundwater pollution, flood potential, landslides and creep, soil expansion, coastal erosion, and volcanic hazards.

Biology 200 - The Environment of Man - Sustainability is fundamental to the class, as it touches on environmental problems such as energy, resources, pollution, land use, population and food, including economic and political factors.

Engineering 201 – This course focuses on energy efficiency and building design, including thermal massing and natural ventilation as cooling methods. Students inquire and work with the SAC Facilities team on identifying potential renovation projects on campus.

Santiago Canyon College

Automotive Technology 085 – Basic Clean Air Car Course – A Bureau of Automotive Repair recognized Basic Clean Air Car Course, which prepares students for the State Smog Technician Exam.

Biology 109 – Fundamentals of Biology – Principles of biology stressing the relationship of all organisms from anatomical, physiological and ecological points of view. Includes cell machinery, genetics, reproduction, embryology, animal behavior, botany, ecology, evolution and human physiology.

Biology 111- Marine Biology – This course covers basic concepts of marine ecosystems including oceanographic principles, ecology and a survey of marine habits and diversity of marine organisms.

Biology 127 – Ecology – Introduction to the basic principles of ecology. Study of ecosystems, biomes, and the relationships of plants and animals in the natural world.

Biology 128 Natural History of the California Coast – A field study course focused on the ecological study of plant and animal life of the southern and central California coast.

Biology 128 – Ecology of Southern California – Identification and study of the plants and animals of the ocean, mountain and desert regions of Southern California with emphasis on the organisms relationship to their environment. This is a field study course and includes overnight camping.

Biology 170 – Environmental Challenge of the 21st Century – Examines the environmental impacts of increased human population on food, water and energy resources. Land use policies and environmental effects of pollution will also be analyzed.

Biology 200 - The Environment of Man - See above under Santa Ana College courses.

Biology 212 – Animal Diversity and Ecology - A study of ecological principles, and relationships between animal diversity and ecosystems. Habitat, populations, ecological interactions, and environmental influences are stressed while surveying animal diversity and addressing structure, function, behavior, and adaptation of major taxonomic groups.

Biology 214 – Evolution and Plant Diversity – Principles and processes of evolution leading to biodiversity. Survey of the organisms, viruses, prokaryotes, fungi, algae, and plants with emphasis on evolutionary adaptations of the anatomy, physiology, and life cycles of these organisms.

Biology 259 - Introduction to Environmental Biology: This course includes the study of ecosystems, population dynamics, classification, diversity of plant and animal species, effects of pollutants at both the cellular and organismal levels and principles of ecology.

Geology 140 – Environmental Geology - See above under Santa Ana College courses.

Geology 150 – Introduction to Oceanography – Introductory study of the ocean and its topography, sediments, circulation, shoreline processes, biological productivity and mineral resources.

7.10.2.3.1 ADDING A COMPONENT TO AN EXISTING COURSE OUTLINE OF RECORD

The Water Utility Science program at Santiago Canyon offers a wide range of courses that directly apply to water distribution, treatment, and wastewater management. The certificate program provides a great

opportunity for students to be trained in a growing and important field centered on environmental sustainability. With completion of the program, students are prepared for entry-level jobs in the water distribution, treatment and water reclamation industries. The associate of science degree provides coursework and internship experience designed to provide an overview of a wide range of environmental career opportunities. Santiago Canyon College hopes to consider environmental programs for future development, building on this existing Water Utility Science program.

Students have also expressed their desire for development of more environmental programs. When asked what kinds of programs and services the college should offer in the future in a survey, most participants touched on developing programs in the areas of High Technology and Green Technology . For example, participants suggested that the college should not expand upon its signature programs in Water and Surveying, but also develop green technology programs and create environmental studies and sustainable studies programs.

7.10.2.3.3 CREATE A NEW CERTIFICATE OR DEGREE PROGRAM

Energy Analysis Degree & Certificate – This degree program trains students for work in energy analysis and auditing. Students completing training will be prepared for work performing Title 24 energy calculations or for work in utility companies, or private companies that do energy analysis and auditing. Course work includes:

Engineering 165 – Introduction to Energy – Students will gain a broad understanding of energy concepts, efficiencies, conservation, distribution, careers and cost-benefit analysis of energy resource use. The study of both renewable and non-renewable energy will be included.

Engineering 175 – Introduction to Energy Analysis – This course is focused on energy analysis with respect to energy conservation, energy auditing, and CA Title 24 requirements. Calculations will be performed manually and with the assistance of software applications. Career tracks in energy analysis will be explored. Energy concepts, heat loss calculations, basic solar concepts, site selection, design improvements, appliances, and utility systems will be covered within this course.

7.10.2.4 ADVOCATE FOR CHANGE AT THE STATEWIDE LEVEL

The Sustainable RSCCD Committee hopes to advocate on a larger scale by sending representatives from both the SRC and the Facilities Committee to the annual Higher Ed Sustainability Conference.

7.10.2.5 TRAINING OPPORTUNITIES FOR STUDENTS

7.10.2.5.1 ASSIST IN GREEN INTERNSHIP AND JOB PLACEMENTS

7.10.2.5.2 FACILITATE HANDS-ON CAMPUS PROJECTS

Biology faculty at Santa Ana oversee a group called the Green Task Force, which works to identify recycling projects and puts together Earth Day events. Recently, a representative of the Associated Student Government (ASG) committed to personally getting involved with re-cycling and is attempting to generate student interest. The Administrative Services Department agreed to provide recycling bins for

cans and bottles. Students will regularly empty them along with the current containers used for paper. The students will then deliver the collections to re-cycling centers.

For the future, students have expressed interest in jointly exploring hand on projects including replacing old restroom faucets that have conventional on/off knobs with automatic shutoff valves, changing the college landscaping requiring a high amount of irrigation to drought-tolerant landscaping and looking at having water bottle filling stations so that students/staff will not discard their water bottles.

7.10.2.5.3 ENCOURAGE SOCIAL SERVICE

7.10.2.5.4 INVITE NOTABLE SPEAKERS

Santiago Canyon's Earth day event featured several exhibits including electric and hybrid vehicles as well as guest speakers who presented on a variety of sustainability topics.

7.10.2.5.5 SUPPORT STUDENT COMMITTEES & CLUBS

The District Master Plan states that the District will both engage student organizations and club on campus and support student recycling activities.

Clubs at Santa Ana College include the following:

Collegiate Alliance for Positive Environmental Stewardship Engineering Club (CAPES): Students involved in CAPES participate in activities that focus on sustainable topics such as sustainable design and building with solar.

7.11 CAMPUS AND COMMUNITY OUTREACH & AWARENESS

The sustainability of a college is highly dependent on the actions of individual students, faculty, and staff. While having energy efficient equipment, installing low flow water devices, and providing separate bins for source separation of waste can make a District more sustainable, behavioral changes can have a large impact on the effectiveness of these projects. Additionally, it is important to maintain transparency and keep the campus and local community informed of the District's progress with sustainability plan implementation. This is hard work and contributions to the District's sustainability should be recognized. RSCCD will implement the following programs related to campus and community outreach and awareness.

7.11.2.1 CREATE A WEBSITE DEDICATED TO CAMPUS SUSTAINABILITY

The sustainability committee created the RSCCD sustainability web page. They are in charge of maintaining and updating the website.

7.11.2.2 HOLD WORKSHOPS AND PRESENTATIONS

7.11.2.3 SUSTAINABILITY EVENTS

In 2013 the District worked with student clubs to hold the Earth Day events. Together they coordinated an Earth Day program and events including presentations, workshops, and more. The Transportation Subcommittee of the Sustainability Committee proposes designated a day in May as “Ride Your Bike to Work Day” for the District and developed a flyer to publicize the event and organized prizes for participants. The sustainability committee also held a contest to develop as sustainability tag line.

Santa Ana held a “Sustain-a-Palooza” event which was a success, with overflowing crowds, informational presentations, speakers and involvement by a number of the campus clubs. At Santiago Canyon there is an on-going periodic campus clean-up day which is organized by students.

7.11.2.4 CAMPUS SPECIFIC OUTREACH & AWARENESS

The Sustainability Committee publishes a Sustainable RSCCD e-newsletter to inform the campus community about sustainability news and events.

7.11.2.5 COMMUNITY SPECIFIC OUTREACH & AWARENESS

The campus master plan states that the District will work to fostering community partnerships related to sustainability.

7.12 CREATE A CLIMATE ACTION PLAN

7.12.5 MAKE A COMMITMENT TO REDUCE GREENHOUSE GAS EMISSIONS

The Sustainable RSCCD Committee has discussed the possibility of becoming a signatory to the American College and University Presidents’ Climate Commitment (ACUPCC). Signatories of the ACUPCC agree to complete a greenhouse gas (GHG) inventory; create an action plan with targets and milestones for reducing emissions; integrate sustainability into curriculum; and make their plans, inventory, and progress reports publicly available.

7.12.6 PERFORM A GREENHOUSE GAS INVENTORY

7.12.7 CREATE AND EXECUTE A CLIMATE ACTION PLAN WITH PRIORITIZED GREENHOUSE GAS REDUCTION MEASURES

7.12.8 REGULARLY MONITOR AND REPORT PROGRESS TO CAMPUS

7.13 OTHER PROGRAMS AND PROJECTS

7.13.1 ANY ADDITIONAL PROGRAMS AND PROJECTS NOT COVERED ABOVE

7.13.2 ANY ADDITIONAL PROGRAMS AND PROJECTS NOT COVERED ABOVE

7.13.3 ANY ADDITIONAL PROGRAMS AND PROJECTS NOT COVERED ABOVE

7.13.4 ANY ADDITIONAL PROGRAMS AND PROJECTS NOT COVERED ABOVE

SECTION 8.

MEASURE AND REPORT PERFORMANCE

The purpose of this section is to describe the campus's plan for regular measurement and reporting of its progress towards reaching the Sustainability Plan goals.

As with any successful program, the ongoing progress and performance of sustainability plan activities should be *monitored and compared to goals and criteria*. This will require continuous participation of the Campus Committee, college staff, and other participants in the process. To communicate results and ensure transparency and accountability, the *results of the Sustainability Plan activities should be communicated to the larger campus community on a regular basis*.

The following section describes the planned process for measuring and reporting sustainability activities and achievements.

8.1 MEASURING PERFORMANCE

In order to monitor the Rancho Santiago Community College's progress towards its sustainability goals, the Campus Sustainability Committee plans to collect information on the following key metrics at the regular intervals described below.

Fill in the following table with the campus's customized metrics and add or delete rows as necessary. Campuses that choose to normalize metrics by number of students, building square footage, or other factors should list these metrics separately from measurement of aggregate usage. For more details on developing metrics, see Section 9 of the Sustainability Template.

Area of Sustainability	Performance Metric	Measurement Frequency
Total Energy Use	Change in total annual electricity and gas use.	Annual
Energy Use Intensity	Change in total annual electricity and gas use per student/staff/faculty and/or per conditioned square foot.	Annual
Renewable Energy Use	Change in total annual renewable energy use and/or percent of total annual energy use that is generated from renewable sources	Annual
Water Use	Change in total annual water use.	Annual
Water Use Intensity	Change in total annual water use per student/staff/faculty.	Annual
Waste Diversion and Management	Percentage of waste diverted and increase or decrease from the previous year.	Annual
Transportation Efficiency	Total VMT reduced or number of single occupancy vehicles reduced.	Bi-Annual
Greenhouse Gas	Total and change in annual campus greenhouse gas	Bi-Annual

Emissions	emissions in tonnes CO ₂ e.	
Area of Sustainability	Performance Metric	Measurement Frequency
Greenhouse Gas Emission Intensity	Total and change in campus greenhouse gas emissions in tonnes CO ₂ e per student.	Bi-Annual
Green Curriculum	Number of students enrolled in sustainability courses.	Annual
Avoided Costs	Total dollars saved as a result of sustainability actions.	Annual

8.2 REPORTING PERFORMANCE

The campus should use this section to describe how the Campus Sustainability Committee will communicate measurement of performance. This section should include any plans to report to external databases, such as the Sustainability Tracking, Assessment, and Rating System (STARS) or the American College and University Presidents' Climate Commitment (ACUPCC), and any media that will be used to regularly update the campus on activities in between formal reports, such as a website or a blog.

In order to keep the campus community informed of the progress of the Sustainability Plan activities, the Campus Sustainability Committee will create a webpage dedicated to sustainability on the Rancho Santiago Community College website at [insert web address is known]. Additionally, the Committee will summarize activities, metrics, and progress towards goals in an [annual/bi-annual] report, which will be available publicly on the sustainability website.

To increase transparency, the Rancho Santiago Community College will also participate in the Sustainability Tracking, Assessment, and Rating System (STARS) to evaluate the overall campus sustainability and submit the campus greenhouse gas inventory and Climate Action Plan to the American College and University Presidents' Climate Commitment (ACUPCC) reporting system.

On an ongoing basis, the Campus Sustainability Committee will regularly update the campus of projects and progress by maintaining a sustainability blog, which can be found through the sustainability website or at [insert web address if known]. All students, faculty, and staff are encouraged to contribute to this blog by emailing its administrator, [Blog Administrator Name], at [Blog Administrator Email] with events, projects, and any other campus sustainability news.

8.2.1 CAMPUS WORKSHOPS

The Campus Sustainability Committee will hold periodic workshops open to all campus members throughout the planning and implementation phases of the project. This will be designed to encourage a two-way dialogue where information is provided to the campus community and feedback is solicited and incorporated into the plan.

Citrus CCD Sustainability Plan Goals

Goal Number	Area of Sustainability	Established Goal
1	Economic Return on Investment	Evaluate the return on investment of capital improvements in sustainability based on life-cycle Net Present Value (NPV).
2	Energy Efficiency	Reduce overall campus energy consumption by 6 percent within two years. Establish new reduction goals after two years based on planned activities and additional opportunities.
3	The Built Environment	Construct all major capital projects to meet LEED Silver “equivalent” standard, with goals to reduce energy and water use, wastewater discharges, and sustainable landscaping practices.
4	Technology Utilization	Continue to take advantage of new technologies in all areas of waste reduction, energy usage and sustainable culture.
5	Leadership and Champions	Identify campus community members who will be enthusiastic, involved, reasonable, and responsible to lead the campus in its sustainability efforts and to set the example for generations to come.
6	Solid Waste Management	Continue to implement the recycling program, expand it to include all sectors of recycling and waste reduction to landfills, comply with recycling program requirements of AB-341, and strive to meet the statewide landfill diversion goal of 75 percent by 2020.
7	Transportation	Reduce the reliance of students, faculty and staff on single occupancy vehicle commutes by 5 percent within the next five years. Encourage the utilization of public bus and rail transportation, car pooling, and bicycling to campus.
8	Communication and Education	Develop and implement a program to raise awareness in the campus community to inspire behavioral changes to enhance sustainability. Program will be initiated by the fall 2013 semester.
9	Campus and Community Involvement	Increase community awareness and support of the College sustainability efforts through the use of targeted media. Program will be initiated by the fall 2013 semester.
10	Curriculum	When appropriate to a program of study, encourage the inclusion of sustainability content (social responsibility, sustainable development strategies, and carbon management) into curriculum and/or instructional material.

Citrus CCD Sustainability Plan Goals

11	Continuous Improvement	Citrus College will improve existing sustainability efforts by analyzing and auditing current activities to identify changes to processes and to increase effectiveness and to develop future goals. Analysis of energy and water usage and solid waste management programs will be completed by January 2014.
12	Greenhouse Gas Reduction	Continue to reduce Greenhouse Gas emissions through the implementation of the Citrus College Sustainability Plan. Consider a future Climate Action Planning process to meet AB-32 requirements.

Sustain-A-Palooza, Santa Ana College
Wednesday, April 23, 2014
NAM Presentation – *Suggested Content*

- 1. Introductions**
- 2. Opening Activity – *What does sustainability mean to you?***
- 3. District Sustainability Vision Statement**
- 4. CCC Sustainability Template Overview**
- 5. Student Involvement & Feedback**
- 6. Group Activity – *What sustainability initiatives would YOU like to see at SAC?***
 - Example CCC Sustainability Measures – Skyline Community College
- 7. How to get involved**

Is Your College Green?

Application Now Open for the 2014 Green Genome Cash Awards

The Green Genome Community College (Green Genome) Awards sponsored AACC's Sustainability Education and Economic Development (SEED) Center honors exemplary community colleges across the country that have taken a strategic leadership role in building and educating for a clean and sustainable economy. The award recognizes institutions that have demonstrated the institutional competencies in four areas or "DNA strands" - community engagement, governance, program design and delivery, and strategic partnerships - critical areas for green transformation. In addition, the Green Genome award includes an overall award for colleges that have demonstrated an effective, integrated and comprehensive approach to woven from the four DNA strands, essentially establishing green transformation into the DNA of their institution.



2013 Winner, Central Carolina Community College

Five community colleges will be selected to receive **\$7,500 in cash plus \$7,000 in state-of-the-art Snap-on Bahco brand equipment and tools** and will be showcased through the SEED Center and various publications and media.

Only SEED Member colleges are eligible to win. To check your free membership status, read more about the awards, and apply for your chance to win – visit www.theseedcenter.org today!

APPLICATION DEADLINE – APRIL 30, 2014.



AMERICAN ASSOCIATION OF COMMUNITY COLLEGES **Workforce and Economic Development** Spring 2014

Center Overview

Community colleges are viewed and respected as “workforce engines” in a mercurial economic landscape. In 2006, AACCC established the Center for Workforce and Economic Development (the Center) to better position community colleges to improve the prosperity of industry, workers, and communities. AACCC’s Center helps community colleges collaborate with workforce boards, economic development entities, labor market intermediaries, and other community organizations to drive workforce and economic opportunity. Specifically, the Center seeks to transform best practices into common practice throughout the community college network, and prides itself on focusing on integrated, interactive, and results-driven solutions.

Alignment with the 21st Century Report and Recommendations

At a time when AACCC is focused on reimagining the community college, workforce and economic development efforts need to ensure that they are focused on how curriculum and credentials can support completion of educational and career goals. In particular, workforce efforts align with AACCC’s *Reclaiming the American Dream* report’s Recommendations 3, 4, and 5, including the work of Implementation Teams 2 and 5 on reimagining pathways, addressing the skills gap, and the particular importance of employer partnerships.

Center Focus 2014

The Center works with community colleges and partners to:

- Integrate and transform workforce and economic development concerns and contributions into effective, scalable sector and/or regional solutions.
- Collect successful and proven economic and workforce development community college practices and develop tools and resources for college use, including labor market information and research.
- Encourage and maintain critical partnerships among education, industry, workforce, and economic development organizations involved in programs and practices that help build workforce and economic development capacity and leadership.
- Coordinate and align workforce priorities with a growing list of federal agencies, primarily the U.S. Departments of Labor, Education, Agriculture, Energy, Commerce, Transportation, Small Business Administration, the Environmental Protection Agency, and the Appalachian Regional Commission.
- Disseminate and encourage sustainable policies and practices to the nation’s almost 1200 community colleges and other workforce and community organizations.

Sample Projects

AACCC plays a leadership role in helping our colleges move forward. Most of the projects help the colleges re-envision and provide external funding to point the colleges to new strategies and partnerships. The projects below are focused on sectoral and regional initiatives, national partnerships, and tools and resources.



AMERICAN ASSOCIATION OF COMMUNITY COLLEGES
Workforce and Economic Development
Spring 2014

1. Sectoral and Regional

Goldman Sachs 10,000 Small Businesses

Since the launch in 2010 of the \$500 million, five-year initiative, Goldman Sachs Foundation has funded eleven community colleges to provide practical business and management education for small business owners, as well as offered access to capital through community development financial institutions. AACC provides technical assistance and tools, helps identify and track the promising practices, and develops recommendations for *10,000 Small Businesses'* sustainability and replication. See www.aacc.nche.edu/goldmansachs

Mississippi River Consortium

Initiated by the W.K. Kellogg foundation this initiative convenes six college-led teams serving vulnerable communities to coordinate efforts related to commercialization opportunities, logistics and first responder workforce training at the Workforce Development Institutes (WDI) in 2013, 2014, and 2015. AACC is providing \$124,500 to the colleges in cash, as well as group and site-specific technical assistance throughout the year.

2. National Partnerships

Benefits Access for College Completion

Supported by Annie E. Casey Foundation, Ford Foundation, Kresge Foundation, Lumina Foundation, and Open Society Foundations, this collaborative effort seeks to challenge, support, and learn how community colleges and local and state partners can improve retention and completion by developing scalable and sustainable organizational strategies, funding policies and practices that provide students better access to public benefits.

BACK TO WORK 50+

The AARP Foundation is collaborating with AACC to expand BACK TO WORK 50+ (BTW 50+) to 15 community colleges. BTW 50+ is designed to move low income, unemployed men and women age 50+ from instability to stability. Through the BTW 50+ expansion, participating community colleges will host local information sessions where job candidates can learn how to update their personal marketing tools and networking strategies, target their job search on in-demand jobs, get job leads, and find resources such as training opportunities to prepare for available jobs. Colleges selected by AARP Foundation to participate receive grants of up to \$165,200 to lead BTW50+ services within their communities. The BTW50+ Virtual Career Network developed by AACC specifically for the over age 50-population has launched as part of this initiative.

Community College/Career Collaboration (C⁴)

Funded by the Lumina Foundation and in collaboration with Goodwill Industries International, Aspen Institute, and Jobs for the Future, this initiative bolsters college and career success for low-income adults by documenting, promoting, and replicating successful models throughout Goodwill and community college networks. The C⁴ Program currently involves 121 community colleges partnering with 72 local Goodwill Industries across the country. Goodwill has documented that over 14,000 individuals have enrolled in C⁴-related programs and 9,100 have earned credentials over the past three years.



AMERICAN ASSOCIATION OF COMMUNITY COLLEGES
Workforce and Economic Development
Spring 2014

Maps to Credentials

In partnership with the Council for Adult and Experiential Learning (CAEL) and American Council on Education (ACE), three community colleges are designing and piloting credential road maps to accelerate postsecondary attainment through effective integration of comprehensive prior learning assessment (PLA). The project focuses on military veterans. AACC helps identify and encourage community colleges in attracting and helping veterans incorporate PLA tools and strategies to advance and complete programs, including workshops at WDI. The models and successes of the three participating colleges will be disseminated through AACC channels.

3. Tools and Resources

Virtual Career Network (VCN)

The VCN is a comprehensive career preparation and exploration tool for jobseekers and career changers looking to enter high-growth occupational sectors. The Web-based platform allows users to assess their interests, explore occupations, research education programs, identify required credentials and licenses, document prior learning and record completed online courses that are hosted on the site, and see job listings in their area. All information is customized to reflect the user's geographic region utilizing their zip code. Focused initially on healthcare, the platform has been expanded into transportation and green jobs with Information Technology and Advanced Manufacturing prioritized as future sectors. The VCN was also repurposed to address the needs of older American workers through a grant from the AARP Foundation. This site helps unemployed 50+ workers identify high-growth, low barrier-to-entry occupations. See www.vcn.org and www.vcn.org/backtowork50plus.

The SEED Center

With its network of 470 member colleges, the AACC Sustainability Education and Economic Development (SEED) Center has built the first national community college clean tech workforce development framework for aligning curriculum with industry needs in the clean energy industry. Supported by the Kresge Foundation, SEED has awarded more than \$150,000 in cash and prizes to colleges through the national Green Genome Awards program, and has held professional development events for more than 4,000 college personnel. Thirty community college CEOs serve on the AACC Sustainability Task Force guiding SEED's strategic direction. See www.theseedcenter.org

4. Convenings

Workforce Development Institute

Designed as a comprehensive program for community college-based workforce service providers, the Workforce Development Institute (WDI) is an annual three-day conference that aims to educate, invigorate, and motivate those who are new to workforce development as well as seasoned practitioners. In many ways, this conference serves as the hub to highlight AACC's workforce and economic development role. WDI 2014 drew close to 700 attendees to meet with corporate, foundation, federal, and community partners. See www.aacc.nche.edu/wdi

The Community College Green Genome Framework:

Integrating Sustainability and
Clean Technology Workforce
Development Into an
Institution's DNA

A national guide and institutional
self-assessment created by
community colleges, for
community colleges

THE KRESGE FOUNDATION



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The American Association of Community Colleges (AACC) is the primary advocacy organization for the nation's more than 1,100 community, junior, and technical colleges and their more than 13 million students. Community colleges are the largest and fastest growing sector of higher education. Headquartered in Washington, D.C., AACC has been in operation since 1920.



This publication is a product of the SEED Center, an initiative of the American Association of Community Colleges and ecoAmerica. With its more than 460 community college members, SEED (Sustainability Education and Economic Development) aims to advance sustainability and green workforce development practices at community colleges by sharing innovative practices to help college administrators, faculty, and staff to build the green economy. For more information about AACC and community colleges see www.aacc.nche.edu.

For more information about the SEED Center see www.theseedcenter.org.

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OVERVIEW

This guide provides details about the American Association of Community Colleges (AACC) SEED Center **Green Genome Framework**. The framework is designed to help community colleges expand their local green economies by aligning green-focused workforce education programs with other campus and community sustainability initiatives. Along with the **Genome Self-Assessment Tool**, the framework allows colleges to gauge how well their institutions are leading these kinds of efforts today and where to prioritize future investments. Facing shrinking resources, colleges need this kind of strategic alignment to maintain their sustainability commitments to build healthy and economically vibrant communities with career opportunities for all. As such, this framework also supports the recommendations of the AACC's 21st-Century Commission on the Future of Community Colleges to increase access and completion on college campuses.

This tool was developed with input from more than 50 community colleges and a national advisory panel made up of industry representatives, the U.S. Department of Energy, and other national experts. Colleges that received the 2012 SEED Center **Green Genome Awards** are highlighted in this report in single-page spotlights.

INTRODUCTION

The past decade has seen a growing consensus about the importance of sustainability and green (or clean technology) workforce and economic development as essential components of a responsive, healthy, and effective community college institution. Many colleges, even in recent difficult economic times, have helped drive job growth across various green sectors and prepared workers for careers that help create healthy and sustainable communities. Colleges in some regions, for example, have increased the number of students gaining industry-recognized

SEED's Genome Tools: Helping Community Colleges Integrate Green

Green Genome Framework: a set of measures to assist colleges in organizing this integration

Genome Self-Assessment Tool: a 47-question guide to help colleges prioritize and measure progress over time (see appendix and online at www.theseedcenter.org/greengenome)

Genome Awards Program: National awards program for colleges that have made progress toward this integration (the five 2012 winners are spotlighted in this report)

credentials in high-demand renewable energy sectors. Others have advanced energy efficiency technological innovations through entrepreneurship and small business partnerships. And in regions where there is not yet great demand for what some might consider conventional green jobs, colleges are working with manufacturers, hospitals, and other businesses to “green” existing practices and occupations.

Despite these pockets of success, much work remains—nationally and institutionally—to realize the full potential of the green economy. As a nation, the United States has a critical need for consistent public policies that incentivize clean technology market growth, lead to more consumers embracing sustainable goods and services, and create a more coordinated approach to labor market information and credentials. There is no question that for community colleges, the pursuit of sustainability and the delivery of responsive workforce development programs for clean industry sectors have been constrained in part by these national issues.

Just as much work, however, remains to be done at the *institutional* college level. While many community

colleges have built innovative green-related courses and programs and have made important operational changes to minimize emissions and waste, few have aligned their efforts in a strategic way to have a bigger and lasting impact.

Community colleges require *whole systems thinking and action* to be true leaders in educating for and building thriving regional green economies. As a college develops quality and responsive workforce programs in these clean technology areas, it must do so not in isolation, but rather as part of a broader institutional commitment to green. For example, the college must look across all programs of study to determine where and how sustainability principles fit. In addition, the college must connect this education to operational greening where students apply learning to real-world campus-based energy and environmental challenges. And, as importantly, the college must engage in regional green economy planning and in efforts to raise community awareness about making smart sustainable choices. These kinds of strategic and comprehensive institutional approaches, executed throughout the college, can yield deeper outcomes: highly skilled, marketable, and environmentally conscious students learning in an institution that is reducing its own carbon footprint and is located in a region where newly educated residents, consumers, and policymakers begin to demand greener products and resources.

If done right, this approach will help set the conditions to expand the green economy and strengthen career pathways for students. Simultaneously it will improve the college's organizational alignment to the point that green becomes part of the institution's DNA.

To encourage more 2-year colleges to think and act in this way, the AACC SEED Center Green Genome project developed a framework, assessment tool, and awards program. This publication lays out this framework and highlights promising practices of community colleges working toward green transformation. It is designed to bring together college leadership, faculty, and staff to gauge how well they are collaborating and meeting certain measures and

to determine how to prioritize future sustainability resources. The assessment tool (see appendix), now being used by more than 40 community colleges, will bring more 2-year colleges into the higher education sustainability movement. In that regard, the framework and tool complement the great work that the Association for the Advancement of Sustainability in Higher Education (AASHE) and the American College & University Presidents' Climate Commitment have already done to guide higher education institutions in pursuing climate neutrality and sustainability literacy.

THE GREEN GENOME FRAMEWORK

What would an integrated approach to sustainability and green workforce and economic development look like at a community college, and how would a college know whether it was making progress toward long-term systemic change?

The AACC SEED Green Genome Framework aims to answer these questions. It seeks to advance the practical understanding of the college's ecosystem—its policies, practices, structures, partnerships, and programs—and how they influence, interact, and intersect to affect the community. By following this framework, colleges can take *action* to strengthen connections and align efforts systematically to truly achieve “green transformation,” incorporating green into the institution's DNA.

Recognizing that few community colleges have realized an ideal state of green transformation and that there is no simple roadmap or tool to help get there, the Genome project's approach begins with four institutional competency areas—or DNA strands—needed to achieve transformation. Within each competency area there is a set of indicators needed to master the competencies, and together the competencies and indicators provide a framework to allow colleges to assess their performance and identify areas of progress and improvement. Although taking

action in just one DNA strand would begin to move a college toward a systematic approach, colleges would have to master each strand to truly achieve change.

THE FOUR DNA STRANDS



GOVERNANCE:

Does your college have personnel, policies, plans, resources, and practices in place that reflect a commitment to sustainability and green-focused education and training?



PROGRAM DESIGN AND DELIVERY:

Is your college preparing a qualified, green-skilled workforce by facilitating the delivery of high-quality programs based on industry needs?



STRATEGIC PARTNERSHIPS:

Has your college formed the necessary partnerships to advance campus sustainability goals and green workforce development programs?



COMMUNITY ENGAGEMENT:

Does your college serve as a catalyst in moving the community toward building a sustainable region and an economically vibrant green economy?

COMPETENCY STATEMENTS AND INDICATORS

COMPETENCY STATEMENTS:

A college's aspirational green goals

INDICATORS:

Aligned to each competency statement, measures that help the college determine progress toward these goals

The Genome project created *competency statements* to provide an aspirational goal for each DNA strand. The competencies are represented as a general statement to allow for flexibility and are supported by a set of *indicators* to help administrators and faculty at colleges understand how green transformation can be operationalized and measured. Multiple indicators were identified to help answer the question, "How would a college know it has reached the tipping point toward long-term systemic change or is making progress?"

These indicators do not represent the universe of possible indicators, and in some cases, the indicators may not be inherently green but were considered best-in-class practices to ensure quality and innovation related to the competency. Please note that mastering each competency requires all of the indicators listed. However, implementation of the full list of indicators is considered the "ideal state" for colleges to work toward.

To provide additional context, examples of promising practices are incorporated and aligned to a specific indicator. In addition, colleges that received a 2012 Green Genome Award are spotlighted at the end of each DNA strand. An overall winner is also highlighted to show how one college has been working toward green transformation in all DNA strands.



GOVERNANCE

INSTITUTIONAL COMPETENCY STATEMENT:

Design and establish the college's structure, facilities, policies, plans, resources, processes, and practices to reflect a commitment to sustainability and green workforce and economic development that confers benefits to the institution, community, and students.

MASTERY OF THIS COMPETENCY REQUIRES THE FOLLOWING INDICATORS:

- An understanding by leadership (e.g., cabinet, trustees) of the importance of ensuring that the college implements sustainability policies and practices aimed at reducing individual and collective impact on the environment and that promotes a green economy/job expansion.

Indicator in Action

While the **Austin Community College (ACC)** District (TX) was implementing a variety of sustainability projects, from the installation of water-saving plumbing fixtures to a district-wide effort to phase out incandescent light bulbs, the adoption of Board Policy C-9 in 2009 coalesced the college's efforts. C-9 emphasizes ACC's commitment to fostering "environmental awareness by providing educational leadership in energy conservation efforts, efficient energy use, renewable energy, and recycling." As the college's Director of Environmental Stewardship explains, "The policy formalized everything so there is accountability and a strategic structure for what we are doing." Now the college's sustainability efforts, from purchasing to monitoring greenhouse gas emissions to green-focused student learning opportunities, are presented to the board during the annual Policy Compliance Report.

- Fostering and establishing an institutional culture of and commitment to the triple bottom line—preserving the environment, increasing economic prosperity, and promoting social equity.
- Establishing a formal commitment to campus sustainability (e.g., the American College & University Presidents' Climate Commitment, AASHE's STARS program, SEED).
- Integrating sustainability principles and practices as well as green workforce development practices into the institution's strategic master, educational plans, and campus procedures manual.

Indicator in Action

In 2009, **Palm Beach State College (FL)** adopted a specific sustainability goal as part of its strategic plan to help coordinate a range of sustainability activities that were previously dispersed across organizational units. The college's Institute for Energy and Environmental Sustainability, an outgrowth of the plan, has become a visible center point for where the collaboration occurs and where clean technology innovation and education happens among Palm Beach State College students.





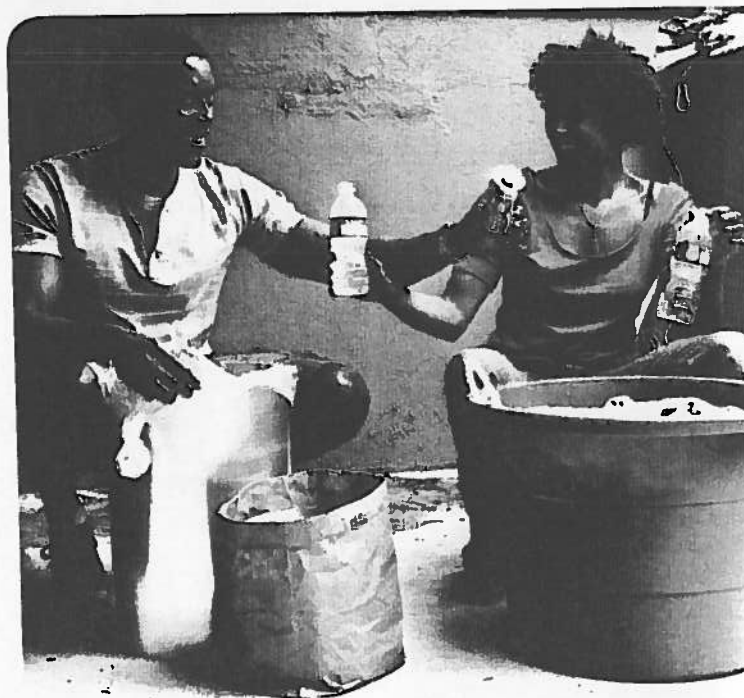
- Appointing key, high-level decision-makers and committing resources to coordinate and integrate sustainability and green workforce development efforts within the college.

Indicator in Action

Alfred State College's (NY) chief sustainability officer, a direct report to the president, works with students and staff to enable and align campus sustainability initiatives. The officer works with faculty to integrate campus and community sustainability projects into courses and looks for opportunities to incentivize teaching sustainability.

-
- Creating and empowering a sustainability/green committee or task force of faculty, staff, students, and others to formulate policy related to green education and workforce development including curriculum, methods of instruction, academic standards, program development, and degree requirements—and integrating these efforts with other campus sustainability efforts (e.g., greening of facilities).
 - Committing resources to provide faculty and staff conceptual, physical, and virtual professional development opportunities and spaces to support the scholarship of teaching and learning about sustainability, green technical skills, and new and emerging technologies.

- Obtaining resources and creating capacity to serve as the “leverager” of multiple funding sources to expand and sustain green sector activities.
- Supporting institutional research related to sustainability and green skills/competencies and student learning, development, and outcomes to increase capacity to deliver high-quality green education and training.
- Maintaining flexibility to develop or enhance curriculum and courses as needed to match the growth of the green economy through sufficiently streamlined course approval processes and effective use of external advisory committees.





"A lot of these [sustainability] initiatives die because you don't have an alignment of effort ... throughout the organization. The board policy was really helpful in that regard."
Les Jauron, vice president of planning and information

Butte College (CA): Winner, Governance

Butte College, a rural college situated on a remote 928 acres designated as a wildlife area, set out to create a governance structure to ensure commitment to sustainability practices in all facets of the college, with ambitious plans and goals to ensure action. As early as 2002, the college developed a long-term plan to implement a solar energy project that would generate all the power needed for the campus. In 2011, the college achieved that goal and became "grid positive" when it produced more electricity than it needed. It was in 2006, however, with the establishment of a sustainability steering committee made up of college leadership, faculty, staff, and students that the college truly began strategically planning for its sustainable future.

To bolster efforts to make sustainability part of the DNA of the college, in 2007 the president signed the American College & University Presidents' Climate Commitment and the college reworked its five-year master plan through a community collaboration process. Sustainability became one of the college's main strategic initiatives and a core institutional value. In 2008, the board of trustees implemented a critical, leading-edge policy to support the work of the sustainability steering committee and authorize the college president to pursue sustainability leadership strategies across all areas of the college. The Board Policy #6666 states, "The Board delegates to the Superintendent/President or designee the authority to develop practices and procedures that continue the legacy of leadership in sustainability in all areas of the college, including instruction, operations,

construction, facilities, land use, energy conservation, and environmental integrity." Les Jauron, vice president of planning and information at Butte College, said that when trustees approved their sustainability policy, it "created the framework for the many employees who were passionate about sustainability to move ahead with their ideas without worrying they were going to get the rug pulled out from under them. A lot of these kinds of initiatives die because you don't have an alignment of effort and purpose throughout the organization. The board policy was really helpful in that regard."

Butte College also engaged students and faculty early on in building its commitment to sustainability. An example for faculty is the Clear Creek Project, a sustainability curriculum development initiative on campus, which included workshops to aid faculty in infusing sustainability topics and issues into existing courses and programs. This effort led faculty to begin to envision an interdisciplinary sustainability studies certificate and degree program. Under development is an AA degree in sustainability studies, a certificate and AS degree in construction management of sustainable projects; sustainability program management, sustainable engineering technologies; and sustainable architectural studies. In addition, the excitement generated by Butte's focus on sustainability means that many students are now active at the regional, state, and national levels: In 2012, the college will host the California Student Sustainability Coalition fall convergence; the first time this annual meeting has been held at a community college.



PROGRAM DESIGN AND DELIVERY

INSTITUTIONAL COMPETENCY STATEMENT:

Prepare and educate a skilled and qualified green workforce by facilitating the development and delivery of high-quality, effective credit and/or noncredit education and training programs based on clean economy industry needs that lead to credentials and family-sustaining jobs.

MASTERY OF THIS COMPETENCY REQUIRES:

- Utilizing existing labor market data and workforce planning information to create and enhance curricula and short- and long-term training for the most promising and current green employment opportunities.
- Identifying and engaging regional employers in a variety of sectors that produce green goods and services and/or use environmentally friendly production processes and practices to help identify industry-specific skill requirements, define learning outcomes and assessment, and create industry-relevant curricula and credentials with currency.

Indicator in Action

In 2007, Georgia Piedmont Technical College convened a summit of the region's building automation and controls employers—approximately 50 Fortune 500 companies and small suppliers—all of which cited a need for standardized training for entry-level personnel who can manufacture, sell, install, and service increasingly green commercial building controls systems. All the companies participated in the design and delivery of the college's new AAS program in building automation systems, and the college has solicited employer feedback as part of a continuous improvement process. More than 150 students have been trained since the program began in 2009, and more than 80% of those graduates are currently working in the industry within the region.

- Understanding the regional economic conditions (e.g., energy prices, industry incentives) that would drive the growth of a particular green sector.
- Incorporating clean technology (e.g., hybrid technology, solar photovoltaics) and sustainability concepts into existing courses and/or certificate/degree programs—particularly in targeted green/clean technology industry segments.



-
- Integrating sustainability literacy, principles, and concepts across the college's academic disciplines and technical programs of study.

Indicator in Action

Santa Fe Community College (NM) has made a commitment that all students who graduate with a degree will demonstrate an understanding of "responsible and sustainable living" through personal accountability and cultural and global awareness. All students must complete at least three credit hours of designated coursework in the area of sustainable living. To achieve this designation from the college's curriculum committee, a course must include at least three of eight identified competencies including principles, skills and perspectives related to sustainability, and analyzing social, economic, technological, and environmental systems holistically.

-
- Identifying and utilizing enhanced career assessment, counseling, and coaching tools and resources to encourage students to consider green careers in high-demand, high-skill sectors.



- Developing noncredit curricula/courses for the greening of sectors to provide immediate access to certification programs to either expand employment options in existing trades or learn new skills.
- Demonstrating capability to innovate through strategies that accelerate learning and advancement and improve curricular and instructional strategies through modularization and contextualization reflecting real-world applications related to sustainability concepts and practices.
- Utilizing and integrating college's sustainability practices for student experiential learning opportunities.

Indicator in Action

The Energy Management Technician Program at **Lane Community College (OR)** is a 2-year AAS degree, designed to prepare students for a variety of careers in energy management, renewable energy, and resource conservation management. Built in 1965, the campus provides an array of opportunities to analyze older building systems to determine how to improve energy efficiency of existing facilities. Students study one campus building or community facility each year. They conduct energy and water audits under the supervision of a faculty member and use data loggers to record detailed information. Students then present to the facilities department a formal report that includes results of the audits, evaluation of the data, simple payback calculations, and a lifecycle cost analysis.

-
- Developing new and expanding pre-apprenticeship or apprenticeship programs to target green/clean energy technology industries.
 - Designing and implementing "learn and earn" education models with employers such as on-the-job training, cooperative education, and paid internships, focused on green workforce skills and sustainability practices.

-
- Developing and implementing new and/or enhanced clean economy industry career pathways to credentials, with intermediate certifications, that allow for multiple entries and exits and that facilitate completion and a seamless articulation to the next level of education and employment.

Indicator in Action

With a diverse student body including many disadvantaged students, **Los Angeles Trade-Technical College (LATTC)** focuses on entry-level occupations in multiple clean technology sectors including energy efficiency, renewable energy, and hybrid and electric transportation that will lead to family-sustaining wage jobs. For example, for the energy efficiency program of study, LATTC used a 5-step process to develop the career pathway, specifically: 1) conducting an industry labor market analysis to understand which occupations have the greatest potential for job growth; 2) creating a diagram of occupational ladders and lattices; 3) identifying employment eligibility requirements, work tasks, and industry-recognized credentials; 4) developing a competency model for the targeted green career pathway; and 5) engaging business and industry partners to ensure pathways are aligned with industry standards.

-
- Incorporating soft skills training—encompassing a range of interpersonal skills—into technical training to ensure workplace readiness and success in targeted clean economy sectors.
 - Incorporating business (e.g., sales and marketing) training into green sector technical courses to prepare students, once they are employed, to drive local green market growth.

Indicator in Action

After discovering gaps in training for incumbent construction workers, **Red Rocks Community College (CO)** encouraged students in construction technology courses and programs to view sustainable practice as a competitive edge for their businesses. Faculty teaches students several energy efficiency strategies, from air sealing to combinations of insulation, and ways they can articulate the cost benefits and energy savings to clients as part of a long-term client communication strategy. The college reports that students who have taken this training are faring better than their competitors in the local residential construction and remodeling market.

-
- Providing academic and student support services to help students successfully complete green-focused programs.
 - Conducting and incorporating online and technology-enabled learning courses and/or blended learning approaches to support flexible, accelerated learning.
 - Identifying, defining, and tracking measures of program and student success, with continual improvement processes built into the program.
 - Aligning entrepreneurship education programs to the college's existing green-focused training program areas and regional clean technology opportunities.

CCCC student using high-tech equipment to create and analyze biofuels

"When our students graduate, we have equipped them not only with the skills to do their work, but also with the ... ability to articulate to others why ... conservation can powerfully impact their communities."

Bud Marchant, president



Central Carolina Community College (NC): Winner, Program Design and Delivery

Sustainability has been a central tenet of Central Carolina Community College (CCCC) since the 1990s, and for the past five years, has been an institutional value in the college's long-range plan. The administration sees green not just as a means to a healthy campus environment but also, by incorporating it across degree and non-degree curriculum, as a way to increase student retention and completion.

CCCC's holistic approach to renewable energy, energy efficiency, resource conservation, and entrepreneurship has been the hallmark of its green education and training programs. The college has nine degree programs with 81 "sustainability-related" and 35 "sustainability-focused" classes in which sustainability concepts and clean technology are embedded into the curriculum. "Our institutional values include innovation, excellence, and empowering our students to improve their lives and their communities," said CCCC President Bud Marchant. "A large part of that is providing high quality, effective training in all our sustainability programs. When our students graduate, we have equipped them not only with the skills to do their work, but also with the understanding and ability to articulate to others why energy efficiency and conservation can powerfully impact their communities for good."

The college has a track record of being strategic by initiating green programming on the continuing education side, and then over time, when the capacity and reputation of the programs have been built, shifting them to credit degree programs. In 1996, a group of farmers approached the college asking to teach sustainable agriculture techniques. A year later CCCC had opened its own sustainable campus farm and

launched a certificate program. Today it has grown into an associate degree program in sustainable agriculture, the first of its kind in the United States. The program has now also expanded to include development of the natural chef program, furthering education about local and seasonal foods.

The college's biofuels program also began in continuing education and the college has steadily built it into a state-of-the-art attraction, with a training facility, a fuel testing laboratory, and a mobile biodiesel reactor. Today, as the biofuels industry faces serious challenges, the college works aggressively with national industry associations on student marketing and outreach campaigns to effectively attract students and place graduates in good careers.

Rachel Burton, a former CCCC student, co-founded Piedmont Biofuels, a 10-person firm that transforms cooking oil and grease waste into clean fuel. Her company is the only biodiesel facility in the state to be BQ9000 certified (an ISO certification for which CCCC's lab provides testing). The certification permits her company to sell its biodiesel to many public sector entities, from school systems to the military.

Burton described the comprehensive education she received: "It wasn't just biofuels or another sustainability class in isolation that was important. [Central Carolina Community College] showed the integration of fuel production, food, and solar, all working together as components. Tie that to the small business development support from the college (through its Rural Entrepreneurship through Action Learning) that I received and I had the tools I needed to launch and run my business."



STRATEGIC PARTNERSHIPS

INSTITUTIONAL COMPETENCY STATEMENT:

Develop and maintain responsive, collaborative, and mutually beneficial external relationships that help inform, sustain, and advance the college's efforts to create a sustainable and economically viable workforce, community, and college.

MASTERY OF THIS COMPETENCY REQUIRES:

- Engaging with green regional and state alliances and workforce collaboratives/intermediaries to advance the competitiveness, leadership, and capabilities of clean economy industries.
- Facilitating meaningful participation of employers to help define the program's strategy and goals, identify necessary green skills and competencies, provide resources to support education/training (e.g., equipment, instructors, funding, internships), provide assistance with program design, and, where appropriate, hire qualified students who complete related education and training programs.
- Participating in and contributing to state, regional, and local economic development plans and initiatives to attract and expand new and existing clean economy industry firms to the region, by focusing on educating and training a skilled workforce.

Indicator in Action

Northern Maine Community College has been the key convener of the regional economic development partnership Mobilize Northern Maine. The collaboration is moving on several fronts to create residential and commercial renewable energy markets, products, and businesses, including biomass conversion, wind installations, and the creation of financing structures to support energy-efficient modifications in the area. The college also leads development of a pipeline of energy and construction field technicians, administrators, and managers that will be required from area partner companies.

- Boosting economic development through entrepreneurship education programs to help startups and owners of existing small businesses gain the knowledge and skills to succeed in the emerging green economy.
- Establishing partnerships with labor unions to advise on curriculum design to embed green skills and competencies, create pre-apprenticeship courses and programs, and align training and curriculum with apprenticeship programs.
- Developing and building partnerships with 4-year colleges and universities, to align curriculum and course credit, share resources, and connect to institutional innovations such as new green technologies, processes, products, new ideas—to create advanced pathways for students and to advance local and regional green economies.
- Expanding and creating partnerships with community-based organizations to reach out to populations that are currently underrepresented in green sectors, provide social and academic support services, and align skills training and job placement activities with green career pathways at the postsecondary level, leading to family-sustaining employment.

- Working with entities including K–12 school systems, career and technical education programs, and adult education programs to align and provide a bridge from secondary and community college education, showing clearly articulated pathways to attain a degree, industry-recognized certificate, or other credentials required by the emerging green economy.

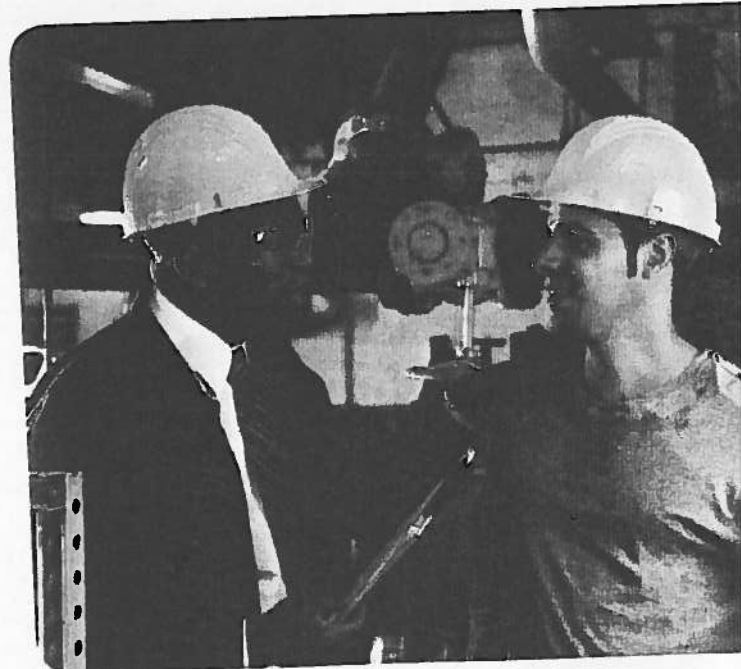
Indicator in Action

Partnering with Francis Tuttle Technology Center, Tulsa Community College, Oklahoma State University-Oklahoma City, and the University of Oklahoma's K20 Center, **Oklahoma State University Institute of Technology** conducted academies to introduce middle school educators to green concepts and processes. Teachers learned concepts of wind and solar power and green engineering, and developed lesson plans that incorporated green concepts.

- Engaging and fostering partnerships with the workforce system, including state and local workforce boards, state workforce agencies, and one-stop career centers, to actively engage the system in identifying, assessing, and referring candidates for college's green education and training programs, and providing support services to students in programs, if appropriate.
- Seeking or expanding partnerships with state and local government agencies, national organizations, foundations, and nonprofit organizations that work on sustainability issues to seed, grow, and enhance college's sustainability and green-focused workforce efforts.
- Collaborating with other community colleges and training providers, where appropriate, to build clean technology-related curriculum and/or share sustainability best practices.

Indicator in Action

For two years, more than 50 of **North Carolina's community colleges** collaborated to create the Code Green Super Curriculum Improvement Project (CIP), which has been referred to as the most sweeping curriculum project in the history of the state's community college system. The aim of the CIP was to consolidate curricula in the areas of energy, building, environment, transportation, and engineering technology while integrating sustainability skills across all areas. In doing so, the colleges have created the infrastructure that will enable more students to receive credentials in these key clean technology sectors. The North Carolina State Board of Community Colleges approved the project in the summer of 2012.



Student demonstrating the flat plate heat exchanger of a solar thermal system



"The partnerships that have been established ... to promote energy efficiency are ... vital to our community."
Rhonda Tracy, senior vice president of academic affairs

West Virginia University at Parkersburg: Winner, Strategic Partnerships

West Virginia University at Parkersburg (WVU-P) has forged partnerships over many years to serve some of the most economically distressed counties in the nation. The college's approach to green is founded on jobs and cost savings for community members. In 2009, WVU-P became a charter member of the Community College Alliance for Sustainability, a network formed to devise green economic and workforce strategies in central Appalachia and the Mississippi Delta regions. The alliance has helped solidify a host of campus sustainability activities including reductions in the institution's carbon footprint, a recycling program, an EPA Brownfields Cleanup project, and implementation of energy and agriculture programs.

An important partnership emerged with the Wood County school system in which WVU-P's commercial energy audit students conducted an energy audit of a school building as part of a required internship. Built in the 1940s, the school has had no major heating, cooling or window upgrades. As part of the coursework, students assumed the role of energy engineers and technicians for a startup company acquiring a new client in the Wood County School Board. The students collected and analyzed the school's energy usage data and presented final recommendations to the Wood County schools maintenance department.

WVU-P is also collaborating with the Wood County Commission, the local homebuilders association, and several regional lending agencies in the Energy Efficiency Upgrades partnership. The college's weatherization and residential energy audit students are studying area homeowners' attitudes toward energy efficiency upgrades and performing comprehensive energy audits in targeted neighborhoods. A unique feature of this project is the participation of the college's

communications program students, who serve as "professional communications consultants" working with weatherization students to hone their presentation skills as they go door-to-door to conduct energy efficiency surveys.

Dr. Rhonda Tracy, WVU-P senior vice president of academic affairs, noted the importance of strategic partnerships: "The partnerships that have been established among our students, our faculty, and area businesses to promote energy efficiency are important and vital to our community. The real-world, hands-on experience gained by our students will better prepare them for the workforce, and the services provided to the community by the students will enhance the community's understanding of energy efficiency concepts while improving the bottom line of their energy operations."

WVU-P's industry partnerships are also critical to its efforts to reduce its own campus greenhouse gases. Its performance contracting partnership with Siemens Corporation has helped achieve \$400,000 in utility savings per year.

Four Interrelated Energy Programs

The college's programs in Residential and Commercial Electricity; Heating, Ventilation, Air Conditioning and Refrigeration; Energy Assessment and Management Technology; and Solar Energy Technology share a series of common foundational energy technology classes designed to enable students to get college-level and industrial certifications in a number of related fields, broaden their exposure, and provide diverse opportunities for employment after college.



COMMUNITY ENGAGEMENT

INSTITUTIONAL COMPETENCY STATEMENT:

Pursue substantive and meaningful regional, state, and local community engagement strategies, policies, and partnerships to leverage and align community college assets and resources to build and advance clean economy industry job growth and healthy sustainable regions.

MASTERY OF THIS COMPETENCY REQUIRES:

- Developing an explicit sustainability strategy for the college that incorporates, enhances, and aligns with the surrounding community's sustainable development plans and practices, as appropriate.

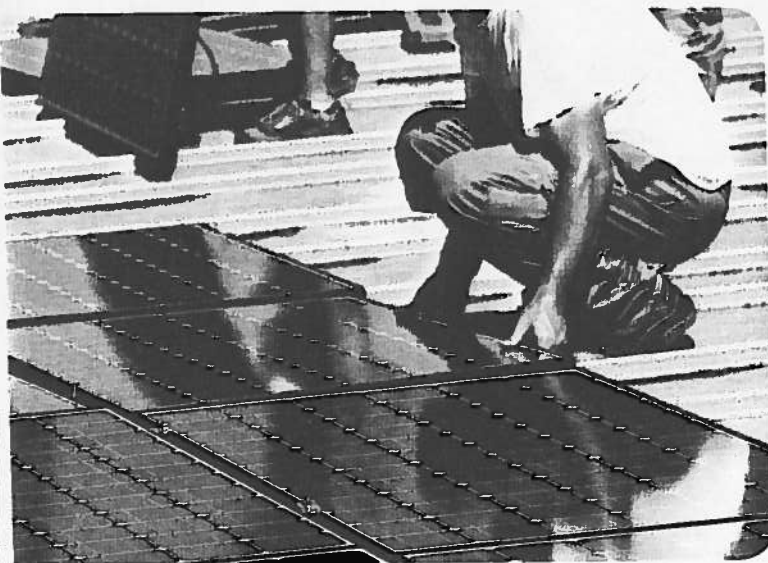


- Providing specific sustainability-themed service learning opportunities, combining community service with classroom instruction.

Indicator in Action

Guam Community College (GCC) established the Eco-Warriors, a nonprofit student organization that is open to community members. GCC Eco-Warriors' recycling kept nearly 300 pounds of aluminum and plastics out of Guam's landfill. Eco-Warriors conduct eco-tours to showcase the sustainability features of the learning resource center on campus, which serves as a model for the island community.

- Mobilizing and empowering college staff, faculty, and administrators to engage in effective community participation and productive dialogue on sustainability and green economic growth issues to create strong alliances with residents and regional groups (e.g., through college forums, speaker series, conferences).
- Facilitating appointment of college leaders, faculty, and staff to serve at highest levels of local, regional, and multijurisdictional entities to help formulate comprehensive regional sustainability vision, policies, and plans; incorporate college's assets;



and inform clean economy industry workforce and economic development investments.

- Advocating for state and/or local sustainability and clean energy public policy (e.g., building energy code changes, net metering programs) that, if implemented, would create jobs.

Indicator in Action

At **Santa Fe Community College (NM)**, engaging in clean energy-related public policy development is core to its mission and critical to ensuring that students get and succeed in jobs. Faculty and students worked with the Santa Fe Area Home Builders Association to green the local building codes that were adopted by the city of Santa Fe. The college is now training building inspectors on the new building codes.

-
- Providing informational resources for campus and community sustainability education programs, including career information to help community members learn about promising green jobs in targeted green/clean technology industries.
 - Engaging students to serve as educators and ambassadors to the community on sustainability concepts, principles, and practices.
 - Serving as a model for sustainability practices and exemplary green workforce development programs by using the campus as a living laboratory/demonstration site for community residents.
 - Developing and implementing continuing education and community enrichment workshops promoting sustainability concepts and practices (e.g., home energy savings) to drive regional behavior change.
 - Educating and engaging small businesses in the community about green products, processes, and technologies to build awareness, foster new green business models (e.g., HVAC company adding an energy auditing service), and take action on broader sustainability issues.

Indicator in Action

In an effort to reduce communitywide greenhouse gas emissions, **Haywood Community College (NC)** partnered with the Haywood County Chamber of Commerce to launch the Green Business Initiative to help area businesses become more efficient and sustainable. The college works with companies to develop sustainability plans to track and measure energy efficiency, water quality, and recycling on their way to Green Leader certification status.

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- Educating policymakers on positive results produced by college green sector initiatives and the potential to strengthen workforce and economic development by targeting and supporting key green industries through national, state, and local strategic investments.





"Beyond the campus, we want to show how Delta [College] can influence sustainability at a community level."

Jean Goodnow, president

Delta College (MI):

Winner, Community Engagement DNA Strand

Delta College plays an integral role in the social, environmental, and economic health of Michigan's Great Lakes Bay (GLB) region. Delta's commitment began in 2007 with the signing of the American College & University Presidents' Climate Commitment. That same year, the school was selected as an AASHE Sustainability Tracking, Assessment, and Rating System (STARS) pilot campus. In 2008, Delta convened a campuswide green summit, created a sustainability office, and began developing a comprehensive plan to reduce the carbon footprint of the campus and the community. "Beyond the campus, we want to show how Delta [College] can influence sustainability at a community level," emphasizes Delta College President Jean Goodnow.

Delta has collaborated with community partners on numerous alternative transportation activities, including installation of an electric vehicle plug-in station that is accessible to the community and helping to create a nonmotorized greenway, the first link to connect two counties. The college's effort in spearheading the greenway brought together 10 organizations including the state, counties, townships, foundations, and other regional colleges. In addition, the college joined with local transit authorities, a big-box store, and a neighboring university to establish a park-and-ride, hybrid-conversion bus route called the Green Line that was introduced with a yearlong bus ride subsidy

in celebration of the college's 50th anniversary. The park-and-ride provided the impetus to seek a viable regional transportation plan, and since then the college has been involved in several major initiatives, including the Saginaw Transit Authority Master Plan Advisory Committee, the GLB regional transportation initiative group, and the Bay Metropolitan Planning Summit.

Delta's leadership in providing alternative energy training and engaging employers to create alternative energy solutions is recognized throughout the community. The college offers a range of training in automotive, wind, and chemical process technology and provides personal enrichment and professional development courses focused on sustainability. Delta has partnerships to provide training for businesses including Dow Chemical Company, which manufactures solar shingles; Dow Kokam, an advanced lithium polymer battery technology manufacturer; and Hemlock Semiconductor, a manufacturer and distributor of hyperpure polysilicon for solar cell applications.

In addition, more than 500 students have built sustainable Habitat for Humanity homes, and more than 400,000 student hours have been contributed to community service in the last year to promote sustainability.



"We recognize that to be successful, sustainability must truly become part of the fabric of the college's culture."
Ken Atwater, president

Hillsborough Community College (FL):

Winner, Overall Category

The "Overall" category represents all four DNA Strands, representing a comprehensive and strategic approach to achieve green transformation.

Hillsborough Community College (FL) has a record of environmental stewardship that dates back to the earliest days of the college's existence. One of its first signs of commitment was a community-based environment of resource and education center, the Institute of Florida Studies. Over the next four decades, the college embarked on a variety of activities focused on sustainability and the development of a green workforce, including building strategic partnerships and engaging the community along the way. New academic programs in environmental science, aquaculture, engineering technology, and alternative energy were established, and existing programs including architecture, early childhood education, and automotive technologies, were updated to include green technologies or sustainability-related learning outcomes.

Yet, as significant as these individual activities were, they did not function collectively to produce the type of synergy needed for systemic change within the institution. Two pivotal actions, however, did: the signing of the American College & University Presidents' Climate Commitment and the engagement of a small group of volunteers who assembled to form a Green Team, later the Sustainability Council, focusing on environmentally oriented projects. From these actions, three strategies emerged as critical to moving the college toward an integrated and comprehensive sustainability action plan. The strategies were: 1) mobilizing the disparate grassroots efforts to develop personal connections, leverage expertise for future planning, and generate the synergy

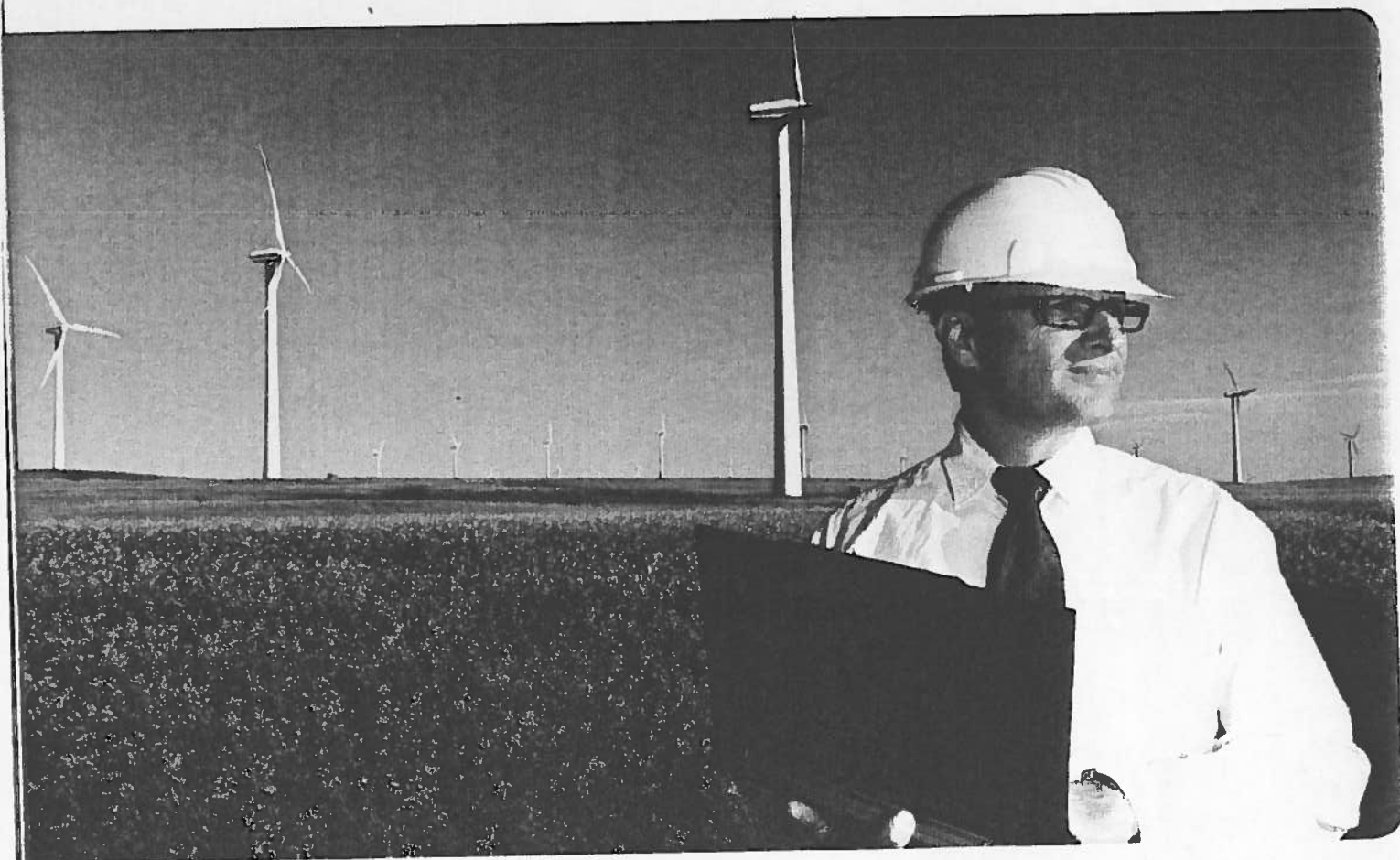
needed to pursue more large-scale projects; 2) aligning sustainability initiatives with broader college priorities as a means of fostering new partnerships and promoting a "value-added" view of sustainability among college leaders; and 3) building "collaborative knowledge partnerships" among colleges, private firms, nonprofit organizations, and government agencies to promote program development and entrepreneurship within the green sector.

The comprehensive approach has been successful for the college because it works from and builds on the college's strengths, operates from the perspective that sustainability is a systemic issue and must be addressed in a multifaceted manner, and leverages the college's twin priorities of education and community engagement. Perhaps one of the most significant achievements for the college that highlights its commitment was the opening of the SouthShore Campus, which was designed and built for Gold LEED (Leadership in Energy and Environmental Design) certification. The campus incorporates numerous sustainable features including a rainwater recycling system to service restrooms, a raised HVAC system for greater heating and cooling efficiencies, maximum use of natural light and cutting-edge lighting technology, landscaping with all native plants, and on-site renewable energy.

"We recognize that to be successful, sustainability must truly become part of the fabric of the college's culture," said Ken Atwater, president of Hillsborough Community College. "We're seeing this occur every day. It's not just about operations, or curriculum, but sustainability is now a core institutional value, and we will continue to build upon this commitment as we plan for the future."

Conclusion

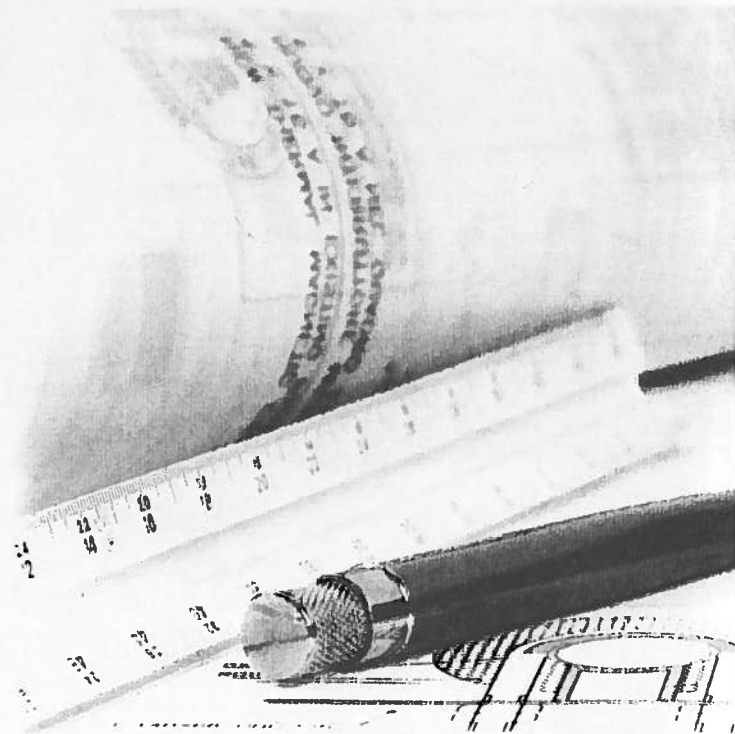
The Green Genome Framework and Self-Assessment Tool are critical first steps for community colleges in determining how their green initiatives can become more aligned with strategic institutional priorities and thus more indispensable to how the college does business. As more colleges move forward to create an integrated and systemic approach to sustainability and green workforce and economic development, the chances grow greater of community colleges reaching the collective goal of a viable and vibrant green economy.



APPENDIX: GREEN GENOME INSTITUTIONAL SELF-ASSESSMENT TOOL

Is Sustainability Part of the DNA of Your Community College?

The following is a 47-question self-assessment tool designed by the SEED Center and Los Angeles Trade-Technical College to help colleges determine the structures, programs, policies, and partnerships needed to integrate green and sustainability as part of the institution's DNA. The assessment aligns with the Green Genome Framework. See www.theseedcenter.org/greengenome to download and for more information.



INSTRUCTIONS

To maximize the value of this tool, colleges should consider the following data collection and analysis process (although colleges should determine the course of action that makes the most sense for their institutions):

STEP	DESCRIPTION
Identify a process "owner."	Choose an individual with responsibilities for coordinating the delivery of sustainability programs and services (curricular, facilities, etc.) across the institution.
Disseminate to other key campus stakeholders.	Include senior administrators from finance, academic and student affairs, planning, and facilities as well as key faculty leaders and department chairs.
Convene stakeholders to discuss results.	<p>As a group, discuss findings:</p> <ul style="list-style-type: none"> • What areas represent our strengths (indicated by high scores)? Why? • What areas represent growth opportunities (indicated by low scores)? Why? • Is there important sustainability work that we are not doing represented on the self-assessment? If so, what? • Do we have internal disagreements about our self-assessment scoring? What can we learn from the different perspectives? • Are we at or near critical mass in any area? Where can we have the greatest impact? • What are our priorities for the next year? Three years? • What are our immediate next steps? Who is accountable for meeting near-term objectives? • How does this self-assessment fold into existing strategic planning at the college?

This assessment tool is designed to be taken periodically by the same campus stakeholders to measure progress over time.

RATING SCALE

Haven't Started = 1 Beginning (rarely) = 2 Emerging (sometimes) = 3 Competent (often) = 4 Innovating (consistently; best in class) = 5

MY/OUR COLLEGE OR ORGANIZATION:	RATING	SUPPORTING EVIDENCE/NOTES
GOVERNANCE		
1. Has leadership (administration, trustees) that understands the importance of making sure the college implements green or sustainability policies and practices aimed at reducing individual and collective impact on the environment and promoting the green economy/job expansion		
2. Has established a formal commitment to campus sustainability (e.g., through the president's Climate Commitment; STARS program; SEED)		

RATING SCALE

Haven't Started = 1 Beginning (rarely) = 2 Emerging (sometimes) = 3 Competent (often) = 4 Innovating (consistently; best in class) = 5

MY/OUR COLLEGE OR ORGANIZATION:	RATING	SUPPORTING EVIDENCE/NOTES
3. Has an overall institutional culture that supports the "triple bottom line" concept (preserving the environment, increasing economic prosperity, and promoting social equity)		
4. Has integrated sustainability principles and green workforce development practices and programs into the institution's strategic master and educational plans		
5. Has appointed a key, high-level decision-maker(s) and committed resources to coordinate and integrate sustainability and green workforce development efforts within the college		
6. Has created and empowered a sustainability/green committee or task force of faculty, staff, and others to formulate policy related to green workforce development including curriculum, methods of instruction, academic standards, and degree requirements—and integrated these efforts with other campus sustainability efforts (e.g., greening of facilities)		
7. Has committed resources to provide faculty conceptual, physical, and virtual professional development opportunities to support the scholarship of teaching and learning for sustainability, green technical skills, and new and emerging technologies		
8. Has obtained resources and the capacity to serve as the "leverager" of multiple funding sources to expand and sustain campus and/or community green-sector initiative activities		
9. Has the agility and flexibility to make changes to programs and courses as new occupations, standards, and technology become available in the green economy		
Subtotal, Governance: _____ out of 45		

RATING SCALE

Haven't Started = 1 Beginning (rarely) = 2 Emerging (sometimes) = 3 Competent (often) = 4 Innovating (consistently; best in class) = 5

MY/OUR COLLEGE OR ORGANIZATION:	RATING	SUPPORTING EVIDENCE/NOTES
PROGRAM DESIGN AND DELIVERY		
10. Understands the region's most important green/clean tech industry sectors (e.g., wind, solar, energy efficiency, alternative fuels, water)		
11. Has used rigorous labor market data and workforce planning information to create and enhance curricula and training for the most promising and current green employment opportunities		
12. Identifies and engages regional employers in a variety of sectors that are producing green goods and services and/or using environmentally friendly production practices to help identify industry-specific skill requirements, define learning standards, and create industry-relevant curricula		
13. Tracks national green industry standards (e.g., NABCEP, U.S. Department of Energy's home energy professional certifications) and, where appropriate, taught to these standards		
14. Has developed curriculum/courses for the greening of sectors on the noncredit side of the college to provide immediate access to certification programs to either expand employment options in existing trades or learn new skills		
15. Incorporates clean technology (e.g., hybrid technology, solar photovoltaics) and sustainability concepts into existing courses and/or certificate/degree programs—particularly in targeted green/clean tech industry segments		
16. Has developed new green/sustainability-focused courses and/or certificate/degree programs—particularly in targeted green/clean tech industry segments		
17. Formally integrates sustainability literacy, principles, and concepts across disciplines		
18. Has an institutional approach to using campus sustainability practices (e.g., the new LEED building, recycling program) as "living laboratory" experiential learning opportunities for students (e.g., students performing energy audit on existing campus buildings)		

RATING SCALE

Haven't Started = 1 Beginning (rarely) = 2 Emerging (sometimes) = 3 Competent (often) = 4 Innovating (consistently; best in class) = 5

MY/OUR COLLEGE OR ORGANIZATION:	RATING	SUPPORTING EVIDENCE/NOTES
19. Incorporates soft skills (e.g., people skills, problem-solving) into technical training to ensure workplace readiness in targeted green sectors		
20. Incorporates business (e.g., sales and marketing) training into green-sector technical courses to prepare students, once employed, to drive local green-market growth		
21. Has developed and implemented contextualized basic education with examples and real-world applications related to sustainability to help learners—regardless of career path—more quickly acquire skills to transition into credit-bearing programs		
22. Has designed and implemented, with employers, "learn and earn" education models such as on-the-job training, cooperative education, paid internships, and registered apprenticeships focused on green workforce skills and sustainability practices		
23. Has modularized curricula in green areas so students have multiple entry and exit points and are awarded certificates or other credentials (e.g., "stackable" certificates) on successful completion of each module		
24. Has developed new and/or expanded pre-apprenticeship or apprenticeship programs that target green/clean tech industry(industries) and/or partners with labor unions to embed green skills and competencies into these programs		
25. Provides career assessment, counseling, and coaching tools to encourage students to consider current green careers in high-demand, high-skill sectors		
26. Has shortened the time it takes a student to complete green education and training programs—including innovations to decrease time in adult basic and developmental education (e.g., accelerated degree programs, accelerated basic skills programs)		
27. Identifies, defines, and tracks measures of program and student success, with continuous improvement processes built in		
28. Conducts and uses appropriate online and technology-enabled learning courses and/or blended learning approaches to support accelerated learning in a flexible manner		

RATING SCALE

Haven't Started = 1 Beginning (rarely) = 2 Emerging (sometimes) = 3 Competent (often) = 4 Innovating (consistently; best in class) = 5

MY/OUR COLLEGE OR ORGANIZATION:	RATING	SUPPORTING EVIDENCE/NOTES
29. Has explicitly aligned entrepreneurship education programs to the college's existing green training program areas and regional clean technology opportunities		

Subtotal, Program Design and Delivery: _____ out of 100

STRATEGIC PARTNERSHIPS

30. Facilitates the meaningful participation of employers (e.g., advisory boards, industry panels) to help define program strategy and goals, identify necessary green skills and competencies, provide resources to support education (e.g., equipment, instructors, internships), and, where appropriate, hire qualified students who complete programs		
31. Has a working relationship with a wide array of industry associations, alliances, and community organizations (e.g., local homebuilders, unions, weatherization assistance programs, workforce collaboratives) that support the training and possible placement of workers		
32. Works with the workforce system (e.g., workforce boards, state workforce agencies, one-stop career centers) to identify, assess, and refer candidates for the college's education and training programs, connect students with employers, and provide support services to students in programs (particularly in targeted green/clean tech industry segments)		
33. Participates in state, regional, and/or local economic development plans and initiatives to attract new green firms to the region and/or support the expansion of existing firms		
34. Works with K-12, career and technical education, and adult education programs to align and provide a bridge from secondary and community college education to attain a degree or other credentials required by the emerging green economy		
35. Partners with four-year institutions to align curriculum and course credit, share resources, and connect to institutional research in green areas—to create advanced pathways for students		

RATING SCALE

Haven't Started = 1 Beginning (rarely) = 2 Emerging (sometimes) = 3 Competent (often) = 4 Innovating (consistently; best in class) = 5

MY/OUR COLLEGE OR ORGANIZATION:	RATING	SUPPORTING EVIDENCE/NOTES
36. Works with community-based organizations to reach populations that are underrepresented in green sectors, provide adequate support services, and align training and placement activities with green career pathways		
37. Collaborates with other community colleges and training providers to build clean technology-related curriculum and/or share sustainability activity best practices		
38. Builds partnerships with state and local government agencies, national organizations, foundations, and nonprofits that work on environmental and energy issues, to seed, grow, and enhance the college's sustainability and green workforce efforts		

Subtotal, Strategic Partnerships: ____ out of 45

COMMUNITY ENGAGEMENT

39. Has an explicit sustainability vision and strategy that incorporates, enhances, and aligns with the surrounding community's sustainable development plans and practices		
40. Provides specific sustainability-themed service-learning opportunities, combining community service with classroom instruction		
41. Mobilizes college staff, faculty, administrators, and students to engage in effective community dialogue on sustainability to create strong alliances with residents and regional groups (e.g., through college forums, speaker series, conferences)		
42. Facilitates college leaders serving at the highest levels of local, regional, and multijurisdictional public-sector bodies to help formulate comprehensive regional sustainability vision, policies, plans, and workforce and economic development investments		
43. Administers informational resources for campus and community sustainability education programs, including career information to help community members learn about promising green jobs in targeted green/clean tech industries		

RATING SCALE

Haven't Started = 1 Beginning (rarely) = 2 Emerging (sometimes) = 3 Competent (often) = 4 Innovating (consistently; best in class) = 5

MY/OUR COLLEGE OR ORGANIZATION:	RATING	SUPPORTING EVIDENCE/NOTES
44. Educates small businesses in the community about green products and practices (e.g., energy auditing as a possible new service offering for an HVAC company)		
45. Serves as a model for sustainability practices by using the campus' green built environment (e.g., new green building, sustainable campus garden) as a demonstration site for community members		
46. Develops continuing education and community enrichment workshops promoting sustainability practices (e.g., home energy savings) to drive regional behavior change		
47. Advocates for sustainability and clean energy public policy at regional, state, and/or local levels		

Subtotal, Community Engagement: _____ out of 45

TOTAL SCORE: _____ OUT OF 235



Sustainable RSCCD Committee

2014 – 2015 Proposed Meeting Dates

All meetings will be held from 3:00 – 4:00 p.m.
District Office – Decision Room #340

September 17, 2014

October 15, 2014

November 19, 2014

February 19, 2015

March 19, 2015

April 16, 2015

May 21, 2015