

# California State University, Chico



## Green Campus End of Year Report | 2019-2020

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### Key 2019-2020 Achievements

- Recruited 19 interns to work with the Green Campus team
- Installed 2 hydration stations in the University Stadium with 200 single-use bottles avoided in the first week of operation
- 517 Facebook followers
- 160 new Instagram followers, 369 total followers
- SCOOP audits showed potential reduction of 1,853 lbs. of CO2 emissions and \$575 in annual electricity savings
- Diverted (8) 20-gallon totes of second hand office supplies from landfill, and donated to AS Sustainability's Free Store in the BMU
- Stairwell lighting audit showed potential reduction of 9,337 lbs of CO2 emissions, \$5,609.57 in annual electricity savings, and 33,291 kWh saved annually
- Library lighting audit showed potential reduction of 6,415 lbs of CO2 emissions, \$3,854 in annual electricity savings, and 22,871 kWh saved annually
- Natural Gas HW Heater Electrification Audit showed potential reduction of 569,718 lbs. of CO2 emissions, \$4,443.88 in annual electricity savings, and 53,810 therms reduced annually

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## 2019-2020 Team

- Alyssa Myers – EcoRep Coordinator
  - Ashley Manning – Energize Colleges Fellow
  - Cheri Chastain – Campus Sustainability Manager
  - MacKenzie Deeter – Sustainable Consultants Of Office Practices (SCOOP) Coordinator
  - Megan Berg – Green Machine Coordinator
  - Jesse Zendejas – Marketing & Outreach Coordinator
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## 2019-2020 Interns

- Dadrien Keene (Economics, '20)
  - Elias Nava (Mechatronic Engineering, '20)
  - Homero Acosta (Economics, '20)
  - Lisa Tang (Psychology, '20)
  - Michael Cordova (Business Administration, '20)
  - Olivia Alexander (Environmental Science, '20)
  - Emely Arevalo (Animal Science, '22)
  - Moa Back (Interior Architecture, '20)
  - Kyle Alsberry (Media Arts, Design, and Technology, 20)
  - Sean Arend (Sustainable Manufacturing, '21)
  - Carter Dishman (Recreation, Hospitality, & Parks Management '22)
  - Joshua Dickson (Business Administration, '21)
  - Tara Tuohy (Psychology, '20)
  - Tess O'Brien (Public Relations, '21)
  - Gaonou Her (Business Administration, '21)
  - Haley Roofener (Environmental Science, '24)
  - Briton Davis (Economics, '20)
  - Gloria Acosta (Sociology, 21)
  - Kyle Ireland-Tran (Psychology, '20)
  - Michael Tiffany (Mechatronic Engineering, '20)
  - Zaida Hernandez (Environmental Science ('21)
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# Green Campus Overview

## Green Campus



Chico State's Green Campus works under the advisement of the Campus Sustainability Manager and in collaboration with all campus partners to further the campus's sustainability goals and commitment of carbon neutrality by 2030. Green Campus student leaders and interns are catalysts in building a community and culture of sustainability through peer education and awareness, program and project development and implementation, and research. Green Campus students gain real world experience as sustainability change agents and are given the opportunity to put creative solutions to work.

## Green Machine



In May 2011, Chico State adopted its [Climate Action Plan](#) (CAP) to achieve climate neutrality by the year 2030. The Green Machine Program (formally the Alternative Transportation Group) was established as a collaborative effort to support the CAP by promoting and encouraging alternative transportation use and access. The mission of Green Machine is to focus on education and outreach to the campus community about alternative forms of transportation through: tabling, forums, research and reporting, and outreach via educational materials.

## EcoRep



EcoRep is focused on the residential areas of campus supporting sustainability focused programs, activities, and events for their communities. This is done through the cooperation of the EcoRep Coordinators, working closely with resident hall professional staff, RHAs and the Community Councils.

## Energize Colleges Fellowship



The 2019/20 Energize Colleges Fellow at Chico State is responsible for providing support for the creation of a Strategic Energy Master Plan. This plan will outline steps that the university can take to reach net zero carbon emissions by 2030. Part of this support has been through conducting lighting LED audits and natural gas electrification audits.

## Marketing and Outreach



The Marketing and Outreach team is tasked with communicating Green Campus efforts through various media channels as well as branding and curating themes to promote projects and workshops available to the campus community. Other responsibilities include content creation such as print flyers and posters and digital social media flyers.

## Sustainable Consultants Of Office Practices (SCOOP)



SCOOP serves as a sustainability certification and education program. SCOOP members work with campus resources and university standards to educate, support, and certify Chico State's offices in the five categories of energy, waste/recycling, procurement, transportation, and employee health and wellness.

# 2019/20 Green Campus Project List

### Campus Bike Path Education

- **Purpose:** Educate students, faculty, and staff about the rules and riding etiquette of the newly opened campus bike path.
- **Objective:** Post signs with bike information in high traffic areas, conduct surveys, and provide additional exposure through tabling and giveaways.
- **Impact:** 400 survey responses gathered, 500 bike bells with information cards given away, and 12 signs were posted along the bike path.

### Campus Sustainability Day Tabling

- **Purpose:** Educate students, faculty and staff about Green Campus sustainability efforts.
- **Objective:** Interact with campus community, provide informative activities, highlight ways to get involved in the work of Green Campus.
- **Impact:** Around 20 students participated in tie dye activity, gained 3 faculty members interested in SCOOP audits, many students stopped at the table for conversation about Green Campus.
- **Recommendations:** Spend more time planning involvement activities and have a clearer plan of execution.

## Energy Source Education Videos

- **Purpose:** With the COVID-19 response of working and studying from home, and consequently canceling all in-person events for Earth Month, the Green Campus team created two short educational video essays to promote on social media during Earth Month.
- **Objective:** Adapt the Sustainability Blitz lecture created for a Sustainability Issues class into two video briefs focusing on different sources of energy, renewable and nonrenewable, highlighting the pros and cons of the different types of sources.
- **Impact:** 72 accounts were reached through Instagram, 6% of those users were not already following Green Campus. Videos are posted to [Chico Green Campus YouTube](#).
- **Recommendations:** Continue to promote and share these videos; create more educational videos to be posted on the Green Campus YouTube page.

## Extended Departure Checklist

- **Purpose:** When faculty and staff leave campus for extended periods of time, offices spaces are often left in business as usual mode with many sources of wasted energy and money.
- **Objective:** Create an [extended departure list](#) and distribute to campus.
- **Impact:** List was sent directly to over 50 campus contacts, posted in employee announcements several times prior to winter break, and posted to the [Green Campus Webpage](#).
- **Recommendations:** Continue to send the list out in employee announcements prior to extended departures.

## Physical Science Office Diversion Excursion

- **Purpose:** Help offices in the Physical Science building get ready for their move into the new building by diverting unwanted items from the landfill.
- **Objective:** Partner with AS Recycling and AS Sustainability to help offices get ready for their move, and divert unwanted items away from the landfill using:
  - Confidential shred bins
  - Additional paper recycling bins
  - Textbook recycling bins
  - Office Supply collection bins
  - E-Waste collection bins
- **Impact:** The following materials were collected and diverted from the landfill:
  - 3 full bins of confidential shred items
  - Approximately 16 additional paper recycling bins collected by AS recycling
  - Approximately 16 textbook recycling bins collected by AS recycling
  - 8 full bins of Office Supplies donated to AS Free store including binders, clips, pens, notebooks, file organizers, and more
  - E-waste and batteries collected by EHS



- **Recommendations:** Collect more precise data on what was diverted and how much recycling was collected. Continue to work with Design and Capital Projects groups on future moves and major renovations.

### SCOOP Home Office Audit Tool and Workshop

- **Purpose:** With the COVID-19 response of working and studying from home, adjust the SCOOP [auditing tool for home offices](#) and study spaces.
- **Objective:** Create tool, post to website, and host workshop on how to use the new tool.
- **Impact:** The tool was created and can be accessed on the [Green Campus webpage](#). Forty-seven participants registered for the April 20 online workshop on how to use the tool. The workshop was recorded and is available on the [Green Campus YouTube page](#)
- **Recommendations:** allow for more time to plan future workshops and continue to promote the tool and workshop recording while telework and study activities are still occurring.

### SCOOP Office Audits

**Purpose:** Conduct office audits for staff and faculty using the SCOOP audit tool and communicate recommendations with each audited office space.

- **Objective:** Complete an audit with tool and communicate findings in a follow up.
- **Impact:** Audits of the following offices were completed:
  - Facilities Management and Services Administration
  - Women's Track and Field
  - Sociology Department
  - AS Sustainability
  - Gateway Science Museum
  - Government Affairs
  - English Department
  - Economics Department
  - KCSC Radio
  - Athletics Compliance Office
  - WREC Offices
- **Results:**
  - Estimated annual savings from turning off unused electronics of \$575 and 1,853 lbs of CO2 emissions

- Education about Sustainability including alternative transportation, using the surplus office, composting, sustainability resources on campus, and more were communicated to all eleven offices participating in audits.
- **Recommendations:** Improved data collection and clearer scoring improvements were made for the athletic compliance office audit and WREC offices audit during the Spring 2020 semester. These improvements helped to streamline the auditing process and should continue to be used in future audits. Conduct follow up audits next semester to track improvements and receive feedback for how to better deliver recommendations.

### Social Media Presence and Exposure

- **Purpose:** Reach a larger audience through social media platforms.
- **Objective:** Maintain an online presence by regularly posting about sustainability news, tips, and events in the community.
- **Impact:** 151 new Instagram followers (360 total) and 517 Facebook followers; average reach of 153 accounts per Instagram post; 2 original video essays and SCOOP workshop posted to the [Green Campus YouTube page](#).

### Strategic Energy Master Plan (SEMP) Energy Audits

- **Purpose:** To help inform the SEMP, calculate the energy usage, cost, and emissions of the following: T8 fluorescent lighting in stairwells of various campus buildings, T8 fluorescent lighting on floors of the library with book stacks, and natural gas hot water heaters in various campus buildings, and calculate the savings of each of these measurements by switching to energy efficient options.
- **Objective:** Calculate the energy usage/cost/emissions of current T8 fluorescent lighting and natural gas hot water heaters various campus buildings and calculate the savings of each of these measurements by switching to energy efficient options.
- **Impact:** Ultimately found that if recommendations are implemented, the campus would annually save:
  - \$13,907.28 in energy costs
  - 585,470 lbs. CO2 emissions reduced
  - 56,162 kWh saved (through lighting upgrades)
  - 53,810 therms saved
- **Recommendations:** Per the SEMP, replace all existing T8 fluorescent lighting with LED lighting, and replace all existing natural gas water heaters with electric heat pump water heaters.

### Strategic Energy Master Plan | Electronic Device Behavioral Change Recommendations

- **Purpose:** SCOOP provided insights on faculty and staff behavior related energy use for the Strategic Energy Master Plan (SEMP).
- **Objective:** Paragraph explaining anecdotal and audit-based evidence of device use.



- **Impact:** This will be used to help determine potential energy savings based on faculty and staff behavior changes.
- **Recommendations:** Gather more concrete evidence using energy device monitors that track energy consumption over time for more accurate data.

### STARS System-Wide Credit Development

- **Purpose:** Assist the Chancellors Office in establishing common language for AASHE's STARS reporting system that can be used by all 23 campuses in the CSU system.
- **Objective:** Review assigned credits and develop standard language, backed up by CSU policies, to be submitted to AASHE for review.
- **Impact:** This project will allow CSUs to easily achieve more STARS credits using the standard language that was developed and greatly reduce the reporting burden of the 23 campuses that participate in the program.

### Stewards of Sustainability Passport

- **Purpose:** Provide a checklist of sustainable opportunities for students to engage in on and around campus.
- **Objective:** Complete a task list that encompasses not only campus sustainability but city of Chico sustainability activities and distribute to campus community.
- **Impact:** Introduced more students to campus sustainability and connecting them to the city. The passport is [accessible online](#) in the documents library on the Sustainability at Chico State website and was shared with GE Sustainability Pathway faculty.

### This Way to Sustainability Poster Symposium

- **Purpose:** Present SCOOP auditing process to attendees of the This Way To Sustainability (TWTS) Conference.
- **Objective:** Create presentation for TWTS Poster Symposium 2020 and present to participants.
- **Impact:** [Created presentation and presented](#) to the 66 participants in the poster symposium (starts a minute 8 of the recording). Received follow up emails with interest in the program as well as interest in collaborating on projects, and other questions/interest.

### University Stadium Drinking Fountain

**Purpose:** In partnership with FMS and AS Sustainability, install hydration stations at the University Stadium .

- **Objective:** Apply for Sustainability Fund Allocation Committee (SFAC) grant to cover costs of equipment. Install 1 high-low drinking fountain and hydration station at the east side restrooms under the stadium bleachers and 1 freestanding high-low drinking fountain and hydration station under the west side bleachers, prior to commencement.



- Impact:** SFAC awarded the project \$15,000 to cover the cost of materials and equipment. FMS agreed to cover the labor costs of the installation. East and west side hydration stations were installed by March 6, 2020 and done under budget.

Additionally, a potable water outlet was added near commencement staging area, making the use of water monsters and other bulk water delivery accessible for commencement ceremony and other events.

Over the course of the project, MacKenzie worked with all necessary parties to develop a system that allows for drinking fountains in the area to be left on during winter months when temperatures are not predicted to freeze.

In the first week of use, the east side hydration station filled the equivalent of over 200 single use water bottles.
- Recommendations:** Utilize the remaining funding for a third drinking fountain/hydration station on the PE electrical shed at the south end of the track. Continue to push for eliminating single use water bottles at commencement ceremony and instead utilizing water monsters and refillable water bottles.

## Website Maintenance and Page Development

**Purpose:** Continue to update the [Sustainability at Chico State](#) website with tools and resources. Provides students, faculty, staff, and anyone who is interested with information on campus sustainability.

- Objective:** Maintain a website that is up to date and touches on all relevant topics of sustainability at Chico State including the work of the Campus Sustainability Committee and Green Campus.
  - Impact:** 1,216 unique visitors to the website with a 41% (508 visitors) return rate.
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## Campus Sustainability Committee

Alyssa Myers served as the Campus Sustainability Manager student appointment to the Campus Sustainability Committee (CSC). The student appointment ensures student voices are heard when decisions are being made. All Green Campus team members, including interns, participated in some capacity with CSC efforts – some serving on subcommittees, others helping to promote the work of the CSC, and others participating in meetings and conversations about the CSC work.

## Alternative Transportation Subcommittee

Megan Berg served on this subcommittee

**Goal:** The overall goal of this subcommittee is to increase student, faculty, staff and guest use of and access to alternative transportation. Alternative transportation is considered to be anything

other than single-occupancy vehicles: carpooling, bikes, skateboards, public transit, mobility devices, or walking.

**Progress:** Megan and other subcommittee members worked on several events aimed to help the subcommittee meet their overall goal. Events included a bus open house and scavenger hunt, bike safety videos and workshops, guided bike rides through Chico to key destinations, and bike path etiquette education. All of these events have been put on hold until in-person gatherings are permitted on campus but the ground work has been organized so the subcommittee can quickly bring the events life.

The subcommittee has also been working on an application to become a certified Bike Friendly University and is intending to submit the application by Oct 2020.

### **Energy Subcommittee**

Ashley Manning served on this subcommittee

**Goal:** The primary goal of this subcommittee is to write, adopt, and publish a Strategic Energy Master Plan that outlines a path for achieving carbon neutrality by 2030. The SEMP will focus specifically on emissions from natural gas combustion and electricity use.

**Progress:** Ashley worked with the rest of the subcommittee to conducted necessary research and draft the plan. The first round of the plan is complete and the full plan should be adopted by the end of Summer 2020.

### **Natural Environment Subcommittee**

Alyssa Myers served on this subcommittee

**Goal:** This subcommittee is tasked with reducing Chico State's ecological footprint and strives towards carbon neutrality through ecology-based projects. The subcommittee sought to obtain a grant to fund a biochar project at Big Chico Creek Ecological Reserve (BCCER). The project would reduce the amount of carbon emitted by using controlled burns and reapplying biochar to the landscape.

**Progress:** The grant was not awarded but the subcommittee will continue to work on building methodologies to quantify carbon reduction and sequestration efforts at the BCCER.

### **Procurement Subcommittee**

MacKenzie Deeter served on this subcommittee

**Goal:** This subcommittee creates policy and behavioral changes to increase the environmental sustainability of Chico State's purchasing.

**Progress:**

- Guidelines to avoid bulk purchasing of chemical products beyond what will be used in the near future were established and disseminated to key campus users. This will hopefully minimize expired or unused chemicals becoming expensive hazardous wastes.
- The subcommittee is beginning to analyze outputs (what is sent to landfill) to determine what to focus CSUC procurement guidelines towards
- The subcommittee will look to implement New Building Procurement Oversight committee
- MacKenzie researched the Surplus Office system and has developed the initial plans to promote this as a service for campus users and promoted the Surplus Office in all SCOOP audits Updated the Sustainability at [Chico State website](#) with more information on sustainable procurement practices
- MacKenzie outlined [sustainable SWAG guidelines](#) that are now live on the Chico State Sustainability website

### **Zero Waste Subcommittee**

Megan Berg served on this subcommittee.

**Goal:** The main goal of this subcommittee is to reduce landfill contributions from campus and address key recycling and composting needs of campus.

**Progress:** Megan participated in and summarized a sample waste audit conducted in Nov 2019. There were several projects in process when the campus moved to sheltering in place due to COVID-19 and are on hold until in-person activities resume.