

**ACADEMIC SENATE MINUTES  
DECEMBER 7, 2021**

Neil Watkins	President	2021-2023	P
Sarah Cotton	Vice President	2021-2022	P
Elizabeth “Liz” Encarnacion	Secretary/Treasurer	2021-2022	P
Angela Burk – Herrick	Curriculum Chair	2021-2023	P
Tracy Kocher	Business & Applied Technology	2020-2022	P
Bruce Osburn	Business & Applied Technology	2021-2023	P
Daniel Bentum	Chino/Fontana	2020-2022	P
Tara Johnson	Chino/Fontana	2021-2023	P
Lisa Doget	Health Sciences	2020-2022	P
Jayne Clark-Frize	Health Sciences	2021-2023	A
Christina Holdiness	Instructional Support	2020-2022	P
Mary Jane Ross	Instructional Support	2021-2023	A
Jeff Harlow	Kinesiology, Nutrition & Athletics	2020-2022	P
Elaine Martinez	Kinesiology, Nutrition & Athletics	2021-2023	P
Elizabeth “Liz” Encarnacion	Language Arts	2020-2022	P
Steve Shelton	Language Arts	2021-2023	P
Mark Gutierrez	Mathematics & Science	2020-2022	A
Elizabeth Cannis	Mathematics & Science	2021-2023	P
Dan Kern	Social & Behavioral Sciences	2020-2022	P
Pak Tang	Social & Behavioral Sciences	2021-2023	P
Jackie Boboye	Student Services	2020-2022	P
Michelle Martinez	Student Services	2021-2023	P
Erik Jacobson	Visual & Performing Arts	2021-2022	P
Patrick Aranda	Visual & Performing Arts	2021-2023	A
Robin Witt	Senator-At-Large	2019-2022	P
Tamari Jenkins	Senator-At-Large	2020-2023	P
Sarah Cotton	Senator-At-Large	2021-2024	P
Patty Peoples	Adjunct Senator-At-Large	2020-2022	P
John Glass	Adjunct Senator-At-Large	2021-2023	P
Alternates			
William O’Neil	Business & Applied Technology	2021-2023	A
Manar Hijaz	Chino/Fontana	2021-2023	P
Jordan Hung	Health Sciences	2021-2023	A
Shelley Marcus	Instructional Support	2021-2023	P
Candice Hines-Tinsley	Kinesiology, Nutrition, & Athletics	2021-2023	P
Leona Fisher	Language Arts	2020-2022	P
Diana Cosand	Mathematics & Science	2021-2023	P
Sergio Gomez	Social & Behavioral Sciences	2020-2022	P
Myra Andrade	Student Services	2021-2023	A
Leta Ming	Visual & Performing Arts	2021-2023	P
Vacant	Adjunct Alternate Senator	2021-2023	
Hope Ell	Classified Senate Liaison	2021-2023	A

**Guests:**

Troy Ament, Executive Director, Construction & Facilities/EOC  
Christine Cabrera, Student Director of Activities, Chaffey College Student Government  
Sam Gaddie, Sustainability & Environmental Safety Officer  
Nicole DeRose, (IPP) Faculty Senate, Accreditation Faculty Tri-Chair, Biology, M&S  
Claudine Dumais, Child Development and Education  
Kimberly George, English, LA  
Eric Houck, Executive Director, Information Technology  
Tina Kuo, (Adjunct) Biology, M&S  
Lissa Napoli, Administrative Assistant, Academic Senate  
Angela Ybarra, Student President, Multicultural Club

**1. P.E. (12:30 P.M.)****2. CALL TO ORDER (12:35 P.M.)****2.1 Remote Attendee Identification****3. PUBLIC COMMENT (Reserved for Guests only and limited to two minutes.)**

- Student Angela Ybarra invited everyone to the Leadership Conference on Dec. 10, 3-6 pm and Dec. 11 from 10 am - 2 pm covering leadership, career, and mentoring and requested this information to be passed on to students.
- Kimberly George, English, LA spoke to appeal to the Academic Senate and the leadership of Construction and Facilities, the Chino campus, and the Fontana campus to ask for your strong support of providing equal access to accessible, all-gender restrooms with clear, deliberate signage on all of the Chaffey campuses.

**4. APPROVAL OF AGENDA**

- December 7, 2021
- **Motion for Approval** - Senator Boboye moved to approve the 12.7.21 agenda. Senator Glass seconded the motion. The motion was approved. 12.7.21, 24Y/0N/0A.

**5. APPROVAL OF MINUTES**

- November 30, 2021
- **Motion for Approval** - Curriculum Chair Burk-Herrick moved to approve the 11.30.21 minutes with amendments. Senator Boboye seconded the motion. The motion was approved. 12.7.21, 24Y/0N/0A.

**6. CONSENT AGENDA****6.1 Curriculum is asking that the Academic Senate endorse the course modifications that Curriculum presented below:****Course Reactivations w/ DE:**

NURADN-482      Cooperative Education: Nursing A.D.N.

**Course Modifications w/ DE:**

CJ-4	Community and the Justice System
CJ-55	Crime and Delinquency
PHOTO-450	Color Photography Portfolio

- **Motion for Approval** - Curriculum Chair Burk-Herrick moved to approve the 12.7.21 consent agenda. Senator Glass seconded the motion. The motion was approved. 12.7.21, 24Y/0N/0A.

**7. REPORTS****7.1 President**

- Resource Allocation Committee (RAC) update: Because of resource allocations, a lot of department requests have been approved. At the beginning of the spring semester, the requisition paperwork will be coming through each Dean's office. If you are a coordinator, please work to get that paperwork turned around quickly since we are fighting against supply chain issues.
- Faculty Lecturer update: Thank you to Lissa Napoli for organizing all the details for the Faculty Lecturer and managing this event. Michelle Dowd will be presenting in person on Wednesday, April 20, 2022. There will be 65 guests in the theater (masked and vaccinated) that are invited by the speaker. Streaming options will be provided as well.
- President's Cabinet update:
  - Full-Time Faculty Hiring positions offered - 2 new faculty (Psychology and Cloud Computing) will start in January.
  - Recruitments In-Progress (some funded with outside funding sources): NextUp/EOPS/CARE; Ethnic Studies (2); Nursing (ADN), Nursing Skills Lab Instructional Specialist; Physical Therapist Assistant - Clinical Coordinator
  - Senator Jenkins asked how enrollment impacts the ranking and hiring process. President Watkins explained that enrollment is discussed with the Dean's in considering the ranking system.

**7.2 Vice President**

- Chino Native Burrowing Owls are a sensitive species that are "living and thriving" on the Chino Campus. There is a new building being built at the Chino Campus and recently the Trees and Grounds Committee reviewed the plans for the building process and wanted to commend the detail and care in creating safety for the Burrowing Owl population. Senator Cotton expressed that the Survey Biologist for the project used data collected by Chaffey Biology students.

**7.3 Secretary/Treasurer**

- No report

**7.4 Curriculum**

- No report

### 7.5 Classified Senate Liaison, Hope Ell

- Not present

### 8. GUEST(S)/PRESENTATION(S) - Executive Director, Construction & Facilities/EOC, Troy Ament; Sustainability & Environmental Safety Officer, Sam Gaddie, will share updates on returning to campus safely, all-gender / gender-inclusive restrooms, Measure P Update, and protections for the burrowing owls at Chino.

- Guest Kim George asked for plans for current facilities to include all-gender restrooms that are clearly marked and accessible locations for students for all campus locations. Troy Ament stated that the already existing single-stall locations on the Rancho campus are all-gender restrooms and will look into the already existing single-stall locations on Chino and Fontana Campus and send email responses. Senator Johnson expressed that while there is one all-gender restroom on the Chino campus, it remains inaccessible to students and requested the inclusion of an additional all-gender restroom. Troy Ament identified a secondary location that is being considered, while Senator Johnson restated that that location is inaccessible to students in certain parts of the campus and stated that the identified location is typically not accessible during classroom hours. Troy Ament stated that there are only so many options to create the space without constructing new projects. Senator Encarnacion stated that she also had a similar question in terms of why bathrooms could not be a new construction project given the accessibility needs of students at all of our campuses.
- Senator Osburn asked about the filtration system's functioning hours, to which Troy Ament stated that the systems were run in modified schedules in order to "exercise" the system, which was shortened. Senator Osburn asked about the sanitation sprayer and if faculty would be utilizing these. Troy Ament stated that they are available in all buildings to be used "as needed" at each person's discretion but are no longer required by OSHA standards.
- Senator Holdiness asked about the recent bathroom bill that stated that feminine hygiene products will need to be provided. Troy Ament

### 9. UNFINISHED BUSINESS - None.

### 10. NEW BUSINESS

#### 10.1 Action Item: Meeting format / [AB 361](#)

- Chaffey College Academic Senate can vote to approve the continued teleconference meetings as the governor extended the current emergency provision for Academic Senate and all standing subcommittees for the next 30 days.
- **Motion for Approval** - Curriculum Chair Burk-Herrick moved to continue teleconference meetings for Academic Senate and all standing subcommittees until the end of January. Senator Cotton seconded the motion. The motion was approved. 12.7.21, 25Y/0N/0A.

#### 10.2 Action Item: Student Transfer Achievement Reform Act of 2021: Associate Degree for Transfer Intersegmental Implementation Committee / [AB 928](#)

- Identify senators to work on the resolution regarding AB 928

- Senators Shelton, Encarnacion, Burk-Herrick, Glass, E. Martinez, Holdiness to collaborate and write the resolution of the position of Chaffey Academic Senate to the State Senate. Senator Osburn moved to approve the workgroup. Curriculum Chair Burk-Herrick seconded the motion. The motion was approved. 12.7.21, 25Y/0N/0A.

**10.3 Action Item:** Rising Scholars Network: justice-involved students [AB 417](#)

- Identify senators to research the resolution regarding AB 417
- Senators M. Martinez, Boboye, and Holdiness to research what Chaffey College needs to complete for funding and how Chaffey should be addressing this issue. Curriculum Chair Burk-Herrick moved to approve the workgroup. Senator Encarnacion seconded the motion. The motion was approved. 12.7.21, 25Y/0N/0A.

## 11. ANNOUNCEMENTS

### 11.1 Academic Senate for California Community Colleges (ASCCC) Information

- 11.1.1 [CTE Coffee Hour](#)**, January 13, 2022, 10:00 am to 11:00 am, Noncredit to Credit - hosts Leticia Barajas and Stephanie Clark. At these gatherings, faculty will meet virtually to share ideas and successes, discuss issues and/or concerns. This professional learning gathering will be a conversation of discipline experts to help CTE faculty better serve CTE students. Join us!

[Register for Noncredit to Credit](#)

- 11.1.2 [OER Newsletter](#)**, The ASCCC Open Educational Resources Initiative (OERI) provides statewide professional development and funding opportunities to support the expansion of the adoption of Open Educational Resources (OER) in the California Community Colleges. “OER” refers to teaching and learning materials that are freely available online for everyone to use and includes course modules, lectures, homework assignments, lab and classroom activities, pedagogical materials, games, simulations, and many more resources contained in digital media collections from around the world (as defined by OER Commons).

- 12. FLOOR ITEMS** (Reserved to raise concerns within the Academic Senate scope. Senate will hear your concerns/questions, but cannot respond. If requested, the concern can be included on a future agenda.)

## 13. ADJOURNMENT (1:55 P.M.)

**The next Academic Senate meeting is scheduled for Tuesday, January 11, 2022.**

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**Lissa A. Napoli, Recording Secretary**

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**Elizabeth “Liz” Encarnacion, Secretary-Treasurer**

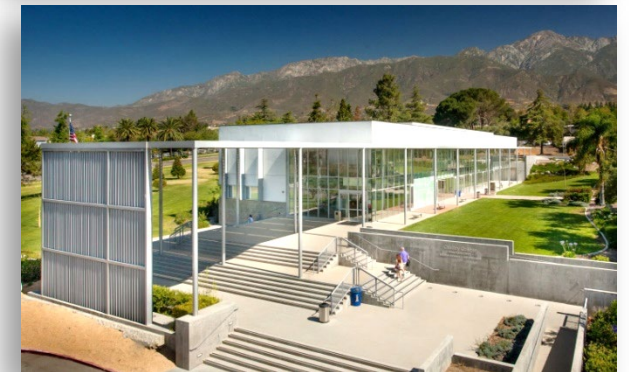


# Chaffey College

## Maintenance & Operations



Ament Commercial Photography, 2014



*Governing Board Update October 21, 2021*



Chaffey College



# Topics

- Maintenance Department Update
- Facilities Development Update
- Central Plant Update
- COVID Pandemic Prep Update
- Partnerships
- Questions



# Maintenance Highlights

- **Server Room HVAC Full Replacement**
  - Upgraded old and failing infrastructure to support sudden online demands during pandemic. Provides needed resiliency and redundancy to ensure student success.
- **Upgrades to Building Automation @ Chino Center and Chino IT.**
  - Allows for remote monitoring and operation of system from Rancho Campus Central Plant. Improved response and cost savings.
- **Beeks Lab – Duct Work Modifications/Air Balancing**
  - Improvements for instructional areas and overall system performance
- **Preventive Maintenance /Work Orders**
  - Pandemic provided opportunity for extensive equipment maintenance, repairs, or replacement.



**PREVENTIVE MAINTENANCE**







# Maintenance

## Work Order Update

Maintenance Direct & PM Direct

- **25,427** work orders completed since November 2014
- Completed/Closed **2200+** work requests during past 10 months
- **Only 320** work orders currently in progress and waiting completion



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# Grounds Highlights



- **Moving Toward Battery Powered Equipment**
  - As part of our ongoing sustainability efforts we are testing battery powered riding lawnmowers and other battery power grounds equipment. Reduce emissions and noise levels
- **Converting All Irrigation Controllers to an Online Smart Clock Model**
  - The controllers will operate on evapotranspiration (or “E.T.” watering)
  - System gathers data from local weather stations and automatically adjusts watering times to all irrigation based on current climate /weather conditions
- **Landscape / Infrastructure Improvements**
  - Campus wide improvements to landscape
  - Converting to Xeriscape/drought tolerant when feasible
- **Goats and Sheep to Mobilize**
  - A new vendor has been identified to control weeds with goats and sheep at the Chino acreage and are scheduled to begin early 2022.



## Operations Highlights



- Ongoing efforts to deep clean/detail all buildings during COVID shutdowns when campus occupancy load limited
- Purchased new Multi Brush Carpet Cleaners to improve ability to rapidly clean and maintain carpeted areas
- Upgraded Floor Scrubbers and Buffers to polish floors
- Ongoing assessment and adjustments (if needed) to all cleaning protocols.
- Ongoing review of staff assignments to maximize efficiency and productivity to ensure clean facilities





# Facilities Development

## Completed 2020-2021 Projects

- Campus Wide Parking Lot & Road Rehabilitation Project
  - 3.3 Million Square Feet - Across all campus locations
- Fontana, FNAC & RM Lewis Carpet and Electrical Replacement Project
- Museum Gallery Roofing Project
  - Full replacement of main roof
- Vineyard Rehabilitation Project
  - New vines and fencing . Marquee signs in design/production now
- Des Laurier Lab (DL) Lighting/ Automation Integration Project
  - LED upgrades to support sustainability / energy savings
  - Smart controllers for enhanced lighting schemes for instruction.
- Chino MIB Boiler Replacement
- Fontana Intech Electrical Upgrades to support expanded instruction
- CCE Signage and Tenant Improvement (Student Life /International Students)
- SSA 202-204 Tenant Improvement (Human resources expansion )





# Facilities Development

**UNDER  
CONSTRUCTION**



- HVAC 1.0 Replacement Project, Rancho Cucamonga Campus
  - 17 new units. Supply chain issues causing delays (12/21 completion)
- Duct Cleaning Survey Completed All Campuses – Bids being reviewed for approval and implementation in early 2022.
- Chino MIB Bookstore Tenant Improvement (12 /21 target for completion)
  - Expansion to support additional food service options and student gathering space
- HVAC 2.0 Replacement Project Survey – All Campus Locations (Jan. 2022)
  - Will replace any HVAC unit older the 8 years
  - Will improve efficiencies and support sustainability efforts
  - Project will include a Certified Industrial Hygienist review and air quality analysis





# Central Plant



- Permanent Load Shifting Monitoring Indicating Optimum Thermal Energy Storage (TES) Tank Performance = Maximum Energy Savings
- Full Rebuild of Both Chillers -New lifecycle
- 4 New Boilers installed in Central Plant
  - Phase I of overall campus wide stand-alone boiler project.
  - Campus project (24 boilers) has been engineered and in DSA review now.
- No recent underground hot water loop leaks. DSA Submittal Oct. 2021 for 24 boiler project





# COVID Response

## *Campus Return*

Positioned Well – And Can Easily Pivot



- Efforts from Safe Campus Reopening Taskforce resulted in framework for safe operations and return to campus
- Overall success to campus safety resulting from input from all areas of campus operations
- Development of protocols based on discipline/school specific needs key element. No area is the same



*Slow, **Safe**, Sustainable*



## Framework and Approach

- ✓ **Health & Safety (1<sup>st</sup> Priority)**
  - ✓ Follow CDC, State, and County guidelines
  
- ✓ **Communication**
  - ✓ Clear
  - ✓ Precise
  - ✓ Consistent
  
- ✓ **Educational Context**
  - ✓ *Face to Face (biggest challenge)*
  - ✓ *Hybrid*
  - ✓ *Remote*
  
- ✓ **Physical Campus Context**
  - ✓ *Air Quality (highest priority)*
  - ✓ *Barriers*
  - ✓ *Signage*
  - ✓ *PPE*
  - ✓ *Disinfecting*



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### ***Risk Avoidance***

- ✓ Develop a road map that is flexible and allows you to pivot easily
- ✓ Be prepared for changes – they will occur daily
- ✓ Identify potential liabilities and seek legal review

### ***Pre Planning***

- ✓ Identify PPE and Other Supply Needs – Place Order Early
- ✓ Conduct physical walk-throughs of all areas identified for face to face
  - ✓ Review physical spaces for safe loads and operations
  - ✓ Engage staff from specific discipline/program
    - ✓ Develop specific operational protocols and review for compliance and function before class start or office return

### ***Implementation***

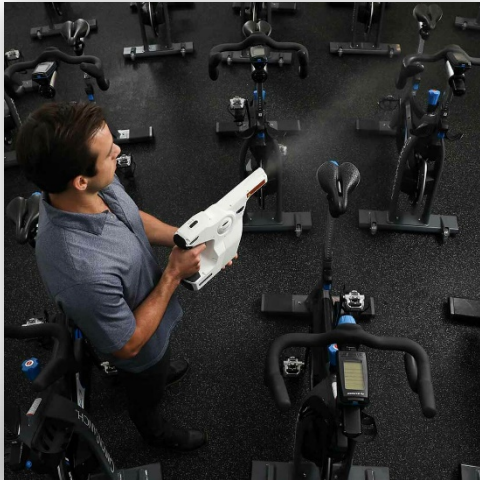
- ✓ Set-up all areas (Plexiglas, signage, PPE) three weeks in advance of return
- ✓ Walk areas (labs/classrooms) with Dean / Managers to ensure all needs are met
- ✓ Walk areas with maintenance personnel to ensure disinfecting schedules defined
- ✓ Final review of specific program protocols
- ✓ Observe first day of reopening operations and make any required adjustments



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## Best Practices



- ✓ **FAQ's for Return to Campus** *additional reference and layer of clarification*
- ✓ **Contact Tracing** Cal/OSHA Mandate
  - ✓ Building Entry Log (QualTrex Form)
  - ✓ COVID On-site Attestation and Signature Log
- ✓ **Cal/OSHA (as of 7/17/21)**
  - ✓ Majority of requirements no longer apply such as:
    - ✓ No Temperature Screening Stations
    - ✓ No Plexiglas / No other barriers required
    - ✓ No Disinfecting / Surface Contaminant Concerns
    - ✓ No COVID Occupancy Loads (we limited class/labs to 12)
- ✓ **For Safety of Campus Community**
  - ✓ District implementing and meeting all Cal/OSHA requirements
  - ✓ *Supplemental Air Purifiers / Frequent HVAC Filter Changes*
  - ✓ Realignment of physical spaces when required
  - ✓ Personal Protective Assessments for Indoor Public Spaces
  - ✓ Physical distancing reviews, Path of Travel, Signage
  - ✓ *Disinfecting protocols and schedules when applicable*

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## ***Personal Protective Equipment and Supplies***

- ✓ Plan early, order early (at start of pandemic lead times were 6-8 weeks)
- ✓ Maintain adequate minimum thresholds to avoid supply chain delays
- ✓ Establish supply/inventory controls / baseline ( in secured location)
- ✓ Establish distribution/tracking controls (key for FEMA reimbursements/tracking )

- ✓ ***950,000 Surgical Masks***
- ✓ ***7500 N-95 Masks***
- ✓ ***960 Cloth Face Coverings***
- ✓ ***1400 Face Shields***
- ✓ ***10,340 Hand Sanitizer 16.9 ounce***
- ✓ ***400 Gallons Hand Sanitizer refill***
- ✓ ***5000 Nitrile Gloves***
- ✓ ***30,000 Disinfecting Wipes***
- ✓ ***500 cans of disinfectant spray***
- ✓ ***70 cases Virex solution***
- ✓ ***600 Plexiglas Barricades***
- ✓ ***625 FlyWheel Desk Partitions***
- ✓ ***590 Air Purifiers***
- ✓ ***80 Electrostatic Sprayers***
- ✓ ***4 Pallets Roll Paper Towels***
- ✓ ***2 Pallets Restroom Hand Soap***
- ✓ ***88 Protecus Electrostatic Sprayers***



***Personal Protective Equipment and Supplies***

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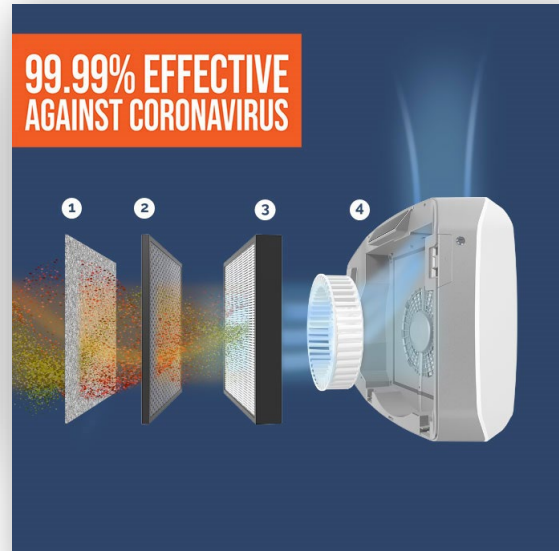
# VENTILATION

**Additional Air Purifier Survey Underway Now for Spring 2022 Needs**

Ducting cleaning for all campuses being scheduled now  
HVAC Unit replacement project underway - Phase 1 of 2 now



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**Provides maximum protection while allowing for fewer filter changes and energy savings.**

Pre-Filter

Active Carbon Filter

True HEPA Filter

PlasmaTrue™ Bipolar Ionizer

## Clean Air for your Office & Staff

# EFFECTIVE & EFFICIENT

4-stage True HEPA filtration provides maximum protection and is 99.99% effective against coronavirus\*.

**Smart technology works hard when contaminants are detected then shifts to standby when the room is empty or when the air is clean.**

### **BREATHE EASIER**

**99.99%** airborne reduction of a **coronavirus** surrogate within 60-minutes of operation.

**99.97%** of harmful germs, allergens and particulates are removed safely and easily

**Will further augment our existing HVAC systems and provides increased level of safety.**

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## Outside Agency Collaboration /Partnerships

- **Ensuring relationships and mandates are met with outside agencies**
- **Frequent meetings / communication pre-emergency event /major disaster**

SB County Office of Emergency Services (OES)

Southern California Edison (SCE)

The Gas Co

Cucamonga Valley Water District (CVWD)

City of Rancho – Fire (Fire Marshal Office and Emergency Management)

City of Rancho – Public Works and Streets

City of Chino

City of Fontana

OmniTrans

Burrtec Waste

Waste Management

West Valley Vector Control





Chaffey College

# QUESTIONS ?



*Governing Board Update October 21, 2021*





# ENVIRONMENTAL SUSTAINABILITY GOVERNING BOARD MONITORING REPORT OCTOBER 21, 2021



PREPARED BY: SAM GADDIE, SUSTAINABILITY & ENVIRONMENTAL SAFETY OFFICER

Chaffey  College

# INTRODUCTION

Chaffey College recognizes that sustainability is vital to achieving its mission of improving lives and our community. In 2013, the Governing Board adopted “Environmental Responsibility” as one of its core values (BP 1400.6). It states that, “Chaffey College commits to the preservation, conservation, and responsible use of its resources.”

The District quantitatively and qualitatively measures sustainable practices at the three campus locations, including recycling, curriculum, outreach, energy efficiency, and renewable energy production on an annual basis. This Monitoring Report will detail quantities of materials recycled and revenue/rebates received; highlight curriculum and outreach opportunities; identify efforts to improve energy efficiency and resource conservation; and examine the performance, production, and estimated savings of the solar carport systems.

The economic and environmental benefits of sustainable practices have been, and continue to be, realized. Sustainability and environmental responsibility are key factors in all future planning for continuous improvement.



# RECYCLING

As stated in the core values of the District, “Chaffey College commits to the preservation, conservation, and responsible use of its resources. Recycling is a vital component of the District’s commitment to sustainable resource usage. This report will detail the quantities of materials recycled and any revenue/rebates received for the fiscal year. Hazardous materials disposal and recycling, when available, will also be addressed in this section.

While the pandemic has reduced operations at all campuses and hence its use of resources, the District continues to recycle all eligible materials. The transition to online courses is an opportunity to explore how the District can further preserve and conserve its resources.

**REDUCE REUSE RECYCLE!**



## RECYCLED MATERIALS

Once materials are utilized and spent, responsible resource management requires recycling these materials whenever feasible. The District annually collects and recycles thousands of pounds of spent materials through various vendors. Items recycled each year include light tubes and bulbs, lighting ballasts, batteries, printer toners and cartridges, shipping pallets, paper, and organic green waste.

Quantities and types of materials recycled are tracked, when possible. Rebates and revenue generated from recycling is documented, as well. Below is a list of recycled materials tracked for fiscal year 2020-21. As stated in the introduction of this section, the pandemic has reduced college operations and the amount of resources consumed for the fiscal year. Amounts below may be less than reported in previous years.

- **Batteries: Over 130 lbs.**
- **Light Tubes and Bulbs: Over 280 lbs.**
- **Lighting Ballasts: Over 300 lbs.**
- **Pallets: Over 330**
- **Revenue Generated From Pallet Recycling: \$393**
- **Paper: Over 90 tons**
- **Rebate Generated From Paper Recycling: \$90**



## HAZARDOUS MATERIALS

Chaffey College continues to manage all hazardous materials in a safe and responsible manner and in compliance with all local, state, and federal regulations. The District contracts with ACTenviro to dispose of all regulated hazardous waste. Waste collected and disposed of include laboratory chemicals, dissection specimens, spray paint, inks and dyes, cleaning solvents, gas cylinders, expired pharmaceuticals, treated wood, asbestos containing materials, tires, automotive oil and coolant, and oil drums. Materials from 8 out of 27 hazardous waste manifests were sent to Transfer Disposal and Storage Facilities (DTSF) for recycling.

Safe management of hazardous materials and waste is crucial to a safe, healthy and sustainable campus environment and part of the college's commitment to responsible resource usage. The District will continue to contract with exceptional waste vendors for hazardous materials disposal and train its staff on proper waste management.

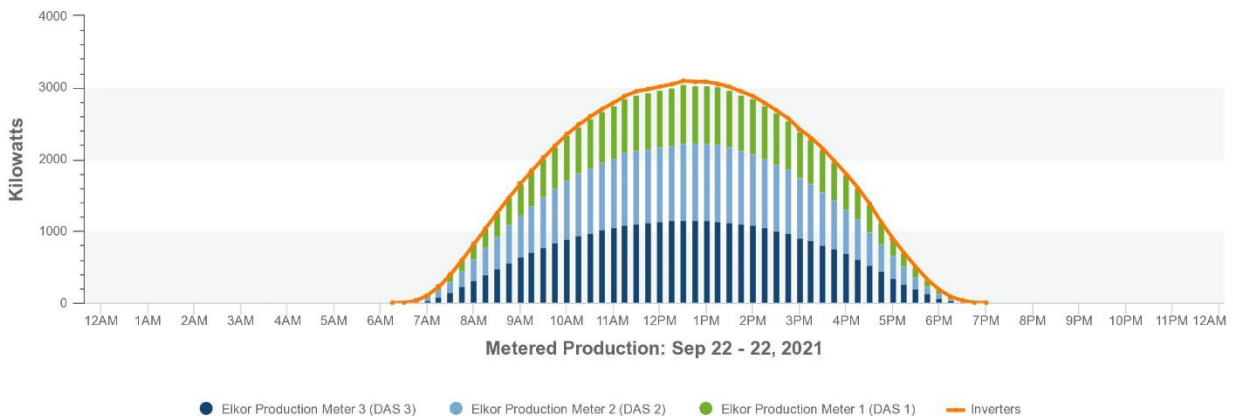


# CURRICULUM

## SOLAR CARPORT DATA ACQUISITION SYSTEM (DAS)

There are many opportunities to include sustainability into academic curricula. An excellent example is the use of the data from the photovoltaic solar carport system. The system is linked to a Data Acquisition System (DAS) which provides real time measurements of various performance and environmental factors including: electricity production, panel efficiency, solar irradiance, temperature, and wind speed. The DAS also displays infographics showing power production over time (days, weeks, months, years, and lifetime) and environmental equivalents related to power production (such as the amount of carbon dioxide or water off-set by using renewable energy). Information from the DAS is managed through the AlsoEnergy website. An overview of the DAS and its potential uses in curriculum was presented at the 2018 Living Lab Symposium. Data from the DAS has been used in statistics courses and many disciplines have expressed interest in incorporating this resource into instruction.

### DAILY PRODUCTION AT RANCHO CUCAMONGA CAMPUS FROM DAS SYSTEM



## LIVING LAB

Chaffey College has fully embraced the campus as a living lab model and uses this mindset in facilities design and planning. Campus as a living lab recognizes that there is inherent curricular value in the facilities and infrastructure of the campuses. As detailed in the previous section, the photovoltaic solar carport systems and its Data Acquisition System (DAS) is an excellent example of using existing infrastructure to enhance classroom instruction. Statistics courses have already been utilizing this real world data within their lessons. Likewise, Mark Padilla has been incorporating components of the central plant in Physics courses to demonstrate actual examples of thermodynamics and heat exchange to students.

As the District proceeds with Measure P projects on its existing campuses and plans the new Fontana and Ontario campuses, there are many opportunities to incorporate the campus as a living lab model in the designs. Work groups for users and for sustainability are part of the planning and development process for all projects under Measure P.



# OUTREACH

The pandemic drastically limited the outreach opportunities for Chaffey College for fiscal year 2020-21. The annual celebration of Earth Day and Living Lab Symposium were canceled, as were all in-person events on the campus. Attendees at the Earth Day event represent the many partnerships the District maintains with the members and agencies of our communities engaged in sustainability. Participants include Burrtec Waste, OmniTrans, California Conservation Corps, the Sierra Club, Cucamonga Valley Water District, and the City of Rancho Cucamonga Healthy RC/Environmental Division. Chaffey College looks forward to hosting Earth Day in 2022.

The City of Rancho Cucamonga Healthy RC program currently has \$1,000 mini-grants available to community organizations that address any of eight community health priorities. The eight priorities are healthy eating and active living; community connections and safety; education and family support; mental health; economic development; clean environment; healthy aging; and disaster resiliency. This grant opportunity has been shared with the Office of Student Life and student environmental clubs.





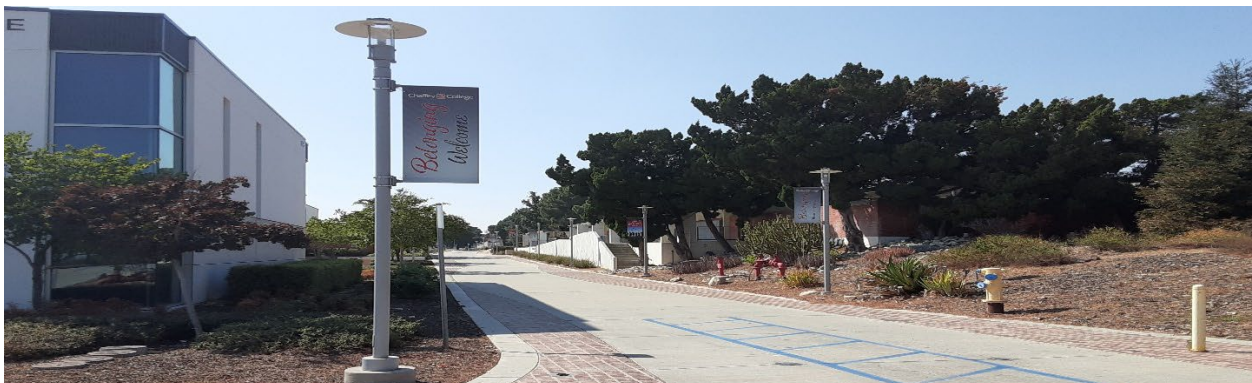
# ENERGY EFFICIENCY

Energy efficiency is another important facet of responsible use of District resources. Energy use is a major contributor to carbon based emissions and other environmental degradation.

Chaffey College continuously strives to improve its energy efficiency through infrastructure upgrades, responsible energy usage, electrical load shifting, and sustainable facility design and construction. The college also supports the shift from carbon based fuels to electric vehicles and equipment. Electric vehicle charging stations have been installed on each of the campuses and offer our staff and students a low cost means of recharging electric vehicles. Maintenance and Operations has also transitioned to electric carts for Facility Maintenance Attendants and continues to explore options for other alternative fuel vehicles and equipment.

Related to energy efficiency is resource conservation. By reducing resource consumption and utilizing sustainable technologies, the overall energy and carbon footprint of the college is reduced. The District continuously seeks to improve conservation efforts. Water conservation is particularly important in California, and Chaffey College is improving infrastructure to reduce demand. The Grounds Department is also working to contract sustainable weed abatement at the Chino campus to protect our biological resources.

An unintended positive of the pandemic has been the reduction of the District's overall carbon footprint. Emissions associated with student and staff transportation to campus were cut to a small percentage of previous years.



## ENERGY EFFICIENCY

Chaffey College has made and continues to make appreciable improvements in energy efficiency. Exterior lighting has been upgraded to LED bulbs at the Ranch Cucamonga campus in the following area: ATL, CAA, AD, Science Complex, and along the promenade. LED lighting uses 87% less power and last 2 to 3 times longer, reducing energy costs and work load on Maintenance and Operations staff. As lighting systems need replacement, LED retrofits will be utilized where feasible. The Thermal Energy Storage tank system continues to provide cooling to the Rancho Cucamonga campus, shifting the electrical load to off-peak times and lowering utility costs for the District.

Alternative fuel vehicles are another growing element of efficient use of energy and resources. The college has installed electric vehicle charging stations at all three campuses and is working to transition District vehicles and equipment to alternative fuels. The list below highlights information for the electric vehicle chargers, as of the end of fiscal year 2020-21.

- ChargePoint EV Charging Stations were activated **June 3, 2019**
- **5** Dual Port CT4020 Charging Stations are available (**10** ports total)
- Charging Sessions Thru June 2021: **1,804**
- Greenhouse Gas Savings: **5,650 kg of CO<sub>2</sub>**
- Revenue Generated To Date: **\$4,879**
- Average Cost Per Session: **\$2.70**



The Maintenance and Operations Grounds Department is working to transition its equipment to electric where feasible. Two battery powered blowers have been purchased to replace gas powered units. These electric blowers operate with significantly less noise, reducing interference with instruction, and no emissions, reducing noxious fumes and pollution. The Grounds Department is also demoing electric lawn mowers from Mean Green Mowers. There is an opportunity to receive up to a 75% rebate from the South Coast Air Quality Management District (AQMD) for replacing two gas powered mowers with electric units. The rebate program is scheduled to renew in late October 2021. As with the blowers, the electric mowers are zero emission and much quieter, improving the college's carbon footprint and the campus communities.



As the District proceeds with the many projects under Measure P, energy efficiency is incorporated into all elements of the design and construction of facilities and infrastructure. A Sustainability Focus Group has been an integral part of project planning for the Vision 2025 Facilities Master Plan, for the upcoming Chino Instructional Building, and for the new Fontana Campus Master Plan. This focus group will also participate in the planning for the Ontario Campus Master Plan and other projects under Measure P.

Energy efficient building design includes numerous aspects of the design and construction of sustainable facilities. Lighting systems, HVAC systems, building insulation and materials, plumbing design and equipment, and window treatments can have a significant impact on energy usage and demands for a building. Energy efficient facilities reduce the burden on utilities and the environment, while saving on utility costs for the owner.

The Chino Instructional Building is being designed for “net-zero energy” certification with the State of California. Net-zero energy certification signifies the carbon emissions produced from operating the facility are offset by renewable energy production; in this case, the photovoltaic carport system at Chino.



## RESOURCE CONSERVATION

Resource conservation has a direct impact on the overall energy efficiency of an organization. Chaffey College diligently conserves the many resources it needs to conduct operations. The conservation and prudent use of natural and manmade resources minimizes the environmental impact of the college and lowers operational costs

Water conservation is critical in California, as drought conditions persist year after year. Chaffey College has made significant reductions in water usage following the state and locally mandated water restrictions in 2015, lowering its water usage by nearly 7 million gallons annually. Irrigation of campus grounds accounts for the majority of water usage. The Maintenance and Operations Grounds Department is finalizing a parts list and soliciting quotes for the installation of 25 smart irrigation controller systems. The Rain Bird IQ Smart Controllers will be programmed with the exact environmental conditions and plant materials on site, and linked to local weather stations to replace only what water is lost through evaporation and transpiration. The controllers can be finely adjusted as needed for each location and accessed remotely with any smart device. Smart irrigation controllers can potentially reduce water usage by up to 50%.



Chaffey College is also committed to managing and protecting its biological resources. The Chino campus is home to several breeding pairs of Burrowing Owl, a Species of Special Concern in California. The District is in the process of contracting with Dependable Grading to provide weed abatement at Chino. Dependable Grading uses goats and sheep to sustainably manage weeds. Using herbivores for weed abatement is recognized by the California Department of Fish and Wildlife as the best method to protect Burrowing Owls. Courses in Biology frequently observe and report on the owls as part of the curriculum.



# RENEWABLE ENERGY

Renewable energy is the path to a future without human caused carbon emissions. Chaffey College committed to a clean environment with the installation of its 5.5 MW photovoltaic carport solar system. Since becoming operational in late 2017/early 2018, the solar carport systems have generated millions of kilowatt hours of electricity, significantly reducing the District's carbon footprint and generating millions of dollars in financial savings. The solar carports signify Chaffey College has embraced its core value of environmental responsibility and demonstrates to our students, staff, and communities our leadership in sustainability.

In March of 2020, Chaffey Community College District was the recipient of the 2019 Board of Governors Energy and Sustainability Award for overall best project for a medium district for its PV installation project.



## ENVIRONMENTAL BENEFITS

There are many environmental benefits from utilizing clean renewable energy. Over the lifetime of the solar PV system, 30.8 million pounds of carbon dioxide (CO<sub>2</sub>) have been avoided compared to natural gas fired electricity generation. Over 18 million gallons of water have been saved versus non-renewable electricity production.

Another benefit of the carport solar PV structures is providing shaded parking for students and staff. There are 94 shaded parking stalls at the Fontana campus, 240 at the Chino campus, and over 1,100 shaded stalls on the Rancho Cucamonga campus. Given the many hot days experienced in southern California, this is a significant benefit to students and staff.

The solar PV system also benefits curriculum as part of our Living Lab initiative. The system is linked to a Data Acquisition System (DAS) which provides real time measurements of various performance and environmental factors including: electricity production, panel efficiency, solar irradiance, temperature, and wind speed. The DAS also displays infographics showing power production over time (days, weeks, months, years, and lifetime) and environmental equivalents related to power production (such as the amount of carbon dioxide or water off-set by using renewable energy). Data from the DAS has been used in statistics courses and many disciplines have expressed interest in incorporating this resource into instruction. Display monitors have been installed in high traffic areas on all three campuses which feature real-time infographics from the DAS system, showing how much electricity has been produced to date and the environmental benefits of renewable versus non-renewable energy production.





## ECONOMIC BENEFITS

Since becoming operational, the solar PV system has generated over 33 million kilowatt hours of electricity. To calculate an estimate of the financial savings to the District, the total solar PV production for each year was determined using the Data Acquisition System (DAS) and multiplied by the average electricity billing rate for that year. The electricity billing rate was computed by averaging the monthly electricity billing and usage for each site.

### **Kilowatt Hours (SolarPV) X Average Electricity Billing Rate = Savings for Year**

The table below shows the estimated yearly savings to the District using the formula detailed above.

<b>Year</b>	<b>Kilowatt Hours</b>	<b>Average Billing Rate</b>	<b>Savings for Year</b>
2018	8,167,306	\$0.153	\$1,249,597.82
2019	8,331,111	\$0.158	\$1,316,315.54
2020	9,000,633	\$0.164	\$1,476,103.81
2021*	4,960,314	\$0.212	\$1,051,586.51

\*2021 values are from January to July

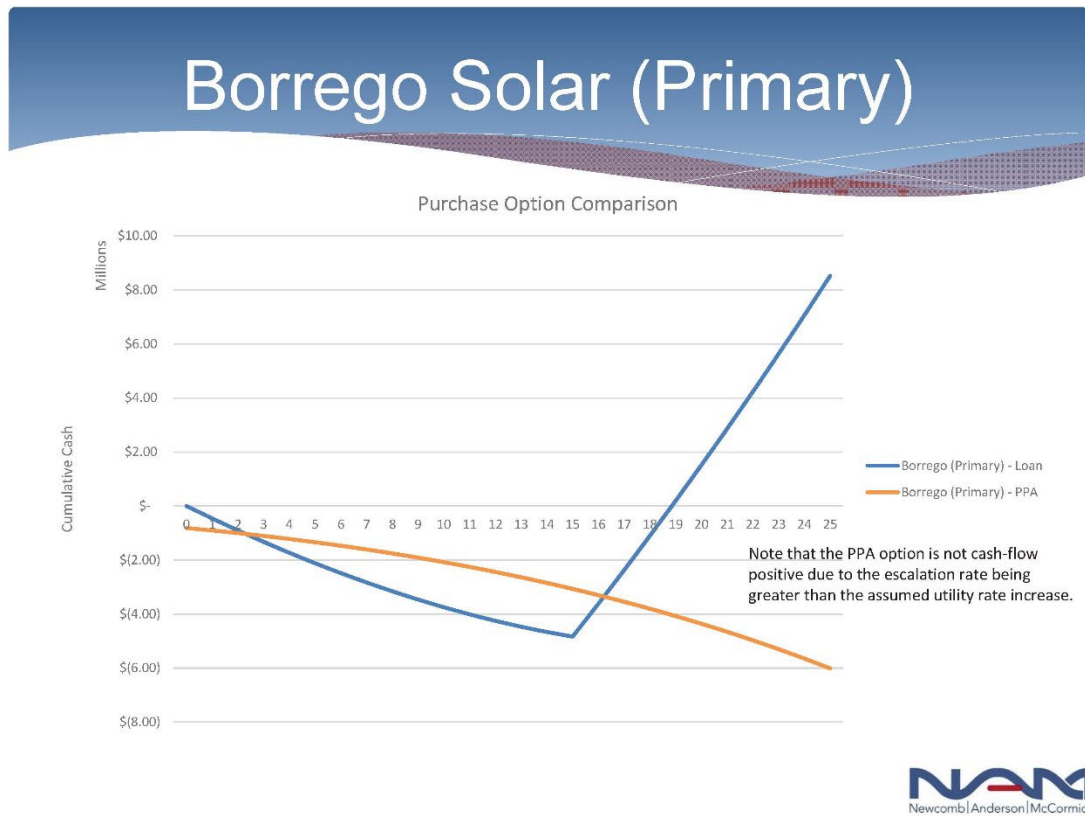
Totaling the calculated savings for each year, the overall financial savings to the District can be determined.

### **Total Estimated Savings from Solar PV System = \$5,093,604**

As evidenced by the billing rates calculated above, electricity rates are increasing year after year. The financial savings to the District will likewise increase. This increase in savings will shorten the bond payoff period and accelerate the ROI for this project, making the solar carport system a sound financial investment, in addition to the environmental and community benefits outlined above. The District applied for and received Clean Renewable Energy Bond (CREBs)

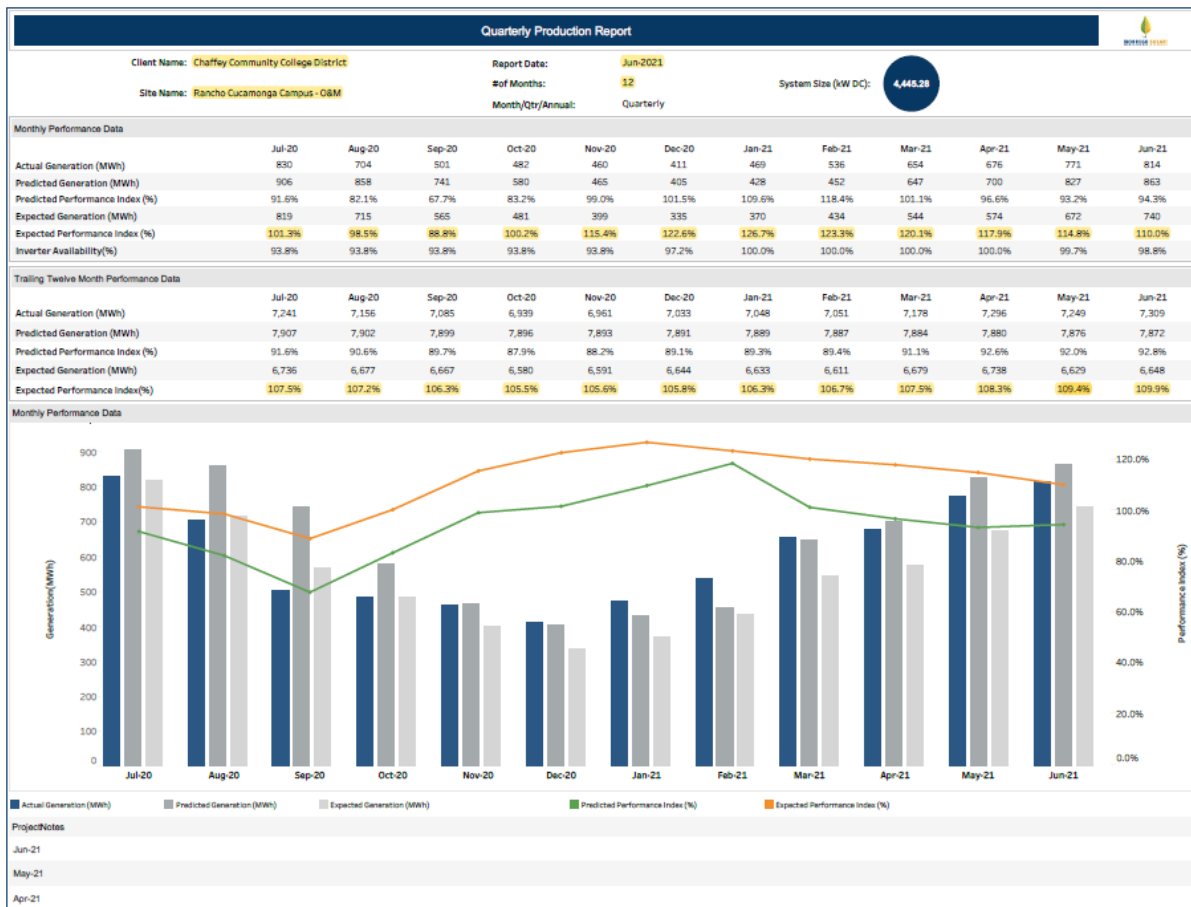
funding to finance construction of the solar PV system. The CREB program is administered by the IRS and provides bond authorization for public entities. The bonds are issued at extremely low rates and allow the cost savings from renewable electricity systems to be used to pay off the bond.

The annual savings realized from the photovoltaic carport systems are significant. The District is on track to meet the projected payoff timeframe developed during the solar feasibility study conducted by Newcomb Anderson McCormick. The blue line in the graph below indicates a ROI at just over 18 years for the CREBs financed solar carport system. Given the 25 year expected life of the photovoltaic systems, the District has an opportunity to realize millions of dollars in savings annually for the final years after payoff.



## SYSTEM PERFORMANCE

Performance of the photovoltaic carport systems is measured using an Expected Performance Index (EPI), which compares the actual production of the carport system invertors to the expected performance of the system based on the design and engineering models. An Expected Performance Index greater than 100% indicates that the photovoltaic system is performing better than predicted from the models. Better performance increases the economic and environmental benefits of the carport solar systems. Production reports from Borrego Solar demonstrate the photovoltaic systems are achieving an EPI greater than 100% annually, as shown in the Q2 Production report below for the Rancho Cucamonga campus, covering FY 2020-21.



**Average EPI for all sites = 103.0% for FY 2020-21**

Senators		Present	Approval of Agenda 12.7.21	Approval of 11.30.21 Minutes	Approval of 12.7.21 Consent Agenda	Approval of meeting format AP 361 until end of January	Approval of workgroup for AB 928 resolution	Approval of research workgroup for AB 417	
<i>Alternate Senators Italicized</i>									
<b>Representation</b>	<b>Name</b>								
President	Neil Watkins	y							
Vice President/President Elect	Sarah Cotton	y	y	y	y	y	y	y	
Secretary/Treasurer	Elizabeth "Liz" Encarnacion	y	y	y	y	y	y	y	
Curriculum Chair	Angela Burk-Herrick	y	y	y	y	y	y	y	
Business & Applied Technology	Tracy Kocher	y	-	-	-	y	y	y	
Business & Applied Technology	Bruce Osburn	y	y	y	y	y	y	y	
<i>*Business &amp; Applied Technology Alternate</i>	<i>William "Bill" O'Neil</i>								
Chino/Fontana	Daniel Bentum	y	y	y	y	y	y	y	
Chino/Fontana	Tara Johnson	y	y	y	y	y	y	y	
<i>*Chino/Fontana Alternate</i>	<i>Manar Hijaz</i>	y							
Health Sciences	Lisa Doget	y	y	y	y	y	y	y	
Health Sciences	Jayne Clark-Frize								
<i>*Health Sciences Alternate</i>	<i>Jordan Hung</i>								
Instructional Support	Christina Holdiness	y	y	y	y	y	y	y	
Instructional Support	Mary Jane Ross								
<i>Instructional Support Alternate</i>	<i>Shelley Marcus</i>	y	y	y	y	y	y	y	
Kinesiology, Nutrition, & Athletics	Jeff Harlow	y	y	y	y	y	y	y	
Kinesiology, Nutrition, & Athletics	Elaine Martinez	y	y	y	y	y	y	y	
<i>Kinesiology, Nutrition, &amp; Athletics Alternate</i>	<i>Candice Hines-Tinsley</i>	y							
Language Arts	Elizabeth "Liz" Encarnacion								
Language Arts	Steve Shelton	y	y	y	y	y	y	y	
<i>*Language Arts Alternate</i>	<i>Leona Fisher</i>	y							
Mathematics & Science	Mark Gutierrez								
Mathematics & Science	Elizabeth Cannis	y	y	y	y	y	y	y	
<i>Mathematics &amp; Science Alternate</i>	<i>Diana Cosand</i>	y	y	y	y	y	y	y	
Social & Behavioral Sciences	Dan Kern	y	y	y	y	y	y	y	
Social & Behavioral Sciences	Pak Tang	y	y	y	y	y	y	y	
<i>*Social &amp; Behavioral Sciences Alternate</i>	<i>Sergio Gomez</i>	y							
Student Services	Jackie Boboye	y	y	y	y	y	y	y	
Student Services	Michelle Martinez	y	y	y	y	y	y	y	
<i>*Student Services Alternate</i>	<i>Myra Andrade</i>								
Visual and Performing Arts	Erik Jacobson	y	y	y	y	y	y	y	
Visual and Performing Arts	Patrick Aranda								
<i>*Visual and Performing Arts Alternate</i>	<i>Leta Ming</i>	y	y	y	y	y	y	y	
Senator-At-Large	Robin Witt	y	y	y	y	y	y	y	
Senator-At-Large	Tamari Jenkins	y	y	y	y	y	y	y	
Senator-At-Large	Sarah Cotton								
Adjunct Senator-at-Large	Patty Peoples	y	y	y	y	y	y	y	
Adjunct Senator-at-Large	John Glass	y	y	y	y	y	y	y	
<i>*Adjunct Alternate Senator</i>	<i>Vacant</i>								
Classified Senate Liaison	Hope Eil								
<b>RED indicates reported absence</b>	<b>PURPLE indicates reported tardy/leave early</b>								
<b>Total Yes Votes</b>		<b>30</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>0</b>
<b>Total No Votes</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Abstentions</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
- = Not available during meeting to vote									
<b>37 members total - up to 27 voting at any given time. The President is a non-voting member. Curriculum Chair now votes per 8.25.20 meeting.</b>									
President ONLY votes to break a tie.									
A quorum shall consist of two-thirds of the voting members of the Faculty Senate									
18 members are needed for QUORUM									
40 Present at this meeting = 30 members, 10 visitors									
<b>12.7.21 Academic Senate Meeting</b>									