



Rancho Santiago Community College District
Sustainable RSCCD Committee

March 14, 2018

District Office

Executive Conference Room #114

3:00 – 4:00 p.m.

Agenda

1. Update on Recycling
2. Review - Utility Data with Focus on Water
3. Review - Draft 2016-2018 Sustainability Plan Report
4. Logo Usage
5. Student Representative Report
6. Other

Next Meeting:

May 16, 2018

3:00 p.m.

Executive Conference Room #114

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 inspire, transform, and empower a diverse community of learners.

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 the following to our diverse community: courses, certificates and degrees that are accessible, applicable, and engaging.



SUSTAINABILITY PLAN

~~2014-2016~~ 2016-2018

REPORT

DISTRICT OFFICE

~~SEPTEMBER 21, 2016~~

TBD

Approved by the Sustainable RSCCD Committee
on ~~September 21, 2016~~

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DRAFT

INTRODUCTION

On March 3, 2015, the Rancho Santiago Community College District (RSCCD) Board of Trustees approved a District Sustainability Plan. This report was compiled on behalf of the Sustainable RSCCD Committee (SRC) by the Facility Planning, District Construction and Support Services Department and covers a two year fiscal period from ~~2014-2016~~ 2016-2018 update to the Sustainability Programs & Plans Checklist Summary from Section 4 of the Sustainability Plan. The information was compiled through a collaborative effort between the colleges, District and members of the SRC. The report reflects achievements in areas of programs, projects and plans completed as well as work underway in various phases of implementation.

The SRC's primary goal over the last several years has been to establish recycling programs at the colleges and District facilities by contracting with a new waste hauling management service provider. The desire is to have the waste hauler provider incorporate recycling activities best suited to the needs of each facility and report recycling outcomes. On-going efforts in this area are still underway and making progress.

Although the primary goal as a committee was to focus on recycling, many activities were continued by completing programs and projects that meet several goals of the plan and are updated in this report. The SRC continues to strive towards implementing the goals of the Sustainability Plan and is proud to present the attached report covering the fiscal year period of ~~2014-2016~~ 2016-2018.

DRAFT

SUSTAINABLE RSCCD COMMITTEE MEMBERS ~~2014-2016~~ 2016-2018

| Santa Ana College | Santiago Canyon College | District Office |
|---|---|--|
| <p>Vice President, Administrative Services Dr. Michael Collins (2016-2017)</p> <p>Interim Vice President, Administrative Services Adam O'Connor</p> | <p>Vice President, Administrative Services Arleen Satele, Ed.D. (2015-2016)</p> | <p>Chancellor Raúl Rodríguez, Ph.D. (2014-2016)</p> |
| <p>Vice President, Continuing Education Centennial Education Center James Kennedy, Ed.D. (2014-2016)</p> | <p>Vice President, Continuing Education Orange Education Center Jose Vargas (2014-2016)</p> | <p>Assistant Vice Chancellor, Facilities Planning & District Construction & Support Services Carri Matsumoto (2014-2016)</p> |
| <p>Faculty Kimo Morris, Ph.D. (2014-2016)</p> <p>Lisa McKowan-Bourguignon (2016)</p> <p>Marty Moreno</p> <p>Jim Isbell</p> | <p>Faculty Dr. Doug Deaver (2014-2016)</p> <p>Jim Isbell (2015-2016)</p> <p>Leah Friedenrich (<i>resigned</i>) (2014-2016)</p> <p>Angela Guevara, Orange Education Center</p> <p>Vacant</p> | |
| <p>Classified Staff Angela Guevara (2016)</p> <p>Vacant</p> | <p>Classified Staff Kelsey Bains (2016)</p> <p>Vacant</p> | <p>Classified Staff Laurene Lugo (<i>retired</i>) (2016)</p> <p>Vacant</p> |
| <p>Student Kyle Murphy (2014-2015)</p> <p>Brandon Vu</p> | <p>Student Brisa Mendoza (2016)</p> <p>Claudia Vidal</p> | <p>Others</p> <p>Judy Iannaccone, Director of Public Affairs & Publications (2014-2016)</p> <p>Orange County Small Business Development Center Elisabeth Pechs (2014-2015)</p> |

VISION STATEMENT, GOALS, 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.

| Goal No. | Area of Sustainability | Established Goal |
|----------|-------------------------------|---|
| 1 | Campus & Community Engagement | Encourage participation in and awareness of sustainability issues through effective education and engagement. Integrate sustainability into all facets of student life, including student government, clubs, and organizations. |
| 2 | Curriculum Development | Facilitate the inclusion of environmental sustainability and social responsibility into existing curriculum and develop new curricula and career-oriented certificate and training courses with an emphasis on sustainability. |
| 3 | Energy | Utilize 2012-2013 benchmark study to establish annual energy use and demand reduction goals (target 5% reduction). Plan appropriate energy efficiency, demand reduction, or clean self-generation measures by mid-2015 to meet reduction goals. |
| 4 | Facilities Design & Operation | Design and construct all major capital projects and renovations to meet LEED Silver “equivalent” standard and operate facilities to meet solid waste, energy, and water use reduction goals. Employ sustainable landscaping practices. |
| 5 | Solid Waste Management | Continue to implement the landfill diversion program, expand it to include all sectors of recycling and waste reduction to landfills, and strive to meet the statewide landfill recycling goal of 75% by 2020. |
| 6 | Sustainable Procurement | Implement efforts to source campus food, materials, supplies, information technology, equipment, and resources from organizations committed to social responsibility and environmental sustainability. |
| 7 | Transportation | Reduce the reliance of students, faculty, and staff on single occupancy vehicle commutes by 5 percent within the next five years, and encourage the use of low and zero emissions vehicles. |
| 8 | Water Management | Perform water use benchmarking studies at both campuses and the District Office to better understand usage as compared to similar facilities and community college peers. Based on the results, establish annual water use reduction goals and plan appropriate measures to achieve goals. The goals described above will apply to both Santa Ana College and Santiago Canyon College, the education centers, and the District Office. The goals are listed in alphabetical order, and are not necessarily listed by priority. The goals and criteria established for the Sustainability Plan will be monitored during Plan implementation as described in Section 5, “Measure and Report Performance.” |

SECTION 4.0 PROGRAMS AND PROJECTS FOR IMPLEMENTATION

| SECTION: 4.1 MANAGEMENT AND ORGANIZATION STRUCTURE | STATUS | GOALS |
|---|---|-----------------|
| 4.1.1 Adopt a District Sustainability Policy | Completed | 3 |
| 4.1.3 Appoint a District Sustainability Committee | Completed | 3 |
| 4.1.4 Funding and Resources to Support Sustainability Activities | Completed | 3 |
| 4.1.5 Employ Sustainability Professionals as required | Completed | 3 |
| 4.1.7 Integrate Sustainability Planning into Campus Master Plan | Completed | 3 |
| All items above have been completed and activities are ongoing in nature. There are no new activities to report for the year. | Completed | 3 |
| SECTION: 4.2 ENERGY EFFICIENCY | STATUS | GOALS |
| 4.2.1 Set Energy Efficiency Goals | | |
| <u>District Office:</u> Prepared a data history of energy consumption report for districtwide using 2012 as the baseline to establish energy reduction goal for each sites. | Completed | 3 |
| 4.2.2 Conduct Comprehensive Facility Energy Audits | | |
| <u>District Office:</u> Prepared a data history of energy and gas consumption report for districtwide using 2012 as baseline for audits in conjunction with Southern California Edison (SCE) & California Community Colleges/Investor Owned Utilities (CCC/IOU) Partnership. | Completed | 3 |
| 4.2.5 Implement New and Existing Audit Recommendations | Ongoing | 3 |
| 4.2.8 Identify and Take Advantage of Grants and Incentive Programs | | |
| <u>District Office:</u> Leverage state funding (schedule maintenance and proposition 39 funding) to complete multiple energy efficiency projects for the following projects: <ul style="list-style-type: none"> ● Central Plant Load Shifting Program ● Proposition 39 Year 4: Santa Ana College, Digital Media Center and Orange County Sheriff's Regional Training Academy | Ongoing Completed In Progress | 3 3 3 |
| EMS System Proposition 39 Year 5: District-wide Exterior LED Lighting | In Progress | 3 |
| <u>Santa Ana College:</u> <ul style="list-style-type: none"> ● Proposition 39 projects: Year 1 SAC Interior and Exterior Lighting, Year 3 Digital Media Center and Orange County Sheriffs Training Academy ● Conversion from gas power carts for Maintenance and Operation to electric carts with incentives for conversion | Completed Completed | 3 3 |
| Future Energy Savings Project: Replace constant volume HVAC equipment with variable air volume equipment under assessment | In Planning | 3 |

| | | |
|---|---|---|
| <p>4.2.8 Identify and Take Advantage of Grants and Incentive Programs (Continued)</p> <p><u>Santiago Canyon College:</u> Proposition 39 Projects:</p> <ul style="list-style-type: none"> Year 1 Science Center Retro-commissioning Year 2 Interior and exterior LED Lighting at multiple buildings Year 3 Building D Chiller and Control Replacement <p>Edison Charge Ready Electric Vehicle Test Pilot Program</p> <p><u>Santiago Canyon College:</u></p> <ul style="list-style-type: none"> Retro-commissioned Science Center and implemented multiple Energy Efficiency Measures (EEMs) to reduce energy waste associated with 24/7 HVAC operations. Completed a chiller replacement and EMS upgrade at Building D Upgraded campus EMS to new EMS with advanced HVAC energy efficient programming, advanced lighting, control, and automatic demand response programming Replaced inefficient split system units at Child Development Center with new efficient units utilizing economizer control <p>Future Energy Efficient Project: Under assessment to replace constant volume HVAC equipment with variable air volume equipment. The project also includes occupancy-based equipment operation using occupancy sensors to reduce energy consumption during occupied hours of operation.</p> | <p>Completed 3</p> <p>Completed 3</p> <p>Completed 3</p> <p>Ongoing 3</p> <p>Completed 3</p> <p>Completed 3</p> <p>Completed 3</p> <p>Completed 3</p> <p>In Planning 3</p> | <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> |
| <p>4.2.9 Energy Efficient Equipment</p> <p>4.2.9.2 Efficient Lighting and Lighting Controls</p> <ul style="list-style-type: none"> District Office, Santa Ana College & Santiago Canyon College: replaced fluorescent lighting of the interior and exterior to more efficient LED lighting District Office: repaired all occupancy sensors to ensure lighting systems turn off when unoccupied Digital Media Center & Orange County Sheriff's Regional Training Academy: replacement interior and exterior fluorescent lights to LED lighting <p>Santa Ana College, Santiago Canyon College, Orange County Sheriff's Regional Training Academy, Digital Media Center, and District Operations Center now have interior corridor and exterior lighting controlled by an EMS under a predefined schedule using automatic daylight savings programming. The Humanities Building at Santiago Canyon College has step dimming and automatic continuous dimming (daylight harvesting) at all classrooms and office spaces.</p> <p>The District will assess and upgrade lighting occupancy sensor district-wide as part of a future project.</p> <p>Install variable frequency drives to adjust pool pump speeds and reduce energy consumption at the Athletics building at Santiago Canyon College.</p> | <p>Completed 3</p> <p>Completed 3</p> <p>Completed 3</p> <p>Completed 3</p> <p>Completed 3</p> <p>Completed 3</p> <p>Completed 3</p> | <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> |

| | | |
|---|---|--|
| <p>4.2.9.3 <i>Install Energy Efficient HVAC Systems</i></p> <p><u>District Office:</u> Replace chiller plant with more efficient equipment utilizing latest technology to reduce chiller operations energy consumption. Installed new VFD control for cooling tower operations and upgrade the EMS system with new advanced energy efficient sequences including supply air reset, chiller water reset, optimal start, night set back, and better scheduling schemes.</p> <p>Replaced existing boiler with new high efficiency boiler providing more efficient means of heating the building.</p> <p><u>Santa Ana College:</u> The construction of a new Central Plant building and replacement of all underground utilities (domestic water, sewer, fire water, storm drain, gas, electric and data) includes a reduction of electrical loads during peak demand periods, chilled water loop system, connection to 7 existing buildings to the HVAC equipment to provide cooling, a new Energy Management System (EMS) to control building temperatures and monitor system remotely.</p> <p>Replace existing constant volume single package HVAC units with variable air volume units and install occupancy sensors to reduce energy consumption during occupied hours of operation.</p> <p>Heating Fan Coil Valves in Dunlap Hall, Bldg D</p> <p><u>Santiago Canyon College:</u></p> <ul style="list-style-type: none"> ● Retro-commissioned Science Center and implemented multiple Energy Efficiency Measures (EEMs) to reduce energy waste associated with 24/7 HVAC operations. ● Completed a chiller replacement and EMS upgrade at Building D ● Upgraded campus EMS to new EMS with advanced HVAC energy efficient programming, advanced lighting, control, and automatic demand response programming ● Replaced inefficient split system units at Child Development Center with new efficient units utilizing economizer control <p>Future Energy Efficient Project: Under assessment to replace constant volume HVAC equipment with variable air volume equipment. The project also includes occupancy-based equipment operation using occupancy sensors to reduce energy consumption during occupied hours of operation.</p> | <p>In Progress</p> <p>In Planning</p> <p>In Progress</p> <p>Completed</p> <p>In Progress</p> <p>Completed</p> <p>In Progress</p> <p>Completed</p> <p>Completed</p> <p>In Planning</p> | <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> |
| <p>SECTION: 4.3 FACILITIES OPERATION</p> | <p>STATUS</p> | <p>GOALS</p> |

| 4.3.1 Encourage and Support Energy Efficiency Training of Staff | | |
|---|--|--------------------------|
| <p><u>Santa Ana College:</u></p> <ul style="list-style-type: none"> ● Regular EMS training for HVAC/Plumbing staff with Western Powers ● New EMS system is being sourced for the upcoming Central Plant, which will require robust training for college team to run the Central Plant and EMS in concert <p>Complete EMS training and analytics software training as part of the campus-wide EMS upgrades. Complete</p> | Ongoing In Progress | 3,4 |
| <p>Review commissioning agent’s EMS operation and system user manual with the college after EMS system turnover. Review air balance report and educate staff on air balance inefficiency corrections. Ongoing.</p> | Completed | 3,4 |
| <p>Review commissioning agent’s Central Plant operation and system user manual with the college after system turnover. Review air balance reports and educate staff on air balance inefficiency corrections. Ongoing.</p> | Completed | 3,4 |
| <p><u>Santiago Canyon College:</u></p> <ul style="list-style-type: none"> ● Standardized EMS Systems to ensure consistency with user friendly HVAC management. ● Provided new laptops to M&O staff to better utilize EMS system ● Provided in depth EMS training to the M&O staff as part of EMS installation ● Review systems manual and air/water balance reports for all commissioned projects with the maintenance staff to help them better understand system operations and system status | Completed Completed Completed Completed | 3,4 3,4 3,4 3,4 |

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|--|--|---|
| <p>4.3.2 Install Energy Management System (EMS)</p> <p><u>District Office:</u> Integrated the existing EMS into the EMS server.</p> <p><u>Santa Ana College:</u> Proposition 39 Year 4 project planning to implement a campus wide EMS system that will cover an additional 15 buildings, as well as the Digital Media Center and Orange County Sheriff's Regional Training Academy.</p> <p><u>Santiago Canyon College:</u> EMS Systems have been implemented and completed in January 2016.</p> | <p>Completed</p> <p>In Progress</p> <p>Completed</p> | <p>3,4</p> <p>3,4</p> <p>3,4</p> |
| <p>4.3.3 Adjust Temperature Set Points and Schedule Operating Times</p> <p><u>District Office:</u> HVAC renovation was completed October 2014 and temperature set points to 72 degrees on the cooling and 70 degrees on the heating. The HVAC was set to optimize building occupancy to take advantage of optimal usage and energy efficiency.</p> <p><u>Santa Ana College:</u> The college has adjusted temperature set points last year, Fiscal Year 2014-2015, to 74 degrees on the cooling end and 68 degrees on the heating side. These set points have become standard operation procedures for the Fiscal Year 2015-2016. It has resulted in a reduction in electrical load during peak period, thus reducing electricity use.</p> <p>Per District Standard Design Guidelines, all building facilities shall have temperature set points accordingly to ASHRAE and District Standard Guidelines of 74 degrees for cooling and 68 degrees for heating.</p> <p><u>Santiago Canyon College:</u></p> <ul style="list-style-type: none"> Standardized HVAC set point ranges between 70 – 74 to maintain consistent temperatures and removed ability for users to adjust temperature to provide better control of HVAC equipment Exterior lighting controls have been improved so the lights turn off and on based on local weather station sunrise and sunset data Implemented the sequences into EMS Systems to allow the campus to automatically make set point adjustments at all the buildings when there is an all call for energy reduction <p>Optimized HVAC building occupancy hour across all the buildings to take advantage of optimal start sequences</p> | <p>Completed</p> <p>Completed</p> <p>In Progress/ Monitoring</p> <p>Completed/ Ongoing Monitoring for all</p> <p>Ongoing</p> | <p>3,4</p> <p>3,4</p> <p>3,4</p> <p>3,4</p> <p>3,4</p> <p>3,4</p> |

| | | |
|---|-------------------------------------|-----|
| <p>4.3.4 Optimize Building Occupancy Scheduling</p> <p><u>District Office:</u> Optimized HVAC building occupancy hour across all the buildings to take advantage of optimal start sequences programmed into the new EMS server</p> <p><u>Santiago Canyon College:</u> Optimized HVAC building occupancy hour across all the buildings to take advantage of optimal start sequences programmed into the new EMS server.</p> | Completed/ Ongoing Monitoring | 3,4 |
| <p>4.3.5 Optimize Equipment Scheduling</p> <p><u>District Office:</u> The chiller and boiler plant have been optimized via new sequence programming to start and stop whenever there is a certain number of cooling and heating calls, thereby, eliminating the need for the equipment to run continuously.</p> <p><u>Santa Ana College:</u> Coordinate scheduling of internal and external events with HVAC team and college facilities coordinator to limit operation of HVAC systems when buildings are not being fully utilized.</p> <p><u>Santiago Canyon College:</u></p> <ul style="list-style-type: none"> • All new energy efficient projects have undergone commissioning and staff has been trained on EMS operations to maintain operations as originally commissioned <p>As part of the EMS sequences, all HVAC has been optimized via new sequence programming to start and stop whenever there is a certain number of cooling and heating calls, thereby, eliminating the need for the equipment to run continuously</p> | Completed/ Ongoing Monitoring | 3,4 |
| | Completed/ Ongoing Monitoring | 3,4 |
| | Completed/ Ongoing | 3,4 |
| | Monitoring for both | 3,4 |

| | | |
|---|----------------------|--------------|
| 4.3.6 Activate Energy-Saving Features for Appliances and Computers | Ongoing | 3,4 |
| 4.3.7 Pursue Monitoring-Based Commissioning (MBCX) Retro-Commissioning (RCX) | Ongoing | 3,4 |
| The District is assessing the installation of energy meters district wide with analytics software at all buildings to monitor system performance and make system corrections. | In Planning | 3,4 |
| SECTION: 4.4 SUSTAINABLE BUILDING PRACTICES | STATUS | GOALS |
| 4.4.1 Establish Green Building Standards | | |
| <u>District Office-wide:</u> District follows 2016 California Green Building Code and has developed a facilities working group that includes college and District facility representatives to review and update District design guidelines/standards. | Completed Ongoing | 3,4,8 |
| <u>Santa Ana College:</u> The Central Plant project is designed to meet Leadership in Energy and Environmental Design (LEED) Silver equivalence by United States Green Building Council. The energy efficient elements include water efficient landscaping, plumbing fixtures, high efficient HVAC units, and daylighting. | In Progress | 3,4,8 |
| The Science Center building is designed to meet Leadership in Energy and Environmental Design (LEED) Silver equivalence by United States Green Building Council. Some of the efficient elements include water-efficient landscaping and plumbing fixtures, highly efficient HVAC units, daylight harvesting, controlled electrical outlets, and separate building metering. | In Progress | 3,4,8 |
| The Johnson Student Center building is designed to meet Leadership in Energy and Environmental Design (LEED) Silver equivalence by United States Green Building Council. Some of the efficient elements include water-efficient landscaping and plumbing fixtures, highly efficient HVAC units, daylight harvesting, controlled electrical outlets, and separate building metering. | In Planning | 3,4,8 |
| The Health Sciences building is designed to meet Leadership in Energy and Environmental Design (LEED) Silver equivalence by United States Green Building Council. Some of the efficient elements include water-efficient landscaping and plumbing fixtures, highly efficient HVAC units, daylight harvesting, controlled electrical outlets, and separate building metering. | In Planning | 3,4,8 |
| <u>Santiago Canyon College:</u> Humanities Building received LEED Gold certification for energy efficient building. | Completed | 3,4,8 |

| | | |
|---|--|--|
| <p>4.4.2 Implement Sustainable Design Practices</p> <p><u>District Office-wide:</u> District standards have been developed with sustainability in mind. For example, all new light fixtures are required to be LED type to reduce energy waste. All projects are required to be enrolled in SCE’s ‘Savings by Design’ program to maximize energy savings, all irrigation systems must have “smart controller” to reduce water waste, and all new buildings must have daylighting systems to dim indoor lighting based on outdoor natural lighting. Repairs and maintenance projects by the colleges also incorporate and implement these standards. The standards files are updated on a regular basis and available to access by the colleges and the district via a shared directory file and available to design consultants if needed.</p> <p><u>Santa Ana College:</u> The college is working with District Facilities team to implement design standards in repair/replacement projects, as well as in new construction.</p> <p><u>Santiago Canyon College:</u> The college is working with District Facilities team to implement design standards in repair/replacement projects, as well as in new construction.</p> | <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> | <p>1,3,4,6,8</p> <p>1,3,4,6,8</p> <p>1,3,4,6,8</p> |
| <p>4.4.3 Use an Integrated Systems Approach in Building Design</p> <p>The District is currently exploring the utilization of this approach for future projects in design, although many of the practices are already intertwined with the sustainability efforts previously discussed and required by code. This effort requires a significant effort of data management and review. Tools such as metering are one of the areas the district is currently trying to implement but will not necessarily have for all buildings.</p> <p>Additionally, the District deployed a new Space Inventory and Use Assessment software called Dabblefox which allows the colleges and district to see how efficient/inefficient the use of space is across the entire inventory. This information coupled with highest utility use will be beneficial in the future to a more integrated approach to use of facilities and design. This is an ongoing work in progress.</p> | <p>Ongoing</p> <p>In Planning</p> <p>Ongoing</p> | <p>1,3,4,6,8</p> <p>1,3,4,6,8</p> <p>1,3,4,6,8</p> |
| <p>4.4.5 Commission New Buildings & Maintain Appropriate Operations to Support Functionally</p> <p>The following systems, at a minimum, shall be commissioned for all new buildings: HVAC; lighting controls (including daylight harvesting); plumbing; energy management system; life safety systems (fire alarm, egress pressurization, fire protection); security system; uninterruptible power supply system; and smart irrigation systems.</p> <p>Onuma System Work Order System A new building work order system has been deployed districtwide is available for all sites to utilize and track work orders. Additionally, this system can eventually assist the colleges with inputting data for managing and tracking preventative maintenance and repairs.</p> <ul style="list-style-type: none"> ● Santa Ana College Maintenance & Operations ● Santiago Canyon College Maintenance & Operation | <p>Ongoing</p> <p>Ongoing</p> | <p>3,4</p> <p>3,4</p> |

| SECTION: 4.5 ON-SITE GENERATION AND RENEWABLE ENERGY | STATUS | GOALS |
|--|---|---|
| <p>4.5.1 Evaluate Clean Cogeneration and Renewable Energy Generation</p> <p><u>Districtwide:</u> Assessing renewable energy generation opportunities.</p> <p><u>Santiago Canyon College:</u> New Photo Voltaic Arrays were installed at the Humanities Building to generate 10%-20% of its energy use.</p> <p><u>Santa Ana College:</u> New buildings (Science Center, Johnson Center, and Health Sciences) will all be constructed to accommodate future addition of photo voltaic panels to the roof without required modifications to the building to accommodate the panels.</p> | <p>Ongoing</p> <p>Completed</p> <p>In Progress</p> | <p>3</p> <p>3</p> <p>3</p> |
| <p>4.5.2 Evaluate Load Shifting Technologies</p> <p><u>Santa Ana College:</u></p> <ul style="list-style-type: none"> • Currently under construction is the Central Plant project, which is based on permanent load shifting through thermal ice storage facilities for cooling • Implemented staggered starts for the electrical utilities, such as HVAC and other electrical draws. This allows for lower peaks during high demand electrical events | <p>In Progress</p> <p>In Progress</p> | <p>3</p> <p>3</p> |
| SECTION: 4.6 TRANSPORTATION, COMMUTING, AND CAMPUS FLEET & TRAVEL | STATUS | GOALS |
| <p>4.6.1 Understand Commute and Travel Patterns</p> <p><u>Santa Ana College:</u></p> <ul style="list-style-type: none"> • Partnered with the AQMD to produce a commute and travel survey as part of the college's annual AQMD Rule 22 compliance survey • Traffic management plans developed for Spring 2014 and Fall 2014 for Santa Ana College for the new construction (Dunlap Hall and Central Plant) • Parking surveys undertaken Fall 2014 and Spring 2015 to establish parking demand • Parking study undertaken in Spring 2016 to evaluate parking demand. • Parking study undertaken in Fall 2017 to reestablish parking demand as well as an updated traffic management plan to accommodate construction of both the Science Center and Johnson Center | <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> | <p>1,7</p> <p>1,7</p> <p>1,7</p> <p>1,7</p> <p>1,7</p> <p>1,7</p> |
| <p>4.6.2 Encourage and Enhance Public Transportation and Ridesharing Options</p> <p><u>Santa Ana College:</u> Partnered with AQMD to meet with employees and students at the Fiscal Year 2015-2016 Sustain-a-Palooza event, as well as the classified appreciation event in May.</p> <p>Partnered with Orange County Transportation Authority (OCTA) on a three-year pilot program that offers Santa Ana College Students (all credit and eligible noncredit) who attends classes, 12 hours and more per week, unlimited bus rides local fixed-routes (started on August 2017). This includes the students through Schools of Continuing Education at Santa Ana College and Santiago Canyon College. Bus ridership as a result of this program has grown substantially and over 3,000 students have enrolled in the program</p> <p><u>Santiago Canyon College:</u> Each year at Santiago Canyon College, a bicycle has been an item that is offered through an opportunity drawing at the college's annual Sustainability Expo. A bicycle, sometimes more than one, has been offered since the first year of the expo.</p> | <p>Completed</p> <p>Ongoing</p> <p>In Progress</p> | <p>1,7</p> <p>1,7</p> <p>1,7</p> |

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| 4.6.3 Encourage and Enhance Bicycling Options | | |
| All new building shall comply with CalGreen’s bicycle parking requirement | Ongoing | 1,7 |
| 4.6.4. Improve Campus Fleet & Travel | | |
| <u>Santa Ana College:</u> College has purchase two electric carts after trading them in for our old gas powered carts. | Completed | 1,7 |
| 4.6.5 Enhance Student Distance Learning | Ongoing | 1,7 |
| 4.6.6 Encourage Electric Vehicles for Commuters | | |
| <u>Santa Ana College:</u> | | |
| <ul style="list-style-type: none"> ● Implemented electric car charging stations in Parking Lot #11 to encourage the use of electric vehicles and included premium parking for the users of the stations ● Ongoing assessment for future electric vehicle charging facilities ● All new construction shall comply with California Green Building Code’s Clean Air/Vanpool/EV requirements. | Completed | 1,7 |
| <u>Santiago Canyon College:</u> | | |
| Ongoing assessment for future electric vehicle charging facilities | Ongoing | 1,7 |
| <i>See Section 4.2.8</i> | | |
| SECTION: 4.7 WATER, WASTEWATER, AND SUSTAINABLE LANDSCAPING | STATUS | GOALS |
| 4.7.1 Establish Water Conservation Goals | Completed | 8 |
| 4.7.2 Implement Water Conservation Strategies | | |
| <u>District Office:</u> Repaired irrigation system and removed the landscaping material to reduce water usage. | Completed | 8 |
| <u>Santa Ana College:</u> | | |
| <ul style="list-style-type: none"> ● Water conservation rebates with new low flow plumbing fixture installed ● Smart irrigation controllers installed ● College utilized low flow drip irrigation systems ● Xeriscaping has been employed in multiple areas around campus ● Aerators have been checked and installed throughout campus faucets ● Signage has been installed throughout campus restrooms to encourage water efficiency/savings ● College has drastically reduced irrigation time and frequency ● Pressure washing has been significantly limited ● Plumbing/irrigation repairs are made quickly, and parts stocked, in order to reduce down time and leaking | Completed For All | 8 |
| <i>Additional Landscaping and Hardscape projects</i> | <i>In Progress</i> | <i>8</i> |

Santiago Canyon College:

In 2016-2017, a large water conservation project will be implemented in the summer 2016-2017 (part of the District's Scheduled Maintenance projects 2015-2016) to upgrade all the irrigation controllers. New weather stations will be installed and new controllers will communicate via WIFI online website to program. Users will be able to program controls and measure water usage. Smart controllers will turn the main valves on and off based on ambient weather conditions, forecast, and precipitation. The new irrigation system will alert users to faulty valves, leaks, and excessive water use.

In Progress

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| <p>4.7.3 Reduce Storm Water, Sewer Discharges, and Water Pollution</p> <p><u>Santa Ana College/Orange County Sheriff's Regional Training Academy:</u></p> <p>A storm water improvement project is being developed for the undeveloped property at the Orange County Sheriff's Regional Training Academy to address the runoff drainage and erosion from property to implement best management practices to be implemented in 2016-2017.</p> <p><u>Santa Ana College</u></p> <p>New Science Center and Health Science buildings will utilize a shared retention basin to manage storm water runoff.</p> <p>New Johnson Center will be tied into the existing campus retention basin to manage storm water runoff.</p> <p><u>Santiago Canyon College:</u></p> <p>A storm water improvement project is planned for Fall 2016. The improvements will divert excess rainwater from the soccer fields and the undeveloped lot, adjacent to the Coastkeeper's Garden, to the appropriate catch basins while filtering sediment and debris. This project is an effort to implement storm water best management practices</p> | <p>In Progress</p> <p>In Progress</p> <p>In Progress</p> <p>Completed</p> | <p>8</p> <p>8</p> <p>8</p> <p>8</p> |
| <p>4.7.4 Adopt Sustainable Landscaping Practices</p> <p><u>District Office, Santa Ana College and Santiago Canyon College:</u></p> <p>All new Facility Design standards require low water use plants and, irrigation systems with controllers to reduce and monitor water use. All new construction will comply with California Green Building Code</p> <p>Implemented the 4-R's Action Plan: 1) Recognize 2) Reduce 3) Repair 4) Replace</p> | <p>Ongoing</p> | <p>8</p> |
| <p>SECTION: 4.8 SOLID WASTE REDUCTION AND MANAGEMENT</p> | <p>STATUS</p> | <p>GOALS</p> |
| <p>4.8.1 Create Waste Reduction Goals</p> <p><u>District Office:</u></p> <p>Procurement of new waste hauler is in progress. A request for proposal for Integrated Waste Management Services was advertised and a screening committee assembled to review the responses. The District's recommendation of the contract with a new Waste Management Service provider is currently under review and pending the Board of Trustees approval anticipated in May 2016.</p> <p><u>Santa Ana College:</u></p> <p>Coordination with waste hauler vendors to identify solid waste reduction goals and strategies to improve processes and efforts.</p> | <p>Ongoing</p> | <p>5</p> |

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| <p>4.8.2 Maximize Programs Offered by Contracted Waste Hauler</p> <p><u>District Office:</u> Applied for Beverage Container Recycling Grant Programs (RBC 28 & RBC 29) to promote recycling and to reduce waste to the landfill by installing beverage containers at the District Office, Santa Ana College, Centennial Education Center, Digital Media Center, Santiago Canyon College, Orange Education Center and Orange County Sheriff's Regional Training Academy.</p> <p><u>Santa Ana College:</u> Recycling, Construction & Demolition Recycling, Green waste, Food waste</p> | <p>In Progress</p> <p>Planned</p> | <p>5</p> <p>5</p> |
| <p>4.8.3 Reduce the Waste Stream to the Landfill</p> | <p>Ongoing</p> | <p>1,5,6</p> |
| <p>4.8.4 Improve Existing Recycling Programs</p> | <p>Ongoing</p> | <p>1,5</p> |
| <p>4.8.6 Green Waste and Food Waste Composting</p> | <p>Ongoing</p> | <p>5</p> |
| <p>4.8.7 Adopt Construction and Demolition (C&D) Recycling</p> <p><u>District:</u> Implemented the Construction and Demolition recycling within the District's construction contract documents.</p> | <p>Completed</p> | <p>5</p> |
| <p>4.8.8 Consider Feasibility of On-Campus Recycling</p> | <p>Planned</p> | <p>5</p> |
| <p>SECTION: 4.9 GREEN PURCHASING</p> | <p>STATUS</p> | <p>GOALS</p> |
| <p>4.9.1 Sustainable Food Purchasing</p> | <p>Planned</p> | <p>1,6</p> |
| <p>4.9.2 Green Purchasing</p> <p><u>District Office:</u> District Purchasing Department has received an award from Office Depot for the most purchased recycled paper for the Fiscal Year 2015.</p> <p><u>Santa Ana College:</u></p> <ul style="list-style-type: none"> • Purchased less toxic cleaning solutions • LED lighting reduces hazardous waste and the need to replace lamps • Ensure paper products are specified that contain more recycled product <p>Analyze copy making and equipment to ensure more efficient process and more recycled content in paper product</p> | <p>Completed</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> | <p>6</p> <p>6</p> <p>6</p> <p>6</p> |
| <p>SECTION: 4.10 STUDENT AND CURRICULUM DEVELOPMENT</p> | <p>STATUS</p> | <p>GOALS</p> |
| <p>4.10.1 Create a Sub-Committee in the Associated Student Government</p> <p><u>Santa Ana College</u> Santa Ana College has Sustainability Commissioner through ASG and a student group dedicated to environmental issues.</p> <p><u>Santiago Canyon College:</u> Since 2015-16, SCC's Associated Student Government established a "Green Operations Committee." The committee continues to be active.</p> | <p>In Progress</p> <p>In Progress</p> <p>In Progress/ Ongoing</p> | <p>1</p> <p>1</p> <p>1</p> |
| <p>4.10.2 Provide Professional Development and Create a Faculty Forum</p> | <p>In Progress</p> | <p>1</p> |

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| <p>4.10.3 Utilize Different Pathways to Integrate Sustainability in the Curriculum</p> <p><u>Santa Ana College:</u></p> <ul style="list-style-type: none"> • Engineering classes include sustainability coursework, and energy efficiency as a tenant to building design • Biology has incorporated waste reduction and renewable energy sources into course curriculum • Automotive programs have focused instruction on alternative fuel vehicles, retrofitting and maintenance of these vehicles • SAC fine arts has developed a sustainable theme for some of its mural programs <p><u>Santiago Canyon College:</u> The Water Utility Science program is developing a Certificate of Proficiency in Water Conservation</p> | <p>In Progress</p> <p>In Progress</p> <p>In Progress</p> <p>In Progress</p> <p>Completed</p> | <p>1,2</p> <p>1,2</p> <p>1,2</p> <p>1,2</p> <p>1,2</p> |
| <p>4.10.4 Advocate for Change at the Statewide Level</p> | <p>Planned</p> | <p>1</p> |
| <p>4.10.5 Training Opportunities for Students</p> <p><u>Santa Ana College:</u></p> <ul style="list-style-type: none"> • Engineering, Biology, Geology field trips, sustainable design element in engineering, automotive program • Sustain-a-Poolza has been a very successful event on campus <p><u>Santiago Canyon College:</u></p> <ul style="list-style-type: none"> • The Library has developed a Water Conservation display for Fall 2015 to showcase water conservation facts and guidelines • Earth Awareness Day was held on April 21, 2016, which featured fuel efficient cars, drought resistant landscape ideas, a tree planting near the Library, specialized equipment, water efficiency, and an environmental science career panel • Free Electronic Recycling event took place on April 23, 2016 • Every semester, a tour of the Conservation Garden is provided to international students who enrolled in the English Language program to promote awareness on water conservation and to build vocabulary | <p>Ongoing</p> <p>Ongoing</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> | <p>1,2</p> <p>1,2</p> <p>1,2</p> <p>1,2</p> <p>1,2</p> <p>1,2</p> |
| <p>4.10.6 Joint Meeting with Faculty & Staff (Academic Senate) and Students (Associated Student Government)</p> | | |
| <p>SECTION: 4.11 CAMPUS AND COMMUNITY OUTREACH & AWARENESS</p> | <p>STATUS</p> | <p>GOALS</p> |
| <p>4.11.1 Create a Website Dedicated to Campus Sustainability</p> <p>District created a website and information is posted.</p> | <p>Completed</p> | <p>1</p> |

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| <p>4.11.3 Sustainability Events-Earth Day Awareness</p> <p><u>Santa Ana College:</u> 4th Annual Sustain-A-Palooza Earth Day event held on April 20, 2016 with OC Food Access, US Green Building Council, Farmers Market, Selman Chevrolet SAC Security – Forms Waived, Banning Ranch Conservatory, City of Santa Ana (Storm Drain), OC Transportation Authority, Heritage Museum, 3 Workshops on Environmental Forensics, Sustainable Construction Projects, and Banning Ranch.</p> <p>SAC hosts an annual event Sustain-A-Palooza, which is a program, dedicated to environmental awareness and action. The event has taken place for five consecutive years.</p> <p><u>Santiago Canyon College:</u></p> <ul style="list-style-type: none"> • Workshop on Air Quality conducted at SCC (4/23/13) • Workshop on Water Quality and Water Sustainability Practices (4/23/13) • 4 Vehicles ranging from low emissions to zero emissions were demonstrated and available for test drives (4/23/13) • The use of spoiled fruit for composting a garden through a fun “fruit smashing” events (4/24/14, 4/21/15, and 4/21/16) • Hyundai showcased one of their vehicles equipped with the latest Hybrid technology (4/24/14) • SCC Water Utility Science Professor Stephen McLean disseminated information about the State’s water supply and water conveyance (4/21/15) • Shared Information about conserving water by converting traditional landscapes to ones that require less water or converting to newly designed water conserving irrigation systems (4/21/15) • Panel Session about Environmental Careers (4/21/16) • Conducted 4 Sustainability Expositions to date (4/23/13, 4/24/14, 4/21/15, and 4/21/16) | <p>On-going/ Annually</p> <p>On-going</p> <p>On-going/ Annually for all</p> | <p>1</p> <p>1</p> <p>± ± ± ± ± ± ± ±</p> |
| <p>4.11.4 Campus Specific Outreach & Awareness</p> <p><u>Santiago Canyon College:</u></p> <ul style="list-style-type: none"> • Conducted 4 Sustainability Expositions to date (4/23/13, 4/24/14, 4/21/15, and 4/21/16). The events have been open to the Community. • E Waste Event held in January 2016 | <p>Completed</p> <p>Completed</p> | <p>±</p> <p>±</p> |
| <p>4.11.5 Community Specific Outreach & Awareness</p> <p><u>Santiago Canyon College:</u> Conducted 4 Sustainability Expositions to date (4/23/13, 4/24/14, 4/21/15, and 4/21/16). The events have been open to the Community.</p> | <p>Completed</p> | <p>±</p> |

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