

The Green Workplace Program at UC Davis Health

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Introduction

The Green Workplace Program at UC Davis (UCD) helps offices, laboratories, and workspaces on campus reduce harmful impacts they have on the environment including emission reductions, energy and water use, and proper diversion and reduction of waste. Expanding this program to other UC campuses is an important step in keeping with the UC Sustainable Practices Policy and will help to hit all the UC sustainability goals.

As the UC Davis Health (UCDH) campus is a part of the greater UC Davis system and is located in Sacramento close to Davis, **the main goal of this project is to adapt the Green Workplace Program (GWP) for the UCDH campus.** Through the course of this project, the GWP has been modified to prioritize the office spaces on the UCDH campus and has been streamlined to make the program simple for employees to work through. **Additionally, LEED EBOM requirements have been considered within the Green Workplace Program to leverage the GWP's actions with LEED requirements and take the Health campus' workspaces a step closer to LEED certification** while strengthening sustainability and energy efficiency on campus.

To test out the GWP at UCDH, this project took the framework of UC Davis' GWP, including the steps of the program and the list of actions provided by UC Davis' Sustainability Office, simplified some of the actions and processes for a three month pilot run at the UCDH Sustainability Office, and looked at potential reductions in transportation emissions, energy use, and water uses the GWP can have if fully implemented.



Figure 1: An image of the Plant Operations Administration Office on the UC Davis Health Campus.

GWP ACTION CATEGORIES

<p>Waste Conventional, Reduce, Reuse and Repair</p>
<p>Energy Equipment and Lighting</p>
<p>Water</p>
<p>Transportation</p>
<p>Communications</p>
<p>Purchasing</p>

Figure 2: Categories for the Green Workplace Program actions.

Methods

The GWP pilot took place in the Plant Operations Administration Office (3250 sq ft) of UCDH from January to March 2022, with 15 employees participating in the pilot. The steps of the pilot were to:

- Conduct an assessment of sustainable actions already done in their workplace
- Work through all the different actions of the GWP list
- Complete an exit survey to see how many actions were completed and how well they were completed

Once all the steps were done, the survey gave the workplace a point total and certification based on that, and the office got feedback on what to work towards to gain a higher certification.

To understand the impacts this program would have if run for a longer time period and at a larger scale (approx. 1 million sqft and 5,000 employees), calculations on reductions in water and energy use as well as transportation emissions were made by considering these variables:

- **Water use:** One person uses around 10 gal/day in a typical building¹.
- **Transportation:** An average employee drives around 34 miles for a commute from Davis to Sac, and emit around 29 pounds of CO₂².
- **Energy use:** A typical office space uses about 2.7 W/sf (AC units, lights, computers, etc.) and operates about 3000 hrs/yr³.



Figure 3: A section of the recycling poster used for on GWP action



Figure 4: A company that produced recycled paper product.



Figure 5: A screenshot of a compostable coffee filters.

Results and Outcomes

As the pilot was run in 3 months, the program was **modified greatly to include actions feasible** during that pilot period. **Some actions included: posting recycling and composting signage on all waste bins in the office, shutting down computers at the end of the day, looking into purchasing options for items that are reusable/compostable, and finding alternate sources of transportation.** The office brought their GWP certification to a **Bronze level.**

This is what reductions in water and energy use, and transportation emissions would look like if the GWP was run for a longer time period and over a larger scale:

- **Water use:** Changing to low flow faucets and low flush toilets from the average flow models would save **4.8 mil gal/yr in a 5,000 person office**⁵!
- **Transportation:** incentivizing more people to use the Causeway Connection (zero-emissions) can completely cut out CO₂ emitted by commuters⁶.
- **Energy use:** looking only at computer use, taking measures to lower brightness, and switching to have only 1 extra display screen, one person can save around 100 watts/hour⁷! This could mean saving 1.3 million kilowatts/ year for 5000 employees, and reducing greenhouse gas emissions by 293 metric tonnes of CO₂e⁸.

Conclusion

Despite its shortcomings, the pilot program proved successful and many changes in the actions and processes of the GWP were made after feedback from the Plant Operations Administration Office staff. The Green Workplace Program will continue to be used in that office, and once more tweaks have been made, it can be expanded to include other offices and classrooms on the UC Davis Health campus. Eventually, with enough staff and student support, this program can be implemented on the other UC campuses and help the UC system work towards a more sustainable future.



Figure 6: Logo of the USGBC LEED certification program.

Future Goals

The future of the Green Workplace Program at UC Davis Health is to implement the program across the approx. 4 million sq-ft campus within the next 10 years; within those years, the process will be streamlined and modified to lessen the burden on the staff working on the program and to make it as impactful as possible.

In addition to the GWP being a stand-alone way to get offices (and labs) to be as sustainable as they can within their own routines, this program has potential to help buildings achieve LEED certification. As described by the University of California's Policy on Sustainable Practices, each campus should aim to have as many LEED certified buildings as feasible. Leveraging existing programs such as the GWP can help UC campuses get their certifications quicker. When analyzing the overlap between these programs, **around 66% of GWP actions can qualify as LEED requirements!** getting LEED certified is a big step towards sustainability, and implement the Green Workplace Program on all campuses can further that goal.

References

1. "Estimating Methods for Determining End-Use Water Consumption", Federal Energy Management Program, <https://www.energy.gov/eere/femp/estimating-methods-determining-end-use-water-consumption>
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 6. "Causeway Connection: Zero-Emission Buses Connecting UC Davis", UC Davis Transportation Services, <https://taps.ucdavis.edu/causewayconnection>
 7. Plug Load Calculator, UC Davis Energy and Engineering, <https://airtable.com/shrNUJlnAE89fPaV2>
 8. EIA, Electricity, Emissions by plant and by region, <https://www.eia.gov/electricity/data/emissions/>
- Link to the [original Green Workplace Program from UCD](#)

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