

# Cerritos College Sustainability Plan



“Building *Sustainable* Futures through Learning”



**Liberal Arts & Disabled Student Service Programs**

**Dedicated July 2014**

*The building uses orientation, window canopies and reflective glazing to reduce heat load while allowing natural light to illuminate interior spaces.*



*Water Conservation -  
The campus uses  
reclaimed water for  
nearly all irrigation use  
while also utilizing  
drought tolerant  
landscaping.*



*Providing energy efficient classrooms with the latest  
learning technology to promote student success.*

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## WHAT IS SUSTAINABILITY?

*The United Nations Bruntland Commission defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.”*

*The Cerritos College slogan “Building Futures through Learning” reflects a sustainable approach to all educational endeavors.*

## I. Executive Summary

Founded in 1955, Cerritos College is a public comprehensive community college with over 40 buildings situated on 135 acres. The College serves over 23,000 students each semester and is committed to providing accessible, low-cost, and quality education for everyone in its community. Cerritos College has benefited from voters’ support of two General Obligation bonds totaling \$560 million for capital improvement projects. The Facilities Master Plan (FMP) provides a construction phasing plan to implement the building program funded by the bonds.

The College has initiated a vigorous building program that has resulted in six new major buildings, eight buildings in various development phases, and seven renovations, modernizations or smaller projects. With the fiduciary responsibilities entrusted to the College with bond tax dollars, the Cerritos College community also has the responsibility to build a campus that recognizes the environmental, economic, and social benefits of a sustainable future for its stakeholders. At its June 18, 2014 meeting, the Cerritos Community College District Board of Trustees acknowledged its commitment to sustainability with the adoption of Board Policy 3580 titled Environmental Sustainability.

The Cerritos College Sustainability Plan is a holistic, site-specific guide to promoting sustainability on the campus and was developed with the input of all constituencies – the governing board, administration, faculty, staff, and students. Historically, Cerritos College has employed sustainable practices with great success. However, the very nature of sustainability requires continued awareness, development, and improvement. The implementation and continued refinement of this plan will ensure that the College is ready to meet the ever-changing educational and facilities needs of its students and community, and expand the learning environment to support student success and completion.

## II. Background

The state of California is at the forefront of sustainability policy and regulations, with many of its college and university campuses ranked among the greenest in the nation. The best practices found at these institutions are showcased on a yearly basis through the national conference of the [Association for the Advancement of Sustainability in Higher Education \(ASSHE\)](#) and the [California Higher Education Sustainability Conference \(CHESC\)](#). These important congregations illustrate the broader nationwide and statewide context and the active role of higher education in sustainability. The California Clean Energy Jobs Act (Proposition 39) was approved on November 6, 2012, by the voters of California. This initiative made changes to corporate income taxes and provides for the transfer of funds annually from the General Fund to the Clean Energy Job Creation Fund for five fiscal years, beginning in 2013-2014. The 2013-14 budget allocated \$51 million of Proposition 39 revenue to community colleges to support energy efficiency projects and workforce development training. In the subsequent four years, community colleges will receive an estimated \$60 million annually.

### Cerritos Community College District

The Cerritos Community College District is one of 72 community college districts within the California Community College system, which encompasses 113 community colleges. Founded in 1955, Cerritos College is a single campus district, serving an area of 52 square miles of southeastern Los Angeles County. The College offers degrees and certificates in more than 180 areas of study in eight divisions, and serves more than 23,000 students annually. The Cerritos College physical plant consists of more than 40 buildings totaling 900,770 gross square feet on a 135-acre campus. In 2004 and 2012, general obligation bonds were approved by voters of the Cerritos Community College District. Notably, these bonds have provided much needed financial resources for enabling the College to improve and enhance its physical resources as it builds a sustainable learning environment that is conducive to meeting the needs of current students, as well as the anticipated needs of those who will attend in the future.

### History of Sustainability Measures at Cerritos College

Sustainability efforts of Cerritos College have focused on improving energy efficiencies. As new technologies are developed, the College has installed energy efficient lighting, constructed a new central plant to provide chilled water for efficient cooling, installed energy efficient boilers, connected existing buildings to the central plant, and implemented mechanical and lighting Energy Management Systems. Cerritos College is an active participant of the [California Community College/Investor Owned Utility \(CCC/IOU\) partnership](#), created to provide financial incentives and project support for energy efficiency improvements.

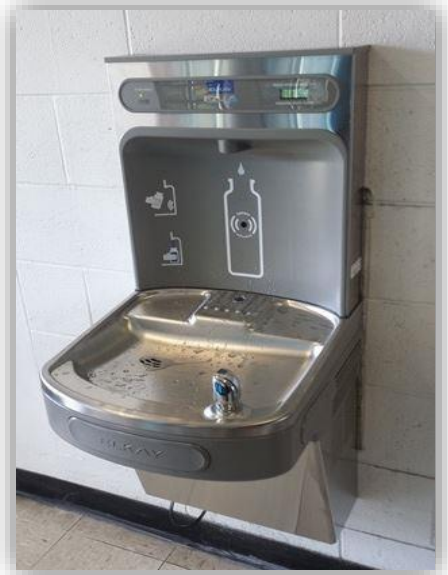
*A list of the College's completed energy savings projects can be found in Appendix VI.2. From 2006-2015, Cerritos College has received over \$895,000 in utility incentives while significantly reducing electricity and natural gas consumption at the college.*

## Proposition 39 Projects

As previously noted, The California Clean Energy Jobs Act (Proposition 39) has provided funding to California Community Colleges for energy saving projects that create green energy jobs, advance the clean energy economy, and reduce energy use and greenhouse gas emissions. Proposition 39 had an initial five year funding program, beginning with the first year of funding in FY 2013-14. In conjunction with the California Community College/Investor Owned Utilities (CCC/IOU) partnership, community colleges submit project proposals with associated rebate incentive from the utility providers. Cerritos College has been actively pursuing and implementing Proposition 39 projects such as exterior and interior lighting retrofits, and the recommissioning of the energy intensive Science building. The college has an ambitious schedule of Proposition 39 projects for the remaining two fiscal years, with additional projects targeted if the funding is extended for future fiscal years. The college recently performed an interior lighting fixture survey of seven large, high traffic buildings. This survey will be the foundation for identifying lighting retrofits for Proposition 39 funding, as well as other funding opportunities if Proposition 39 funds expire in FY 2018-19.

## Go Green Task Force

Under the leadership of the student body government, the Associated Students of Cerritos College (ASCC) established a **Go Green Task Force** that focuses on creating a campus environment that fosters sustainability through conscious decision-making, practices, and strategies that emphasizes ecological stewardship. One of the primary strategies to achieve this goal is to promote cultural change by organizing important events such as Earth Week and the Green Fest to promote environmental awareness and celebrate green practices while educating students and the community through workshops, lectures, and documentary screenings. The Go Green Task Force also has influenced operational practices and construction standards at the college. In 2014, Go Green established a campus-wide recycling program, encouraged ASCC to fund mass transit bus passes, and funded hydration stations that provide free, public access to clean drinking water that helps to reduce the college's waste stream by decreasing the disposal of plastic bottles. Hydration station type drinking fountains are now the standard for new construction, and additional locations have been identified and funded for retrofit.



## Water Use/Reclaimed Irrigation Water

***By using reclaimed water for landscape irrigation, Cerritos College saves more than 30 million gallons of water per year. This is equivalent to saving the same amount of water that 185 families of four would use for one year.***

***Cerritos College 2014  
Green Community College  
Leadership Award***



While a primary focus of campus sustainability initiatives has been energy conservation, programs have been implemented to address other aspects of sustainability. Since 1990, Cerritos College has expanded the use of reclaimed water for irrigation purposes. Over 95 percent of the campus landscape and athletic fields are watered with reclaimed water purchased from a local municipality provider. The College was recognized with the 2014 Green Community College Leadership Award for this resource conservation measure.

Building on that success, Cerritos College landscape designs have incorporated less traditional California landscapes which has accelerated progress toward planting of drought tolerant and native species. In FY 2014-15, the Chancellor's office for the first time allowed Districts to allot scheduled maintenance state funding for the remediation of traditional landscape areas to drought tolerant plants. Cerritos was one of the first Districts in the state to take advantage of this funding opportunity, using these funds to initiate re-landscaping of the campus frontage roads. Encompassing over 30,000 square feet of land, Alondra Boulevard and Studebaker Road both had existing outdated streetscape designs requiring intensive water use for irrigation. These landscape frontages were redesigned to define the campus edge, provide identifiable gateways into the campus, and create a pedestrian-oriented experience for both the students and the surrounding community. This landscape improvement was consistent with the campus Facility Master Plan, creating defined campus entryways that establish an open connection to the community at-large and facilitate public transportation nodes. These frontage landscapes also had several old, inefficient domestic water sources for irrigation. The remediated landscape project installed all reclaimed water for the irrigation in these areas, further reducing the use of domestic water for landscape purposes on Cerritos College grounds.



## Alternative Fuel Transportation

The College has committed resources to increase public awareness and promote the use of clean transportation technology. In 2014, the College installed eight public access charging stations for electric vehicles strategically located across campus. Thus far, these electric vehicle charging stations have reduced greenhouse gas emissions by 7,940 kilograms while providing a vital public service to the community. With the growing demand for alternative fuel transportation technology, the College is also training students through its Cerritos College Advanced Transportation Technology and Energy program with the skills needed to support the clean transportation industry. The College was awarded \$150,000 from the California Energy Commission to purchase equipment to provide alternative fuels training. Currently the program has purchased a compressed natural gas Transit Connect vehicle and natural gas dispensing station, an electric Nissan Leaf and charging station, various hybrid trainers, and additional electrical diagnostic tools for electric vehicle training.



## Policies

To encourage California Community colleges to pursue a more sustainable future, the CCC Board of Governors approved the [Energy and Sustainability Policy](#) in January 2008, which describes goals for each campus to reduce its energy consumption.

The Cerritos Community College District Board of Trustees demonstrated its support for sustainability by adopting Board Policy 3580 titled Environmental Sustainability at its June 18, 2014 meeting. Also, at its September 17, 2014 meeting, the Board of Trustees adopted Resolution 14-05 Declaring Design and Development of New Facilities to be Leadership in Energy and Environmental Design (LEED) Certified.



*The future LEED certified Health & Wellness Complex, to be built in 2017.*

## **Cerritos College Sustainability Work Group**

Cerritos College embraces shared governance as a collaborative decision-making process in which the members of each of the major campus constituencies – the Board of Trustees, administration, faculty, staff, and students – perform appropriate roles. The Facilities Planning Committee is a key shared governance committee which established the Sustainability Work Group, an ad hoc advisory group tasked with development of the Cerritos College Sustainability Plan including its vision, goals, and practices. The Sustainability Work Group is an inclusive body of constituents and the membership is described in Appendix VI.1.

***Cerritos Community College has a significant history of sustainability initiatives, often developed independently by separate entities on campus. The Sustainability Plan and its governance will provide a mechanism for a holistic and systematic approach to sustainability that Cerritos College can apply to all facets of the college activities, stakeholders and capital investment.***

### III. Vision Statement and Goals

#### Vision Statement

The Sustainability Work Group developed the following vision statement to guide Cerritos College in its sustainability planning:

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***“Cerritos College will adopt a culture of sustainability through quality educational curriculum, promote core values through institutional best practices, and provide community leadership through actions and partnerships; thus creating an awareness that fosters sustainable practices, resource conservation and environmental stewardship that benefits the college, community, and nation.”***

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#### Goals

The following sustainability goals established by the Sustainability Work Group are intended to provide guidance for specific strategies described in Section IV: Programs, Projects, and Practices for Implementation:

1. Create a campus and community wide culture of sustainability
2. Continually improve the campus energy efficiencies
3. Apply sustainability measures to all capital improvements
4. Analyze, reduce, and recycle the College’s waste stream components
5. Develop renewable energy generation that offsets consumption
6. Enhance curriculum educational programs that emphasize sustainability
7. Implement sustainability measures in operational practices
8. Promote alternative transportation and commuting
9. Support healthy urban environments and ecosystems
10. Support global climate action

## IV. Programs, Projects, and Practices for Implementation

### Management and Organizational Structure

The successful implementation of the Sustainability Plan requires commitment, continuity, and leadership. The Sustainability Work Group was established in 2014 as an ad hoc advisory group of the Facilities Planning Committee, chaired by the Vice President of Business Services. With the approval of this plan by stakeholders, the next step for the college to further advance its sustainability efforts will be to establish a shared governance committee dedicated to sustainability, with regular meetings and reporting schedules. The mission of this College Committee for Sustainability will be to manage, implement, and promote sustainability throughout the college via active participation on campus and through the institution's shared governance processes.

Management and organizational structure is necessary to coordinate sustainability efforts across campus. For maximum effectiveness, an Office of Sustainability should be established as a physical space where sustainability stakeholders can congregate and collaborate on the various sustainability objectives identified in the Sustainability Plan. In the future, an appointed Sustainability Coordinator can work with staff, faculty, students, the **Go Green Task Force** and the community in implementing and improving sustainability on campus. The Office of Sustainability will provide data, reports and updates through internal and external presentations, newsletters, web site management, and social media to promote the sustainability practices of Cerritos College.

The College strives to integrate sustainability planning into the Facilities Master Plan (FMP). Recently, the District adopted a long-term Integrated Energy Master Plan (IEMP) that complements the FMP. This plan embodies a holistic approach that integrates energy planning with the College's educational and facilities master plan. The IEMP recognizes the importance of coordinating short and medium term energy cost savings with longer term needs by strategically integrating and leveraging the synergies between energy conservation, energy efficiency, demand response, demand management, renewable energy production and distributed generation. The Cerritos College Integrated Energy Master Plan is a comprehensive strategic plan that identifies various energy related projects and methodologies to be employed by the college in support of the continued progression of the campus building and modernization program.

Furthermore, the Board of Trustees adopted (a) Board Policy 3580, titled Environmental Sustainability; a campus wide policy focused on developing and implementing best practices that promote energy conservation and energy efficiency; (b) Resolution No. 14-05 declaring all new buildings in excess of \$5 million be LEED certified; and (c) Resolution No. 14-14 authorizing creation of a Cerritos College Cal Recycle Program.

The College supports sustainability measures through state funded Proposition 39 or G.O. Bond expenditures, as well as general or restricted fund expenditures as needed.

## Energy Efficiency

In 2008, the California Energy Commission, the California Public Utilities Commission, and the California Power Authority jointly updated the 2003 Energy Action Plan which established what is referred to as the California Loading Order for energy projects by state agencies. This loading order establishes a preferred approach for implementing energy projects:

1. Energy Efficiency / Energy Conservation
2. Demand Response
3. Renewable Generation
4. Distributed Generation

In following the California Loading Order, Cerritos College will identify, analyze, and improve areas for energy savings. Energy efficiency is the first priority of the College due to favorable economics compared to demand response or renewable energy generation. (Goals 2, 3, 7, 9, 10)

The College has set energy consumption reduction goals based on identification of baseline data years for electrical, natural gas, and domestic water usage (Appendix VI.3). Using these baselines, the Sustainability Work Group or, alternatively, the Sustainability Work Group will establish reductions goals for one-year, three-year, and five-year consumption usage (Appendix VI.4). Annual reports regarding progress towards achieving the set goals will be shared with stakeholders. As target year goals are met, new baselines and reduction goals will be established.

The College has committed mechanisms for the implementation of energy efficiency projects. When funding is available, the College will actively request state Proposition 39 funds for energy saving projects. The College will also conduct an RFQ for Government Code 4217 procurement practices of energy efficiency contractors to provide best value engineering for the projects. This procurement practice is intended to identify contractors that can perform energy saving performance contracts that provide the best value to the College, as opposed to accepting the lowest bid for these services. This procurement method is especially desirable for the College to acquire best quality products and services with guaranteed energy saving parameters.

Strategies will also be developed for logical energy efficiency measures. Using the energy modeling provided with the IEMP, enhanced monitoring data, and ASHRAE Level II energy audits, the College will prioritize buildings for projects and implement audit recommendations.

There are also plans to implement ongoing energy monitoring. Once energy management software and hardware upgrades are completed, the College will develop trending data reports for review. These trending data reports will be compared with established energy reduction goals and shared with stakeholders.

Cerritos College will also continue to participate in the [CCC/IOU Efficiency Partnership](#) to identify energy savings measures. Funding for energy efficiency projects will be continually solicited from federal, state, and local agencies.

The College's design and equipment standards that require energy efficient equipment will be updated as needed. As technology advances, the College will update campus standards to require the latest energy efficiency standards for building design, mechanical equipment, and building envelopes. Campus appliances, office equipment, electronics, building products, mechanical and plumbing products, and other equipment will meet [Consortium for Energy Efficiency \(CEE\)](#) specifications and be [Energy Star](#) certified.

*Energy costs are a significant line item in the Cerritos College budget, comprising the second biggest operational expense after personnel. Energy is a vital factor in managing school buildings and optimizing the learning environment for students. However, the U.S. Environmental Protection Agency (EPA) estimates that 25 percent of energy use in schools is wasted.*

## Energy Conservation

Cerritos College will promote energy conservation on campus primarily through raising awareness and managing building operations to minimize energy waste. (Goals 1, 7, 9, 10). Utilizing elements of the energy conservation toolkit created by The Center for Green Schools at USGBC, Cerritos College can effect energy conservation with little or no investment. There are many potential benefits of engaging faculty, staff and students in energy conservation. Beyond the significant cost savings, there is the reduced environmental impact and expanded opportunities for student learning and leadership. Through sound energy conservation measures and proper building management, energy costs can be reduced without affecting the quality of the educational experience.

Cerritos College, working with the student led **Go Green Task Force**, will develop communications material or a newsletter on the role of students in energy conservation on campus. This will be distributed in the schedule of classes catalog, on line and as a handout across campus. Using the faculty senate forum, the **Go Green Task Force** representatives can ask for faculty help in disseminating information on energy conservation, and assisting with implementing energy saving measures such as turning off lights, powering down monitors, and keeping window blinds down. Furthermore, the College Committee for Sustainability will promote energy conservation through campus information forums as well as on line newsletters, printed materials, and committee reports.

Significant energy savings can be achieved through sensible building management. The College will work collaboratively to administer sound scheduling techniques, so that building spaces are utilized properly and economically. Particular attention will be focused on high energy demand

summer scheduling, ensuring buildings are not solely cooled for a minimal amount of classes, and exploring options to group classes into buildings for efficiencies. Further building management techniques such as mechanical equipment controls, light occupancy sensors and scheduling controls will be applied to minimize energy costs across campus.

The College will also participate in best value demand response programs. Educating the campus stakeholders to the financial benefit of demand response, and the minimal impact on College operations, is essential to a successful demand response program. The College will seek out and actively participate in demand response to obtain rebate funds that offset the college energy costs. The savings of energy conservation and demand response initiatives are funds that can be directly restored to the general fund to utilize toward the core mission of student success.

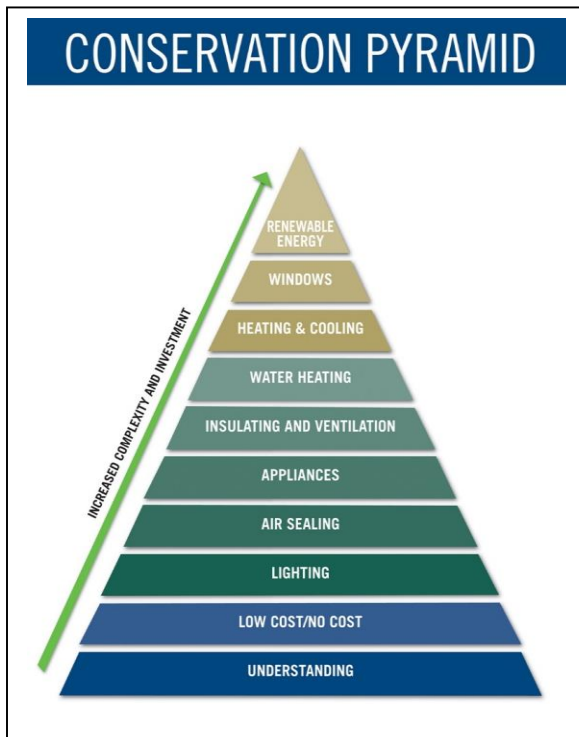
### **Facilities Operations**

Cerritos College recognizes the significant impact facilities operations can have on the factors that promote a sustainable college campus. Highly functional, sustainable buildings and environments support academic instruction and student success (Goals 1, 2, 3, 7, 9, 10).

The College will promote staff awareness, establish training programs, and teach skills in energy efficiency methods, equipment, and analysis, specifically among facilities personnel. Preventative maintenance schedules and tasks will be developed to provide equipment optimization and enhanced life cycle results. Updated energy management systems will be implemented in campus buildings with continuing education and training for facilities staff, ensuring optimal utilization. For optimal generation of cost savings, an Energy Management position is recommended to identify trends, compile data, provide reports, and develop strategies for efficiencies.

Strategies to optimize building occupancy and mechanical and lighting schedules will be identified through collaborative and inclusive processes. Facilities, Academic Affairs, Community Education, Adult Education, and Athletics will work together to maximize efficient use of facilities, buildings and external/internal lighting to manage energy costs. In accordance with shared governance procedures, a policy for minimum and maximum set points for heating and cooling will be developed. Based on refined operating schedules, facility use scheduling, and enhanced oversight, the College will develop protocols for HVAC scheduling that are flexible yet provide necessary climate controls for a positive educational environment. Third party commissioning will be utilized for all new construction buildings and to identify existing, high-energy load buildings for retro-commissioning as needed.





To further reduce the use of domestic potable water, Cerritos College will develop strategies to reduce water consumption in existing buildings around campus through the installation of low-flow water fixtures such as sinks, showers, toilets, and explore the practicability of additional waterless urinals. On average, these efficient appliances use approximately 30 percent less water than their conventional counterparts.

Custodial Services will continue to focus on utilizing environmentally friendly “Green Seal” and “EcoLogo” cleaning products and practices, while purchasing concentrated cleaning products to reduce the environmental impact of shipping. The College will also continue to deploy non paper based hand drying systems in new and modernization construction activities to reduce the quantity of paper product waste on campus.

### Sustainable Building Practices

Cerritos College has an active General Obligation Bond building program and deeply respects its responsibility to taxpayers, stakeholders, and the global community to promote sustainable building practices. As the building program progresses on campus, the College will continue its commitment to adopting sustainable practices that create modern, efficient, and optimum learning environments for students (Goals 1, 2, 3, 6, 9, 10).

The College will adopt green building standards for new construction projects and, in accordance with Board Resolution 14-05, all new buildings with a cost of \$5 million or greater will be designed and built as LEED certified. As required by law, all new construction buildings shall be designed to meet the latest standards of the CALGreen Code (California Green Building Standards Code <http://www.bsc.ca.gov/Home/CALGreen.aspx> ) as well as adhere to Title 24 (<http://www.energy.ca.gov/title24/>) of the California Code of Regulations, also known as the California Building Standards Code. The goal of California Title 24 energy standards is the reduction of energy use primarily on promoting more energy-efficient buildings, and Title 24 only considers the fixed infrastructure: building envelope, heating and cooling, water heating, some lighting restrictions. CALGreen goes beyond energy performance to encompass many different factors such as reduced construction waste, water conservation, non-toxic sealants and renewable materials. The infrastructure building codes in CALGreen also exceed Title 24 by 15 percent to reduce environmental impacts through better planning, design, and construction practices, and also addresses energy, water, material use, and environmental quality.

The College will continue to mandate that design professionals working with the college use the Savings by Design process offered by public utilities. Savings by Design encourages energy-efficient building design and construction practices, promoting the efficient use of energy by offering up-front design assistance supported by financial incentives based on project performance. The College has a history of incentives paid by utilities for design work in our construction building program, which are documented in Appendix VI.2.

The College will also employ an integrated systems approach for building design. The IEMP is an essential planning tool as the building program progresses. The IEMP is intended to compliment the FMP, and will establish benchmark Energy Use Indexes (EUI) and detail energy design guidelines for new buildings. Building design professionals will be tasked to use an integrative design process where climate, use, building design, and systems are considered holistically. These areas will then be analyzed by all team members to identify overall trends and similarities.

### **On-Site Generation and Renewable Energy**

With utility costs accounting for a significant portion of the operating budget, Cerritos College recognizes the value in offsetting energy consumption with self-generation. In following the California Loading Order, renewable energy is a logical progression in campus energy and sustainability strategies (Goals 1, 5, 9, 10).

The College will research and identify renewable energy opportunities on campus. The college will actively pursue large scale solar generation sites, investigating carport applications or land based panels in the raw land currently leased for agriculture.

Furthermore, the college should select buildings for roof top solar panels, equipment specific applications and all other feasible solar generating power installations. Through LEED certified construction projects, the College will mandate the renewable energy sources for new buildings. Small, standalone renewable energy units for lighting, displays, charging stations, or other projects will also be promoted. Funding or rebates for capital investment in renewable energy projects will be pursued through the CCC/IOU partnership, California Solar Initiative, and other agency incentives or grants.





***Cerritos College uses 100% solar power to operate its parking permit machines. A great example of a standalone equipment specific solar application.***

Energy efficiency and conservation measures will be evaluated and implemented prior to on-site renewable energy projects, in alignment with California's loading order of priorities for addressing the state's overall energy needs by reducing energy consumption and costs. By focusing first on efficiency and conservation measures, the College is positioned to achieve optimum effectiveness for its use of energy and maximum return on investment for its energy projects. Renewable energy projects should be considered concurrently with energy efficiency and conservation measures as an essential component of a synergistic approach to energy.

New building construction design should research alternate onsite energy sources such as natural gas turbines for electricity, fuel cell storage, roof top solar panels and all other developing energy technologies.



The College will promote the development of small educational displays of renewable energy generation. These can be incorporated into renewable energy courses and as part of lesson plans on sustainability in all courses. There are examples of such demonstration units at other local colleges, and these displays can provide tangible, hands on experience for student learning.

## Transportation, Commuting, and Campus Fleet

The Cerritos Community College District seeks to be a community leader in reducing greenhouse gas emissions, traffic congestion, and energy consumption through alternative transportation options. The College seeks to reduce vehicular traffic associated with the campus to accomplish these reductions, as well as lower costs related to parking infrastructures (Goals 1, 6, 7, 8, 9, 10).



***A typical bike sharing operation that could be utilized on the campus.***

The College will collaborate with student government (ASCC) to optimize the use of Metrolink bus passes for students, continue to offer ridesharing benefits for employees and explore methods to increase participation, and utilize social media platforms to promote ridesharing opportunities, networking, and bus schedules. The College will also provide enhanced conditions for bicycle use to, from, and on campus by increasing theft prevention and recovery on campus, monitoring bike rack locations with security cameras, and considering a bike-sharing program for campus transportation.

The College's vehicle fleet will be maintained to promote use of low emission vehicles. Procurement of an all-electric vehicle for short trips by college personnel will also be considered, and bus and van transportation will be coordinated for efficiency. Campus Police will explore the feasibility of alternative fuel vehicles as patrol vehicles, as well as bicycles for patrols or cadet duties on campus.

The College will support community efforts to reduce greenhouse gas emissions through alternative transportation by maintaining the existing electric vehicle (EV) charging stations and continuing to charge a fair rate that promotes EV use by the public. Based on use data, the College will periodically assess the possibility of expanding EV charging station capabilities. The College will continue working with local cities including Norwalk and Cerritos to maintain, enhance, or expand bus stop opportunities for college stakeholders.

## Water, Wastewater, and Sustainable Landscaping

At the time of this plan's development, the state of California is in the fourth year of a historic drought. In late 2015, the California Building Standards Commission approved new water efficiency requirements for public school and community college irrigated landscape areas. The changes to the 2013 California Green Building Standards Code apply to all new construction, and building additions of more than 1,000 square feet. For projects on an existing campus, the area of landscape rehabilitation must equal 75 percent of the new building's footprint. Even with the established use of reclaimed water on the campus, the extensive building program at Cerritos College will mandate significant landscape rehabilitation on other areas.



Cerritos College recognizes that water conservation is a key component of sustainability and has demonstrated a commitment to conserving this natural resource. Thus, the College will refine its efforts and build upon the successes of water conservation (Goals 1, 4, 7, 9, 10).

The College will establish and monitor domestic water conservation goals to establish baseline consumption years for domestic water (Appendix VI.3), and one-year, three-year, and five-year reduction goals will be adopted (Appendix VI.4).

To meet these reduction goals, the College will identify retrofit fixtures for water conservation such as urinals, low flow fixtures, and timed faucets, maintain campus standards for new construction that requires low water use fixtures, and implement additional water conservation measures. Stakeholders will be provided with progress updates.

The College will also strive to limit wastewater and storm water pollution by containing runoff, creating retention areas, and minimizing the use of landscape chemicals through integrated pest management practices and the expanded use of compost.

Sustainable landscaping on the campus grounds will be supported by continuing to maximize use of reclaimed water for all applicable landscape irrigation, reviewing and updating the campus standards plant palette to emphasize drought tolerant and California native plants, utilizing low water use plant materials, water efficient irrigation, minimal turf areas, and water harvesting methods for all new site development, and identifying existing landscaped areas for xeriscaping measures.



## Solid Waste Reduction and Management

Public Resources Code (PRC) § 42926 requires each state agency and large state facility to submit an Annual Waste Management Report to the California Department of Resources Recycling and Recovery (CalRecycle) summarizing the agency's achievement of 50 percent diversion of solid waste (as required by PRC § 42921) for the previous calendar year.

California Community Colleges will be required to submit a California State Agency Waste Management Annual Report for calendar year 2016 on or before May 1, 2017. Legislation passed in 2014, AB 1826 requires any public entity that generates more than 8 cubic yards of organic waste to arrange for recycling services for that organic waste starting April 1, 2016. This requirement falls to 4 cubic yards of organic waste on January 1, 2017 and to 4 cubic yards of commercial waste on January 1, 2019.

Cerritos College will reduce solid and organic waste by adopting the basic principles of reduce, reuse, and recycle to decrease impacts on landfills and greenhouse gas emissions, as well as save on disposal costs and create revenue (Goals 1, 4, 7, 9, 10). Baseline year quantities for solid waste (Appendix VI.3) and one-year, three-year, and five-year reduction goals (Appendix VI.4) will be established. Specific contract language for solid waste disposal mandating diversion, recycling, and recycling revenues will also be developed.

The college will commit to reducing all waste with a long term goal of zero net waste. This reduction of solid waste can be done by discouraging the purchase of plastic bottles through increasing the availability of hydration stations, phasing out paper towels by installing hand dryers, and reducing white paper printing by educating students, faculty, and staff.

The most environmentally, socially, and economically sound manner of addressing the college solid waste stream is to separate it at its source. For this reason, the college will consider integrating ASCC's CalRecycle certified recycling program within the infrastructure of facilities to assure its effectiveness, continuity, and expansion. This can be best accomplished by establishing a Waste Management Specialist position, with duties to implement waste reduction strategies, identify areas of opportunity, and monitor compliance with state regulations. The waste management specialist will oversee ASCC-funded recycling technicians and provide them with the expertise, guidance, and continuity necessary for a successful recycling program. The college can dramatically cut disposal costs, better access diversion data, and support students by sharing recycling revenue with ASCC.

## WASTE REDUCTION & RECYCLING

*Waste efforts, guided by the three Rs — reduce, reuse, recycle — make sense environmentally, economically and socially. Waste management is key to reducing carbon emissions. The decomposition of solid waste in landfills results in the release of methane, a greenhouse gas 21 times more potent than carbon dioxide. Burning wastes and the transportation of waste to disposal sites produces carbon dioxide emissions. Recycling and sustainable manufacturing reduce the use of fossil fuels to obtain raw materials and produce new items.*

## **Green Purchasing**

Cerritos College will support sustainability through socially responsible purchasing practices (Goals 1, 6, 7, 9, 10). The Purchasing Department will strive to balance environmental and fiscal responsibilities in making Green Purchasing decisions. The overall goal of this policy is to reduce the adverse environmental impact of our purchasing decisions by buying goods and services from manufacturers and suppliers who share our commitment to the environment. Green purchasing is the method wherein environmental and social considerations are given equal weight to the price, availability and performance criteria that are traditionally used to make purchasing decisions.

The Purchasing Department will promote the purchase of products with the highest percentage of recycled content available, providing the acceptable use and performance standards. The Purchasing Department will:

1. Develop Environmentally Preferred Purchasing (EPP) procedures to support organizational sustainability goals and objectives.
2. Promote the purchase of environmentally friendly products with the highest percentage of recycled content, energy efficient, and/or bio-based products.
3. Examine and encourage supplier's sustainability efforts to offer products that offer a high-recycled content and are produced without harm to people or the environment.



The Culinary Arts Program will be informed about and encouraged to adopt sustainable food purchasing practices. The Purchasing Department will collaborate with the Culinary Arts Program to develop and adopt a sustainable food purchasing policy that can encourage the production, accessibility and consumption of high quality food. This will include developing a guide for a policy on local, seasonal and sustainable food purchasing with the potential benefits that impact the food system. The college will also identify responsible produce sources like those certified by USDA Organic, Food Alliance, Protected Harvest, Rainforest Alliance, Aquaculture Stewardship Council and Marine Stewardship Council.

*“As we all seek solutions to vexing employment and environmental challenges, this program offers California Community Colleges and all of our students an opportunity to acquire nationally recognized credentials that will qualify our graduates for career opportunities in green building and design fields that are continuing to grow.”*

*Henry A. J. Ramos Member, Board of Governors California Community Colleges*

## **Student and Curriculum Development**

A key component of the Cerritos College mission states that “... *the college develops in students the knowledge, skills, and values that prepare them to be productive participants in the global community.*”

Sustainability is the future of the global community, and Cerritos College has a responsibility to pass these core values of sustainability to its students through their educational experiences (Goals 1, 6, 9, 10).

The College will develop a plan to integrate sustainability and green technologies with its curriculum offerings by utilizing resources from the [United States Green Building Council \(USGBC\) Community College Handbook](#), developing sustainability-focused coursework, and providing academic counseling for green career opportunities.

Most importantly, all Cerritos College students must demonstrate an understanding of their role in the most pressing environmental issues of our time. This can be achieved by ensuring all incoming Cerritos College students learn about sustainability in their required orientation sessions.

The College will explore possible instructional initiatives that may include increasing the number of existing environmental science course offerings and implementing a Sustainability Certificate, incorporating sustainability topics into required orientation sessions for all incoming students, creating learning community courses around sustainability topics, and practicing green chemistry in college classrooms.

“Greening” of existing courses is necessary in order to promote cultural change at Cerritos College. The college will initiate a campus-wide survey in order to pinpoint faculty who currently integrate principles of sustainability into their courses. By investigating similar efforts and analyzing survey results, the college will develop a plan to integrate sustainability with its curriculum offerings and educate faculty through workshops or forums that will act as professional development opportunities. Faculty implementing eco-literacy and sustainability principles in their lesson plans shall be recognized with a green flag under their course section in the course catalog.

The college can further promote sustainability in the classroom by creating a Global Citizenship AA requirement, where courses focused on environmental awareness will be eligible for credit. A student meeting the Global Citizenship AA requirement would develop an awareness of the diversity of cultures and an appreciation for the interconnectedness of cultural, ecological, economic, political, social and technological systems of the contemporary world. This prepares



the student to make a responsible contribution to a rapidly changing global society. In order to facilitate this, the college will consider increasing its offerings of environmental science courses.

The breadth and depth of the interdisciplinary concept of sustainability cannot be adequately addressed by solely incorporating it into existing courses. For this reason, the college will investigate possible new course offerings and certificate programs, such as a Sustainability Certificate or Sustainable Urban Landscapes, that will further Cerritos College students in the concepts of sustainability. As appropriate, counselors will be informed about newly created courses and certificates and provide academic advising for students in these areas of study.

The Office of Sustainability will act as the central resource for educating faculty, staff, and students outside of the classroom through ongoing workshops, lectures, and professional development opportunities. The College will determine if one of the planned learning gardens scheduled for construction on campus could be an Environmental Technology Garden - a learning space powered by alternative energy, modeling sustainable building concepts, and demonstrating sustainable landscape. This space would make an ideal location for the Office of Sustainability as a centralized meeting place for workshops, training, and other sustainability endeavors.



*2016 ASCC Go Green Task Force*

## Campus and Community Outreach

Sustainability is often measured in terms of impact on the environment, social equity, and economics - known as the "triple bottom-line" of sustainability. Cerritos College is committed to ensuring that the operations of the college promote social systems that support a healthy and productive life for all people, locally and globally. The success of Cerritos College's sustainability efforts is directly related to the individual actions of students, faculty, and staff. While physical and operational improvements will improve sustainability and environmental outcomes, it is critical that the College increase awareness of its initiatives to result in behavioral changes that create a culture of sustainability. Public Affairs and the Office of Sustainability will jointly facilitate these connections between the campus and the community.



Through these efforts, the College must also ensure transparency of the plans, projects, and accomplishments of sustainability measures to educate, inspire, and lead stakeholders and the community towards a greener future (Goals 1, 2, 6, 7, 9, 10).

Updates will be provided through sustainability reports to shared governance committees, showcasing of capital improvement projects that implement sustainability design and operations, sharing of best practices and resources with institutions of higher education, and active engagement in green conferences that promote Cerritos College's accomplishments.

To deeply engage the college stakeholders, an online survey can be developed that will challenge and educate faculty, staff, and students on sustainable practices in their daily actions on campus and in the community. Results of the surveys can be used to collect data to track the effectiveness of the sustainability message to the stakeholders.

A Sustainability website has been developed to publicize the actions of the College, communicate accomplishments, and provide links to educational materials and other resources. A link to that website is here: <http://cms.cerritos.edu/campus-guide/green-campus.htm>

The Insight newsletter, mailed biannually to each household within the District boundaries, will have a section devoted to the sustainability initiatives of the College. Further possibilities for this newsletter include information for residential sustainability efforts, news on Cerritos College community hazardous waste collection and sustainability partnerships with community organizations. The Insight newsletter can be located here: <http://cms.cerritos.edu/insight/>

## Healthy Urban Ecosystems

Cerritos College is located within the third largest urban area of North America, Los Angeles County. It is not common to perceive the college campus as an ecosystem, but this approach is a natural progression of the sustainability measures promoted in this plan. An urban ecosystem is simply the community of plants, animals, and humans that inhabit the urban environment. It is an area physically dominated by built structures like buildings, roads, sewers, and power lines. The college campus also contains a rich patchwork of green spaces — athletic fields, ornamental lawns, street plantings, commercial landscaping, and learning gardens — that provide the living heart of the urban ecosystem. By considering the campus as part of a broader ecological system, the college sustainability plan must consider how it affects other ecologies with which it interacts. Urban ecosystems link closely with and are greatly influenced by their surroundings through energy and material flow, information circulation, and cultural communication.

There are operational practices and approaches that Cerritos College can adopt to promote a healthy urban ecosystem on campus. The campus should consider methods to eliminate and control storm water and surface discharge pollution prevention. New construction should incorporate retention areas for storm water, and at the same time create diverse habitats for flora and fauna. Landscaping practices can incorporate native plants that provide habitat, shelter and food for wildlife. The National Wildlife Federation offers certification for wildlife friendly gardens at: <http://www.nwf.org/How-to-Help/Garden-for-Wildlife/Certify-Your-Wildlife-Garden.aspx>. The Cerritos College Child Development Center recently received this certification as a wildlife habitat for migrating butterflies. Through the new building construction process, green spaces can be connected by habitat corridors throughout the entire campus.

Grounds keeping and maintenance practices can promote a healthy ecosystem through the use of integrated pest management that will eliminate the use of pesticides on campus. Tree trimming should be conducted during seasons when birds are not nesting or migrating, and efforts should be made to avoid disturbing nests. There should be a transition on campus to reduce the number of grounds keeping tools and machines that rely on fossil fuels to operate. The Office of Sustainability will work with the grounds keeping employees to develop sustainable guidelines, maintenance practices and procedures.

Encouraging the college stakeholders to view the campus as an urban ecosystem will enhance the learning environment and opportunities for students and the community. As the campus implements the Facilities Master Plan, the outdoor environment should be interconnected with an enhanced and improved landscape network that encourages students to spend more time outdoors in both academic and social settings. A sustainably minded campus should focus on the use of native species, enhancement of the natural ecosystem, replenishment of ground water, reduction of waste, and opportunities for outdoor education.

## V. Monitoring and Reporting

### Measuring Performance

Cerritos College recognizes that methods must be established for measuring progress and performance in order for its sustainability efforts to be successful. Furthermore, results must be communicated to ensure accountability and transparency, and to inspire the College and surrounding community.

The College will establish baseline years for reporting progress on reduction goals for energy usage, waste, and other quantifiable sustainability goals (Appendices VI.3, VI.4, VI.5, VI.6), update and maintain energy savings data for report purposes (Appendix VI.2), and determine economic return of investments, savings investment ratios, and simple payback timelines for capital projects in excess of \$250,000.

### Reporting Performance

The College Committee for Sustainability will provide regularly scheduled reports to shared governance committees and will post up-to-date information on public websites regarding sustainability programs, projects, and practices. The committee will establish a regular meeting schedule to develop, monitor, and support identified sustainability goals (Appendix VI.1).

The College should consider registering as a member of AASHE, the Association for the Advancement of Sustainability in Higher Education, whose website is located at this address: <http://www.aashe.org/>

This organization has a mechanism for monitoring and reporting:

The Sustainability Tracking, Assessment & Rating System™ (STARS) is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance. This system, located at: <https://stars.aashe.org/>, is designed specifically for the full spectrum of higher education, and provides positive feedback, best practices, and creates incentives for continual improvement toward sustainability.

*This plan should be viewed as a living document: It will evolve and change over time, with a formal process to review, update, or establish new goals, standards and commitments every five years.*

## **VI. Appendices**

### **1. 2014-2016 Sustainability Work Group Roster**

Ty Bowman, Web Administrator

Noorali Delawalla, Director of Fiscal Services

Dr. David El Fattal, Vice President of Business Services

Aline Gregorio, Faculty

Areal Hughes, Student

Dr. Stephen Johnson, Vice President of Student Services

Dr. Crystal LoVetere, Faculty

Rachel Mason, Dean of Business Education and Humanities/Social Sciences

Susan McNulty, Adjunct Faculty

David Moore, Director of Physical Plant and Construction Services

Inez Pineda, Lead Buyer

Dr. Patricia Robbins-Smith, Director of Community Education

Charles Robertson, Faculty

Lucy Self, Account Technician II (Athletics)

Anna Valcarcel, Faculty

Andrea Wittig, Executive Assistant

## 2. Cerritos College Energy Saving Projects Data 2006-2015

### Energy Saving Electrical Projects Completed

	Project	Status	Gross kWh Savings	Gross kW Reduction	Incentive Amount	Notes
1.	Campus Central Plant	Installed	1,651,101.00	642.00	\$ 528,352.32	
2.	Lighting Retrofit	Installed	672,558.00	317.00	\$ 100,883.70	
3.	PC Network Software	Installed	401,600.00	40.16	\$ 30,120.00	
4.	Vending miser	Installed	104,780.00	-	\$ 14,614.60	
5.	Screw-in CFL Retrofit	Installed	218,875.00	19.23	\$ -	
6.	New Construction - Above Code Design - HVAC Energy Reduction	Installed	17,072.30	4.69	\$ 4,737.00	AP
7.	New Construction - Above Code Design - HVAC Energy Reduction	Installed	55,345.00	15.00	\$ 15,340.00	PST
8.	New Construction - Above Code Design - Lighting	Installed	19,277.00	4.90	\$ 3,380.00	PST
9.	New Construction - Above Code Design - Low SHGC Glass	Installed	4,440.00	1.50	\$ 1,266.00	FPC
10.	New Construction - Above Code Design - Variable Speed Drives	Installed	5,234.00	1.40	\$ 1,450.00	FPC
11.	New Construction - Above Code Design - Lighting Controls	Installed	35,578.00	12.60	\$ 4,206.00	FPC
12.	Plug Load Occupancy Sensor Controls	Installed	31,531.50	11.14	\$ 3,300.00	
13.	Walkway Lighting	Installed	129,765.00	16.67	\$ 11,143.60	PROP 39
14.	Exterior Lighting	Installed	190,223.60	17.87	\$ 45,653.66	PROP 39
15.	Interior Lighting	Installed	153,506.50	56.53	\$ 36,841.56	PROP 39 SC & LRC
16.	Science Retro-Commissioning	Installed	201,937.00	18.97	\$ 56,000.00	PROP 39
	<b>TOTALS</b>		<b>3,892,823.9</b>	<b>1,179.66</b>	<b>\$ 857,288.44</b>	

## 2. Cerritos College Energy Saving Projects Data 2006-2015 (Continued)

### Energy Saving Natural Gas Projects Completed

	Project	Status	Therms/Yr	Incentive	Notes
1.	Pool Heaters	Installed	21,500	\$21,500	Pool Exchange
2.	Science RCx	Installed	10,823	\$10,823	RCx Gas portion
3.	Culinary Arts Equipment	Installed	5,446	\$5,446	New equipment
	<b>TOTALS</b>		<b>37,769</b>	<b>\$ 37,769</b>	

### 3. Utility Consumption Baseline Data

#### Baseline 2014 Year Data for Electricity, Natural Gas, Domestic/Reclaimed Water Use and Solid Waste

UTILITY	PERIOD	USAGE	COMMENTS
ELECTRICITY	01/01/2014 to 12/31/2014	13,527,542.40 kWh	
NATURAL GAS	01/01/2014 to 12/31/2014	242,301 therms	
DOMESTIC WATER	01/01/2014 to 12/31/2014	24,552,726 gal	
RECLAIMED WATER	01/01/2014 to 12/31/2014	38,335,000 gal	
SOLID WASTE	01/01/2014 to 12/31/2014	1,437,800 lbs	Operations Only



#### 4. Utility Consumption Reduction Goals

Usage reduction goals for Electricity, Natural Gas, Domestic Water, Reclaimed Water and Solid Waste

	ONE YEAR GOAL		THREE YEAR GOAL		FIVE YEAR GOAL	COMMENTS
<b>ELECTRICITY</b> (kWH)	<b>1%</b> 135,275 kWH		<b>5%</b> 676,377 kWH		<b>10%</b> 1,352,754 kWH	
<b>NATURAL GAS</b> (Therms)	<b>1%</b> 243 therms		<b>5%</b> 12,115 therms		<b>10%</b> 24,320 therms	
<b>DOMESTIC WATER</b> (Gallons)	<b>1%</b> 245,527 gallons		<b>5%</b> 1,227,636 gallons		<b>10%</b> 2,455,072 gallons	
<b>RECLAIMED WATER</b> (Gallons)	<b>1%</b> 383,350 gallons		<b>5%</b> 1,916,750 gallons		<b>10%</b> 3,835,500 gallons	
<b>SOLID WASTE</b> (Pounds)	<b>1%</b> 12,378 pounds		<b>5%</b> 61,890 pounds		<b>10%</b> 123,780 pounds	