CalPERS' Annual Sustainability Highlights Report

Calendar Year 2024

Operations Support Services Division

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Overview

The Operations Support Services Division (OSSD) is pleased to present the annual Sustainability Highlights Report, providing a detailed look at CalPERS' green operations, performance, and achievements for the prior calendar year in 2024. These achievements are based on CalPERS' goals and initiatives to improve its green performance as a state agency and contributor to environmental preservation.

CalPERS' journey to become a pioneer of energy efficiency and a key player regarding climate change policies remains a success. This year, our focus is on energy conservation through the recertification of Leadership in Energy and Environmental Design (LEED®), LEED® Zero certification, renewal of WELL Health-Safety, and annual reporting to Energy Star. CalPERS continues to work diligently to increase waste diversion rates and water efficiency. Other measures at Lincoln Plaza (LP) include tracking the data center's energy usage, and monitoring electric vehicle charging station use. Similar to most agencies, we continue to report our greenhouse gas (GHG) emissions for Scope 1 and 2 via The Climate Registry. CalPERS has also started working on a Decarbonization Plan for its Headquarters to eliminate almost all carbon emissions onsite. Part of the plan includes for the first time, tracking Scope 3 GHG emissions related to employee transportation. Additionally, we are making significant strides towards adapting more sustainable purchasing policies. In the coming years, we hope to increase our focus on energy efficiency with the installation of LED lighting and additional EV chargers. We also aim to increase our waste diversion and have scheduled waste audits in the next two years to track our progress.

Certain key performance indicators may continue to fluctuate as team members maintain a hybrid schedule and as infrastructure ages. As the organization has settled into a hybrid schedule, CalPERS has maintained and improved its high-efficiency operations, developed plans to upgrade LP's water efficiency, improve biodiversity, and become decarbonized. The below sustainability categories outline the actions and efforts taken by CalPERS to meet or surpass all sustainability goals and requirements for both Lincoln Plaza North (LPN) and Lincoln Plaza East/West (LPEW).

Leadership in Energy and Environmental Design (LEED®)

The LEED® Green Building Certification Program, administered through the United States Green Building Council and Green Building Certification Institute, was designed to help develop highly efficient sustainable buildings. The LEED® green building rating system is the most widely used globally and its certifications symbolize that a building is sustainable.

- Lincoln Plaza (LP) recertified under LEED® Existing Buildings: Operations and Maintenance version 2009 in 2018. The Certification levels are Platinum, Gold, Silver, and Certified. LPN earned LEED Gold® and LPEW earned LEED Platinum®.

- In 2023, CalPERS began its recertification process under the latest version of LEED version 4.1. As of 2023, LPN and LPEW have kept LEED Gold®. LEED is recertified every three years and our next recertification will begin in 2027.

- CalPERS has begun researching ways to electrify its LP buildings, increase waste diversion, increase energy efficiency, and decrease water usage for future LEED recertifications.

- In January 2024, CalPERS was awarded LEED® Zero Carbon for its 2023 performance and looks forward to renewing its certification in the next renewal cycle which occurs every three years.

- LEED® Zero Carbon means LP buildings have net zero carbon emissions from energy consumption through existing energy efficiency practices or emissions that were offset over a period of 12 months.

- This was achieved by developing a Decarbonization Plan through the partial calculation of our Scope 3 emissions for employee commuting.

Greenhouse Gas Emissions

The sources of Greenhouse Gas Emissions (GHG) that CalPERS reports on are electricity, natural gas, gasoline, diesel, propane, and refrigerant. These sources come from LP buildings, an Emergency Operations Center, parking lots, regional offices, warehouses, and fleet vehicles. Carbon offsets are purchased to zero out LP's non-electricity created carbon including natural gas, diesel, propane, and refrigerant. Since 2012, CalPERS has implemented a voluntary audit measure by having a third-party, The Climate Registry, verify its inventory to an accuracy of within 5%.

- In 2024, CalPERS completed the GHG inventory for the 2023 emissions year and achieved an emissions reduction of 83*%,* or 5,395 metric tons, of carbon dioxide equivalent, when measured against the 2010 baseline.

- CalPERS submitted its 2024 GHG inventory to the Climate Registry portal and verified it with a third-party verifier.

- CalPERS covers 50% of the GHG associated with LP's electric energy consumption with the SolarShares program and the remaining 50% with Sacramento Municipal Utility District's (SMUD) Greenergy program by purchasing renewable energy certificates. Beginning January 1, 2020, Greenergy began providing LP with a mix of wind, hydropower, and solar renewable energy certificates (RECs) from California. RECs represent proof that 1 MWH of electricity was generated from a renewable energy resource and delivered to the electricity grid.

Energy Star

The Energy Star Portfolio Manager is an energy and water benchmarking program for existing buildings led by the United States Environmental Protection Agency to provide a snapshot of a building's energy performance. Annually, buildings receive an Energy Star score based on its energy performance in comparison with buildings nationwide of similar construction and size.

- In 2024, LP continued to be Energy Star certified and exceeded or met the mandated Energy Star score of 75. LPEW received a score of 85 and LPN received a score of 75.

- These scores mean that LPEW is more energy efficient than 85% of similar properties nationwide and that LPN is more energy efficient than 75% of similar properties nationwide.

Energy Conservation

Grid-based Energy

Grid-based energy includes electrical and natural gas utilities. Water heaters and boilers use natural gas to produce hot water and heat LP buildings.

- In 2024, CalPERS' total grid-based energy was only 7% greater than the 2003 baseline which is a significant improvement considering our total grid-based energy has typically been greater than 20%. Despite the increase in more onsite employees in the last two years, the total grid-based energy is 20% lower than before the mandatory telework schedule, which lasted from March 2020 – March 2022.

- The average site energy usage intensity (EUI), which measures energy per square foot based on the amount of energy produced onsite, was reduced by 49% in 2024 compared to 2003. From 2019 to 2023, LP used 14 kilo British thermal units per square foot (kBtu/ft2) less energy per square foot.

- In October 2022, CalPERS contracted with a third-party consultant to develop a Decarbonization Plan. This Plan was developed based on interviews, historical building data, and an onsite assessment. It also included a carbon assessment, using the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Level II energy audit, energy and use breakdown, a list of energy efficiency measures, and costs associated with construction, labor, and equipment upgrades.

- This plan would increase energy efficiency of LP and electrify it so that CalPERS would be net-zero, therefore using 100% renewable energy and eliminating almost all carbon emissions onsite.

- In 2024, CalPERS took steps in implementing this plan by approving an LED lighting project. This project will transition all existing fluorescent lighting to LED for the entire LP campus over the next two years. Future work may include the electrification of the Café and the elimination of natural gas on campus.

- Since 2018, CalPERS' landscapers have been using mostly zero-emission battery powered landscape equipment for the LP campus, further reducing GHG emissions.

Zero Net Energy

Site Zero Net Energy (ZNE) consists of a building consuming only the amount of energy that it produces onsite. Source ZNE includes energy used onsite, plus energy consumed while extracting, processing, and transporting fuel, as well as energy lost during transportation and distribution to the site.

- SMUD's SolarShares program continues to offset at least 50% of LP's electricity from a local solar field. In 2024, 66% of the source energy was from this program. This accomplishment is partly attributed to the reduced load on the building due to team members switching to a hybrid schedule.

- In 2024, the source EUI with SolarShares was 42 kBtu/ft2, which is 64% more efficient than the average pre-2020 nationwide source EUI, which was 116kBtu/ft2. This achievement is also influenced by the decreased building occupancy due to a hybrid work schedule.

Electric Vehicles and Charging Stations

There are four main types of electric vehicles (EV): pure electric, hybrid, plug-in hybrid, and hydrogen fuel cell. Pure electric vehicles run only on an electric battery. Plug-in hybrid vehicles require that a plug is inserted to charge the battery and still offer a gas option. Hybrid vehicles charge the electric battery while idle and do not require a plug to charge. Hydrogen fuel cell vehicles run only on hydrogen gas, which is converted into electricity. Electric vehicles are also called zero-emission vehicles because they do not produce any direct exhaust or tailpipe emissions.

- CalPERS currently has 27 light-duty fleet vehicles, including two pure electric vehicles and eight hybrid vehicles. In 2024, CalPERS replaced two Internal Combustion Engine (ICE) vehicles with two new ICE vehicles for its Legal Division and replaced one internal combustion engine (ICE) medium-duty vehicle with a light-duty EV for its Operations Support Services Division. Additionally, two ICE vehicles were removed from the Regional Office (RO) fleet without replacement in January 2025.

- In FY 2024/2025, CalPERS plans to replace two hybrid electric vehicles (HEV) and one ICE vehicle with three like-for-like vehicles for its Legal Division. Additionally, CalPERS plans to replace four ICE vehicles with four EVs for the RO fleet.

- In 2019, CalPERS installed a total of 69 Level 1 and Level 2 charging stations.

- CalPERS also provides infrastructure for ChargePoint® to offer Level 2 charging stations. These charging stations are equipped with charging cords that take approximately 3.5 hours to charge an 80-mile battery and eight hours to charge a 200-mile battery. The permitted charging time for Level 2 stations is four hours.

- Level 1 charging stations provide outlets for team members to plug in their own charging cord and takes approximately 16 hours to charge an 80-mile battery and 40 hours for a 200-mile battery. The permitted charging time for Level 1 stations is unlimited.

- CalPERS is monitoring SMUD's efforts to upgrade their grid infrastructure near CalPERS Headquarters, which will allow us to determine if additional EV charging stations can be added on campus.

LPW Data Center

The power usage effectiveness (PUE) ratio of a data center is a metric for its energy efficiency. A high PUE ratio indicates a data center that is less efficient. A lower PUE ratio indicates better energy performance and a PUE rating of 1.0 is considered perfect.

- The 2024 PUE ratio of the LPW Data Center was 1.93. This is higher than the 2023 PUE ratio of 1.92.

- From 2023 to 2024, CalPERS' Information Technology (IT) load increased by 1%.

- As IT equipment is removed and its information migrates to the cloud or is replaced with newer more efficient equipment, the PUE ratio will continue to increase as the facility's capacity is larger than the needs of the facility. Since 2018, the IT load has dropped 55% and the PUE ratio has increased 21%. Past studies have shown that it is not economically feasible to significantly reduce the PUE ratio of the data center.

- CalPERS' Property Management team continues to maximize the energy efficiency of the data center through no cost measures, including monthly inspections, temperature monitoring, and efficiency air flow management. Additionally, the migration of equipment to the cloud allowed some equipment to be turned off or removed, thereby saving energy.

- Without significant capital improvement projects, it will be difficult for CalPERS to further reduce its PUE ratio due to the overall size of the data center and the energy consumed to run and cool the area. Unless the overall hardware utilized by CalPERS is reduced and IT infrastructure is migrated to the cloud, there are limitations to what CalPERS can do to limit its PUE ratio.

Water Conservation

CalPERS continues to realize water savings and devise plans to advance LP's water efficiency through new technologies and implementation methods.

- In 2024, CalPERS used 26% less water compared to its 2010 baseline.

Water Management Plan

- In 2024, CalPERS engaged a third-party vendor to develop a Water Management Plan to further its efforts to reduce water consumption. This plan outlined strategies, actions, maintenance, and monitoring protocols necessary to meet the organization's water conservations goals and ensure a safe and healthy environment for all building occupants.

- In order to achieve a 15 to 20% reduction in water consumption from the 2020 baseline, the Water Management Plan recommended infrastructure upgrades and behavioral initiatives aimed at water conservation. The report highlighted the need to upgrade irrigation systems across campus and use innovative technologies for water use reduction such as stormwater capture for use with irrigation and grey water technologies across campus.

- In 2022, CalPERS voluntarily reduced its water consumption by 18% compared to 2020 in support of drought efforts. This was possible due to CalPERS' hybrid schedule which allowed for less people to be onsite and use less water.

- After March 2022, facility operations resumed as usual to help support a hybrid schedule. In combination with team members coming back onsite and an aging infrastructure, water consumption increased by 25.4% in 2024. This is compared to the 2020 baseline when most of the campus was working remotely. However, when compared to pre-pandemic water consumption in 2019, LP had a total water reduction of 5.5%.

- CalPERS is committed to continued efforts to reduce water consumption and has researched investments to its infrastructure such as upgrading irrigation sensors and conducting a facility wide Water Master Plan.

- CalPERS' Property Management team monitors monthly water conservation percentage status and notifies CalPERS of any significant variations.

- Water savings measures implemented since the last drought include but are not limited to:

    - Waterless Carpet Cleaning – The Janitorial team performs carpet cleanings using a method that does not require water.

    - Water Feature Shutoff – The day care center's water spray feature is turned off during the winter to prevent unnecessary water expenditure.

    - Irrigation – Efficient drip irrigation systems were installed along with implementing a modified schedule following local guidelines and best practices. Additionally, drip lines are regularly monitored for leaks.

- Window Washing – CalPERS reduced its window washing schedule from twice a year to once a year.

- Exterior Maintenance – All miscellaneous pressure washing was eliminated except on an as-needed basis.

WELL Health-Safety Rating for Facilities and Operations

The WELL Health-Safety Rating consists of a subset of relevant features from the WELL Building Standard™ (WELL™) adapted for facility operations and management. This certification serves as a symbol of CalPERS' extensive preparation and confidence in providing a safe workspace for its team members.

- CalPERS' first WELL Health-Safety rating was received in January 2022. CalPERS has retained a WELL Health-Safety certification every year since and will reapply again for renewal.

- This third-party review process ensures integrity and consistency, promoting leadership, and a commitment to health and well-being.

- WELL Health-Safety encourages a healthy work environment. A study from Washington State University has shown that adding plants to a workplace boosts productivity and general wellness around mental health. CalPERS hosts hundreds of indoor and outdoor plants at our workplace to increase the wellness of our team members.

Climate Adaptation

In 2019, CalPERS hired a third-party contractor, Det Norske Veritas Germanischer Lloyd (DN VGL), to perform a B-READY Building Resilience Assessment for LP which identified the frequency and scale of climatic events.

The B-READY assessment covered a wide range of climatic events such as extreme heat, drought, precipitation, air pollution, flooding, wildfires, and earthquakes. The results showed that drought and heatwaves are the climatic events most likely to affect CalPERS facilities. DN VGL provided a findings report which facilitated internal discussions to determine actions that can be taken to mitigate damage or disruption and enhance the well-being of team members.

- In recent years, as a follow up to the B-READY assessment, the Cooling and Heating Systems Temperature Risk Assessment and Base Flood Elevation was conducted. The study allowed the mitigation measures to be further evaluated to determine the ability of the heating, ventilation, and air conditioning systems to provide occupant comfort under extreme climate conditions including flooding.

- The Flood Evaluation and Temperature Extreme Evaluations results are as followed:

    - Flood Evaluation

- The LPN electrical room, located in the below grade garage, was identified as most vulnerable to flooding. There are measures in place, such as drains and supplies for a weir, to block waterflow if a major event were to occur.

- The LPEW central cooling plant, located on garage level 2, was identified as the most vulnerable to flooding. There are provisions to install weirs to the parking garage entrances to block water in the case of a major event. It has been determined as impractical to move the existing equipment to a higher level.

- Extreme Temperature Evaluation

  - LPN has sufficient heating and cooling capacity to handle extreme cooling and heating events.

  - LPEW has the heating and cooling capacity to handle typical peak temperatures but may struggle with extreme temperatures over 105ºF or below 30ºF.

  - As the current equipment reaches end of life, replacement equipment and capacity will be further evaluated.

Waste Management

CalPERS waste management program is part of its broader sustainability efforts to reduce environmental impact through proper waste diversion practices and waste reduction strategies.

Organic Waste

Examples of organic waste are food, landscape trimmings, and food-soiled paper.

- In 2024, LP disposed an average of 3 cubic yards (cy) of organic waste per week, which is recycled through Atlas Disposal and Carson Landscaping.

- Of the 158 cy of organic waste disposed in 2024, Atlas Disposal hauled 18 cy of organic waste to an organics facility for composting into soil which can be used to improve plant growth. 140 cy was composted by Carson Landscaping and used for soil repurposing.

Commercial Solid Waste

Commercial solid waste includes all types of solid waste, organic and non-organic.

- In 2024, CalPERS created 4.6 tons of commercial solid waste per week, 57% of this was diverted from the landfill through recycling and composting.

Food Waste Rescue

- The Café vendor, Compass Group USA, continues their partnership with The Imperfectly Delicious Produce Program, which utilizes fruits and vegetables that are usually discarded due to slight cosmetic imperfections, but are still suitable for consumption.

- In 2024, CalPERS saved 6,370 gallons of fresh water and 245 pounds of produce that would have otherwise gone to waste had the produce been discarded. Instead CalPERS was able to use the imperfect produce for its on-site café.

Campus Wide Waste Audit

- Beginning July 2024, CalPERS began a series of campus wide waste audits that will span over two years and occur every 6 months. The goal of this effort is to determine composition and quantities of waste being generated, measure effectiveness of existing waste management systems, and identify opportunities for improving waste management systems and strategies.

- The first audit analyzed nearly 800 pounds of landfill material, 400 pounds of recycling material, and 136 pounds of organics. By weight, the landfill category consisted of 26.7% compostable paper and 25.7% food materials that could be diverted from the trash. The recycling stream found a 30% contamination rate with plastic containers, cold cups, lids, and chip bags, with utensils being the largest culprit. The organics stream had the least amount of contamination.

- Based off results from the first audit, CalPERS implemented a new protocol that redirected all bathroom trash bins containing paper towels to be composted rather than sent to the landfill. Subsequent education, changes in signage, and team member engagement regarding this new protocol, aim to increase diversion.

Recycling

- In 2024, CalPERS' waste diversion from landfills was approximately 52%.

- CalPERS continues to operate a comprehensive waste management program throughout the enterprise. The Café's recycling program is in place and waste disposal education is available for team members on CalPERS' intranet. Additionally, recycling in all campus breakrooms includes a separate receptacle for composting waste.

- CalPERS has a designated Sustainability Specialist, who continues to annually review the waste disposal process, including recycling and compost materials, signage, receptacles, and training and education.

Environmental Preferable Purchasing

CalPERS tracks the recycled content for all items it purchases throughout the year in specific categories such as Metal, Paper, Printing and Writing Paper, and Plastic. For FY 2023-24,

CalPERS continued to work towards purchasing sustainable products whenever possible where fitness and quality requirements are met with no more than 10% greater cost.

- Total purchases for recycled content in these categories were: 71% of Metal Products, 84% of Paper Products, 70% of Printing and Writing Paper, and 51% of Plastic Products.

- CalPERS' annual audit includes all purchases made by its Property Management company. Due to its various needs, a product made with recycled content isn't always feasible and/or available. The Property Management company is committed to the program and continues to work on increasing its sustainable purchasing.

- In 2024, CalPERS' Sustainability Specialist continued to monitor, educate, and encourage purchasing products with as high of a recycled content when possible.

Conclusion and Next Steps

Overall, CalPERS has maintained awareness and action of the latest green technology and opportunities. Providing educational engagement and sharing CalPERS' globally recognized sustainability initiatives and accomplishments empower team members to practice green habits at work, home, and in their community. Our agency's current sustainability goal is to continue project discussions and implement approved initiatives in the Decarbonization Plan for LP to move towards electrification and away from the use of natural gas. The Sustainability Team will remain engaged with team members and stakeholders, as well as internal and external parties, to do our part in reducing our footprint and protecting the environment.

For any questions regarding the initiatives and projects covered in this Sustainability Highlights Report, please reach out to the CalPERS Sustainability Operations Program.

Thank you.

Attachment: CalPERS' 2024 Sustainability Fun Facts

Attachment 1

CalPERS' 2024 Sustainability Fun Facts

The following sustainability fun facts tie directly to information stated in the 2024 Sustainability Highlight Report. They offer insight about CalPERS' sustainable efforts and how our contributions help to preserve the environment.

1. **CalPERS' Lincoln Plaza headquarters are LEED® certified. As of 2024, both Lincoln Plaza East/West (LPEW) and Lincoln Plaza North (LPN) are Gold**.

   LEED® certified buildings have 25% lower energy use and reduce operational costs by 19% compared to the national average.

2. **LPEW received an Energy Star score of 85. This means that LPEW is more energy efficient than 85% of similar buildings nationwide.**

   Energy Star certified buildings, compared to buildings that are not Energy Star Certified, use 35% less energy.

3. **LPN received an Energy Star score of 75. This means that LPN is more energy efficient than 75% of similar buildings nationwide.**

   Energy Star certified buildings, compared to buildings that are not Energy Star Certified, cost $0.54 less per square foot to operate.

4. **LPN and LPEW recertified for WELL and achieved the Health-Safety Rating for the third consecutive year. This shows CalPERS commitment to providing a healthy and safe environment for their team members.**

   According to survey findings, a WELL certified building showed nearly a 30% improvement in overall satisfaction in the workplace.

5. **CalPERS received a WELL Health-Safety Rating in 21 features that promotes human health and safety, three more features than the previous year! WELL Health-Safety features include categories ranging from emergency preparedness programs on site to air and water quality management.**

   A WELL certified building results in a 10% increase in improved mental health and 2% increase in better overall physical health.

6. **Lincoln Plaza used 26% less water compared to the 2010 baseline.**

   That's enough water to fill 309 average sized residential swimming pools or 10 Olympic sized pools.

7. **Sixty-six percent of Lincoln Plaza's electricity, which is the equivalent to 9.3 million kilowatt-hours, came from a local field through SMUD's SolarShares program**.

   A 2025 Toyota Prius could drive approximately 21.5 million miles on 9.3 million kilowatt-hours. You can go to the moon and back 45 times!

8. **LPEW and LPN have a total of 69 Level 1 and Level 2 electric vehicle charging stations.**

   An electric vehicle driver can save on average $700 per year on gasoline compared to combustion engine vehicle drivers.

9. **CalPERS' Greenhouse Gas (GHG) emissions were reduced by 5,395 metric tons or 83% when compared against the 2010 baseline.**

   The reduction is equal to 1,172 less cars driven annually. In another example, the reduction is equal to 742 less homes using electricity for one year.

10. **Lincoln Plaza created an average of 3 cubic yards of organic waste per week, which is recycled through Atlas Disposal and Carson Landscaping.**

    Over a year's time, this is equivalent to 107,916 pounds of organic waste. GHG emissions from organic waste are reduced by more than 50% when properly composted.

11. **CalPERS diverted 57% or 140 tons of solid waste from the landfill through recycling and composting.**

    This reduced carbon dioxide emissions by 772 tons which is the equivalent of the electricity consumption of 502 households.

12. **There were 158 cubic yards of organic waste from the Café and Carson Landscaping that was hauled to an organics facility for composting soil that can later be used to improve plant growth.**

    Food and other organic materials sent to the landfill decompose and produce methane. Composting reduces the production of methane which is over 70 times more potent than carbon dioxide over a 20-year span.

13. **CalPERS saved 6370 gallons of fresh water and 245 pounds of produce due to our enrollment in The Imperfectly Delicious Produce Program that would have otherwise gone to waste had the produce been discarded.**

    The Café vendor, Compass Group USA, continues their partnership with The Imperfectly Delicious Produce Program, which utilizes fruits and vegetables that are usually discarded due to slight cosmetic imperfections, but are suitable for consumption.

14. A study from Washington State University has shown that adding plants to a workplace boosts productivity and general wellness around mental health.

CalPERS hosts hundreds of indoor and outdoor plants at our workplace to increase the wellness of our team members.