

# Sustainability Roadmap 2024-2025

## CalPERS

Sustainability Master Plan  
and Biennial Progress Report on Legislative  
Sustainability Mandates and the  
Governor's Sustainability Goals  
for California State Agencies



California Public Employees' Retirement System  
Gavin Newsom, Governor

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# CALPERS

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## Sustainability Roadmap 2024-2025

Reshmi Prasad  
Erin Tiernan-Lang  
**Primary Authors**

Kelly Lombardo  
**Staff Services Manager I**

Doug Hoffner  
**Executive Director**

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## EXECUTIVE SUMMARY

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CalPERS is committed to advancing sustainability across all operations by reducing greenhouse gas emissions, conserving resources, and aligning with the Governor's sustainability goals and legislative mandates. The 2025 Sustainability Roadmap highlights significant progress in the areas of climate adaptation, energy efficiency, efforts related to decarbonization, water conservation, sustainable operations, waste diversion, fleet electrification, environmentally preferable purchasing, and employee engagement.

Through the 2018 B-READY climate risk assessment and ongoing infrastructure investments, CalPERS continues to enhance resilience against extreme weather while maintaining operational continuity through its Enterprise Business Continuity Plan. CalPERS recognizes that climate change poses significant risks to its operations, facilities, and workforce due to rising temperatures, wildfire smoke, heavy precipitation, and potential flooding. These hazards threaten the continuity of essential services, employee health and safety, and key facility infrastructure. CalPERS will continue to evaluate climate risks to its facilities and assess potential impacts on surrounding communities.

Zero-emission vehicles are being incorporated into the CalPERS fleet to reduce greenhouse gas emissions and support statewide operations. The department's mission requires vehicles for in-person member services, training, investigations, and equipment transport across diverse geographic and operational conditions. To support this transition, CalPERS has begun integrating zero-emission and hybrid vehicles and has deployed telematics to monitor vehicle use, idling, and overall efficiency. Due to operational and confidentiality requirements, battery electric vehicles are not currently feasible for all fleet uses; however, long-term planning includes transitioning vehicles to battery electric models and plug-in hybrids by 2035 where operationally appropriate. These efforts support statewide transportation sustainability goals while maintaining reliable service delivery.

The Lincoln Plaza (LP) site is diverse, containing a full-service member support center, a 15,000+ square-foot data center, and amenities such as a café, childcare facility, and fitness center. The largest share of energy consumption stems from HVAC systems essential to occupant comfort and operational continuity. Lighting, plug loads, and data center equipment represent the next largest categories. Natural gas is used primarily for water and space heating, while electricity powers most campus operations. To manage energy demand and align with statewide sustainability goals, CalPERS has implemented an advanced building management system, participates in demand response

programs, and is pursuing major system upgrades over the next five years to reduce energy use, improve operational efficiency, and progress toward Zero Net Energy (ZNE) performance.

As part of the five-year update, CalPERS will continue to explore and evaluate opportunities for decarbonizing its buildings, including electrifying gas-dependent systems, transitioning to high-efficiency electric equipment and optimizing building systems. These strategies support progress toward statewide carbon reduction targets and strengthen CalPERS' long-term plan to achieve lower operational emissions while ensuring reliable service delivery for members.

CalPERS is acutely aware of water conservation needs while still supporting 2,000 daily occupants and nearly 200,000 square feet of interior and exterior landscaped grounds. CalPERS' water conservation efforts focus on operational efficiency, landscape management, and data-driven monitoring of the water-energy nexus. These measures support statewide conservation goals while ensuring resilience during droughts and water shortages.

In addition to water conservation, CalPERS aims to increase waste diversion by composting and recycling the majority of waste generated onsite. Through participation in the Chefs to End Hunger program, edible food is recovered and redirected away from landfills. Additional waste reduction efforts include participation in the Department of General Services' Surplus Program and internal reuse programs that repurpose office furniture and supplies. Unique campus operations such as the café, landscaping services, and centralized procurement create opportunities for targeted diversion and reuse. These programs reflect CalPERS' commitment to environmental stewardship, responsible resource management, and compliance with California's recycling and organics diversion regulations.

CalPERS continues to demonstrate strong stewardship in the operation and maintenance of its facilities, achieving LEED Gold across all LP buildings. CalPERS manages long-term lease agreements and mitigates location inefficiencies through telework, hybrid work schedules, and ridesharing programs. Overall, CalPERS remains committed to sustainable building operations, occupant well-being, and responsible long-term maintenance of its facilities portfolio.

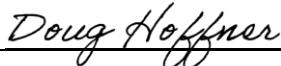
Procurement practices support sustainability primarily through participation in the State Agency Buy Recycled Campaign (SABRC), with an emphasis on purchasing products that meet recycled-content requirements. SABRC criteria are incorporated into purchasing decisions, and procurement staff receive guidance to help identify compliant items whenever possible. A catalog of frequently purchased SABRC-compliant goods and the use of a Virtual Office

Supply Room further support reuse and waste reduction, reinforcing responsible resource management across the organization.

Funding opportunities are evaluated to support sustainability-related projects, including energy efficiency upgrades, potential decarbonization-related efforts, water conservation measures, waste management improvements, and procurement initiatives. Priority projects and planning efforts help inform future funding needs across facilities, fleet, and operations. These evaluations support long-term planning aligned with statewide sustainability goals.

Public education and outreach efforts are supported through the CalPERS Sustainability webpage, which provides updates on annual achievements and ongoing environmental initiatives. The department also hosts an onsite Earth Month event for team members that features local vendors and offers education on a variety of sustainability programs and initiatives. These activities strengthen internal awareness and encourage team members to bring sustainability practices into their homes and communities.

Lastly, CalPERS demonstrates its dedication to transparency and stakeholder education through its external Sustainability webpage, which highlights annual achievements and underscores its leadership in environmental stewardship across agencies and throughout California. CalPERS also shares updates and educational content through its social media platforms, further engaging the public and raising awareness about sustainability initiatives and performance. Looking ahead, CalPERS will continue to evaluate and implement actions and projects that support progress toward decarbonization, electrification, and climate resilience across its facilities and operations, supporting statewide sustainability goals and ensuring long-term environmental and operational benefits for its members and the broader community.

  
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Doug Hoffner

CalPERS, Chief Operating Officer

# CHAPTER 1 - CLIMATE CHANGE ADAPTATION

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## Department Mission and Climate Change Adaptation

The California Public Employees' Retirement System (CalPERS) is a large organization serving over 2.3 million people, including active members, retirees, and their beneficiaries, by providing essential pension and health retirement services. Its headquarters, Lincoln Plaza (LP), is located in downtown Sacramento and spans over 1 million square feet of Class A office space across two contiguous blocks: Lincoln Plaza North (LPN) at 400 P Street and Lincoln Plaza East/West (LPEW) at 400 Q Street. The facility includes an onsite café, retail sandwich and coffee shops, a Trade Room, a fully operational mailroom, a 13,000-square-foot data center, and employs more than 2,800 team members. CalPERS recognizes that climate change poses significant risks to its operations, facilities, and workforce, particularly from rising temperatures, wildfire smoke, heavy precipitation, and potential flooding, prompting the need for proactive measures to address these challenges.

CalPERS continues to invest in infrastructure improvements and climate adaptation measures to strengthen its ability to deliver uninterrupted services. These efforts are designed to protect the health and safety of its facilities, workforce, and members, while ensuring long-term operational resilience in the face of a changing climate. CalPERS demonstrates its commitment to sustainability, operational continuity, and the well-being of its employees and the communities it serves.

## Climate Change Risks to Facilities

### Climate Change Risk Process:

Climate Risk Assessment completed. See Appendix I.

LPN achieved the 75th percentile, while LPEW achieved the 83rd percentile nationwide based on energy performance, operating at an advanced level of efficiency and featuring passive envelope elements that mitigate the impact of rising temperatures compared to traditionally designed facilities. Both buildings were designed with heat reduction features, drought-tolerant landscaping, and amenities to reduce the urban heat island effect on facility operations, building occupants, and the surrounding community. However, major flooding or extended power outages in downtown Sacramento caused by extreme climate events could temporarily disrupt operations. In such cases, critical operations would be relocated until the facilities are restored. CalPERS has an Enterprise Business Continuity Plan in place to address these scenarios, ensuring all business

operations can resume at alternate locations if necessary.

To address the challenges posed by climate change, CalPERS conducted a B-READY Building Resilience Assessment in 2018, hiring a third-party contractor, Det Norske Veritas Germanischer Lloyd (DN VGL), to evaluate the frequency and scale of climatic events that could impact LP. The assessment covered a wide range of risks, including air pollution, extreme heat, drought, flooding, extreme precipitation, wildfires, and earthquakes, and identified drought and heatwaves as the most likely climate impacts affecting operations. Based on the findings, CalPERS implemented several upgrades to enhance resilience, including high-efficiency boilers and chillers to optimize energy use and reduce emissions, upgrading to MERV 13 filtration to improve air quality, enhancing landscaping to mitigate urban heat island effects, and adopting water-saving measures to address drought conditions and ensure sustainable water usage. Additionally, an Enterprise Business Continuity Plan was established to ensure essential operations can continue even if LP is disrupted, and operations must be moved offsite. DN VGL provided a detailed report for CalPERS to review and determine actionable steps to mitigate damage, reduce disruption, and enhance tenant well-being, with further in-depth studies planned to assess feasibility and guide future efforts.

This Climate Change Adaptation Plan is a reference tool CalPERS will continue to review periodically regarding potential risks from climate change for their existing facilities, as no new facilities are currently planned.

## Assessing Risk from Changing Extreme Temperatures:

**Table 1.1: Top 5-10 Facilities that Will Experience the Largest Increase in Extreme Heat Events**

Facility Name	Extreme heat threshold (EHT)°F	Average # of days above EHT (1961-1990)	Average # of days above EHT (2031-2060)	Change from Historical to projected average # of days above EHT (2031-2060)	Avg. # days above EHT (2070-2099)	Change from historical to projected average # of days above EHT (2070-2099)
Lincoln Plaza North	103.9	4	17	13	24	20
Lincoln Plaza East/West	103.9	4	17	13	24	20

**Table 1.2a: Top 5-10 Facilities Most Affected by Changing Temperature – Annual Mean Max. Temp**

Facility Name	Historical Annual Mean Max. Temp. (1961 – 1990)	Annual Mean Max. Temp. (2031 – 2060)	Change from Historical to Annual Mean Max. Temp (2031-2060)	Annual Mean Max Temp. (2070-2099)	Change from Historical to Annual Mean Max. Temp (2070-2099)
	Lincoln Plaza North	74.2	81.4	7.2	83.7
Lincoln Plaza East/West	74.2	81.4	7.2	83.7	9.5

**Table 1.2b: Top 5-10 Facilities Most Affected by Changing Temperature - Annual Mean Min Temp**

Facility Name	Historical Annual Mean Min. Temp. (1961 – 1990)	Annual Mean Min. Temp. (2031 – 2060) °F	Change from Annual Mean Min. Temp (2031-2060)	Annual Mean Min. Temp. (2070-2099) °F	Change from Annual Mean Min. Temp (2070-2099)
	Lincoln Plaza North	71.1	75.5	4.4	77.2
Lincoln Plaza East/West	71.1	75.5	4.4	77.2	6.1

**Assessing Risk from [Heating Degree Days \(HDD\)](#) and [Cooling Degree Days \(CDD\)](#)**

**Table 1.3a: Top 5-10 Facilities that will be Most Impacted by Projected Changes in Heating Degree Days (HDD)**

Facility Name	Heating Degrees 1961-1990	Average Modeled Heating Degrees (year), 2031-2060	Change in Heating Degree Days Historical to Mid-Century	Average Modeled Heating Degrees (year), 2070-2099	Change in Heating Degree Days Historical to End-Century
	Lincoln Plaza North	2,588	1,970	618	1,713

Facility Name	Heating Degrees 1961-1990	Average Modeled Heating Degrees (year), 2031-2060	Change in Heating Degree Days Historical to Mid-Century	Average Modeled Heating Degrees (year), 2070-2099	Change in Heating Degree Days Historical to End-Century
Lincoln Plaza East/West	2,588	1,970	618	1,713	-875

**Table 1.3b: Top 5-10 Facilities that will be Most Impacted by Projected Changes in Cooling Degree Days (CDD)**

Facility Name	Cooling Degrees 1961-1990	Average Modeled Cooling Degrees (year), 2031-2060	Change in Cooling Degree Days Historical to Mid-Century	Average Modeled Cooling Degrees (year), 2070-2099	Change in Cooling Degree Days Historical to End-Century
Lincoln Plaza North	1,264	1,955	691	2,317	1,053
Lincoln Plaza East/West	1,264	1,955	691	2,317	1,053

### Reporting Narrative on Tables 1.3b and 1.3c: HDD and CCD

A Heating Degree Day (HDD) is defined as the number of degrees by which the daily average temperature falls below a reference temperature. The reference temperature is typically 65°F, although different utilities and planning entities may use alternative reference temperatures. This reference temperature generally represents the threshold above which space heating is not needed. The daily average temperature is calculated as the average of the maximum and minimum daily temperatures. Similarly, a Cooling Degree Day (CDD) is defined as the number of degrees by which the daily average temperature exceeds a reference temperature. As with HDDs, the reference temperature for CDDs is typically 65°F, though it may vary depending on the utility or planning entity. This reference temperature represents the threshold below which space cooling (e.g., air conditioning) is generally not required.

Table 1.3 illustrates a trend in which the number of heating degree days decreases while the number of cooling degree days increases over time. This trend aligns with the results shown in Table 1.1, which indicate rising mean maximum and mean minimum temperatures. Both tables demonstrate that Sacramento's temperatures are increasing over time.

An increasing number of cooling degree days signifies that there will be more days requiring mechanical cooling, which in turn leads to higher electricity consumption. To mitigate the impact of rising cooling degree days, CalPERS has implemented measures such as reducing solar heat gain and minimizing the urban heat island effect to lower cooling loads and energy consumption. Additionally, CalPERS is actively working on updating boilers and chillers across all buildings to enhance the efficiency of cooling systems, thereby reducing the amount of energy required for cooling.

### Plan to Mitigate HDD and CDD

#### Planning Outline: PO1.a: Plan for Top 5-10 Facilities HDD and CDD Mitigation

Facility Name	Abbreviated Mitigation Plan 2030
Lincoln Plaza North	No Plan
Lincoln Plaza East/West	No Plan

#### Planning Narrative on PO1.a: Mitigate HDD and CDD

The HDD and CDD increase across both mid-century and late century is almost a 50% increase. This will put a significant burden on existing mechanical systems. All future upgrades across mechanical systems will need to take into account the increase in HDD and CDD, the Climate Risk Assessment, as well as plan for this across all budget projections and timelines.

### Assessing Risk from Urban Heat Islands

**Table 1.3: Facilities in Urban Heat Islands**

Facility Name	Located in an Urban Heat Island (Yes or No)	Sq. ft. of Surrounding Hardscape or Pavement if greater than 5000 sq. ft.
Lincoln Plaza North	Yes	77,386
Lincoln Plaza East/West	Yes	49,127

#### Reporting Narrative on Table 1.4: Urban Heat islands

There are three facilities located within the urban heat island (UHI) zone in downtown Sacramento that are part of the LP campus which are connected by an underground parking garage. The UHI effect in Sacramento results in an average temperature increase of 7.1°F, which significantly impacts facility operations by raising cooling demands, increasing energy costs, and placing additional thermal stress on infrastructure. These elevated temperatures may also affect occupant comfort and productivity. To mitigate these impacts,

future planning efforts could incorporate more greenery across campus, helping to reduce surface temperatures and improve environmental performance.

### Planning Outline for Urban Heat Islands Mitigation:

#### Planning Outline: PO1.b: Plan for Urban Heat Islands Mitigation

Facility Name	Mitigation or Plan	Est. Implementation Date
Lincoln Plaza North	No Plan	Unknown
Lincoln Plaza East/West	No Plan	Unknown

### Planning Narrative for PO1.b: Urban Heat Islands Mitigation

While LP buildings can be impacted by the Urban Heat Island effect, no current plan is in place for this impact.

## Assessing Risk from Changes in Precipitation

**Table 1.4: Top 5-10 Facilities that will be Most Impacted by Projected Changes in Precipitation**

Facility Name	Annual Mean Max. Precip. (1961 – 1990) (in/yrs.)	Annual Mean Precip. (2031 – 2060) (in/yrs.)	Percent Change by mid-century	Annual Mean Precip. (2070 – 2099) (in/yrs.)	Percent change by end of century	Extreme Precip (1961-1990) (in/day)	Extreme Precip (2031-2060) (in/day)	Extreme Precip (2070-2090) (in/day)
Lincoln Plaza North	18.0	19.0	5.6	19.5	8.3	3.0	3.0	5.0
Lincoln Plaza East/West	18.0	19.0	5.6	19.5	8.3	3.0	3.0	5.0

### Reporting Narrative on Table 1.5: Precipitation Impacts

The impacts of climate change on California's future precipitation levels are somewhat less certain than the impacts on temperature. However, California is expected to retain its Mediterranean climate pattern (dry summers and wet winters), but more precipitation is expected to fall as rain rather than snow, resulting in larger storms that could cause flooding. These changes will also lead to earlier and higher runoff volumes, as well as a decrease in snowpack.

Sacramento has experienced heavy rainfall during El Niño years. Heavy

precipitation can lead to flash flooding, overwhelmed drainage systems, sewer overflow or backflow, landslides, and disruptions to transportation and communication. Flooding can become a regional issue, disrupting transportation and building occupancy, and in some cases requiring extensive remediation.

Table 1.5 provides information predicting how LP will be affected by an increase in precipitation. The annual mean precipitation for 1961 to 1990 was 18 inches. By the end of the century, the annual mean is expected to be 19 inches, representing a six % increase. While increased precipitation does not directly affect the facility's operation or occupant health, the potential side effects of large storm events, such as flooding, could significantly impact operations.

### Planning Outline to Mitigate Precipitation Changes

#### Planning Outline PO1.c: Plan for Top 5-10 Facilities Most Impacted by Projected Changes in Precipitation

Facility Name	Extreme Precipitation (2030) Plan or strategy
Lincoln Plaza North	No Plan
Lincoln Plaza East/West	No Plan

#### Planning Narrative on PO1.c: Precipitation Changes Mitigation Plan

LP is located near the Sacramento River. The Sacramento Climate Action Plan notes that the Sacramento River is already at peak capacity, and extreme storms are expected to increase the likelihood of flooding in the future. Lincoln Plaza has measures in place to prevent minor flooding, such as walls and weirs designed to protect the building. One of the essential equipment rooms, the electrical room, is located below grade and is critical for keeping the building operational. Another essential room, the data center, is located on the fourth floor and, with advanced warning, could be powered down prior to a flood event.

In the event of heavy flooding, the CalPERS property management team has established procedures to safely power down facility operations within 10 hours, or within two hours if immediate action is required. Additionally, CalPERS has a restoration procedure in place to assess and repair damage, including damage to windows or the façade caused by strong currents and debris. If the risk of flooding becomes a recurring issue, CalPERS may reevaluate the location of its headquarters.

A change in precipitation patterns can also lead to droughts, which are projected to become longer and more frequent as temperatures rise. Reduced

rainfall can result in water scarcity, potentially impacting critical groundwater basins and triggering county or state water shortage contingency plans. These plans typically include water curtailment goals, such as reducing water usage for landscaping and imposing moratoriums on water-intensive cleaning processes.

The B-READY assessment highlighted CalPERS' existing water-saving measures, including adaptive landscaping and low-flow fixtures. In addition, planned drought measures can be implemented if a water shortage contingency plan is enacted. Long-term potential measures include upgrading water fixtures and installing xeriscape landscaping to further reduce water usage.

## Assessing Risk from Sea Level Rise

**Table 1.5: All Facilities at Risk from Rising Sea Levels**

Facility Name	Tide Chart Region	2050 Water Level (ft)	Exposed in 2050? (y/n)	2100 Water Level (ft)	Exposed at 2100? (y/n)
Lincoln Plaza North	Delta	0	N	0	N
Lincoln Plaza East/West	Delta	0	N	0	N

### Reporting Narrative on Table 1.6: Sea Level Rise Impacts

Increasing global temperatures are contributing to rising sea levels, which are expected to lead to the inundation of coastal areas and increased flooding due to storm surges. The California Ocean Protection Council (OPC) has issued the *State of California Sea Level Rise Guidance* (Guidance) for state agencies, outlining the levels of sea level rise to consider in planning and decision-making. The Guidance provides estimates of sea level rise for the California coast based on all active tide gauges and a range of emission trajectories, as detailed in the report *Rising Seas in California: An Update on Sea Level Rise Science*. It also recommends projections for use in low, medium-high, and extreme risk aversion scenarios.

The Sacramento River is currently at peak capacity and could be impacted by sea level rise caused by intense storms, extreme precipitation, or runoff from early snowpack melt. LP is located in an area protected by levees designed to withstand 100-year flood elevations. However, flooding could be a regional issue that could disrupt transportation, limit the ability to occupy the building, and, in some cases, require remediation efforts.

According to the Cal-Adapt Sea Level Rise Climate Tool, the Sacramento-San Joaquin Delta will be affected by sea level rise. The effects of sea level rise on

the Delta will, in turn, impact the sea level of Washington Lake in West Sacramento, which is connected to the Sacramento River. Under scenarios ranging from zero sea level rise to a more drastic 1.41 meters of rise, the maximum inundation depth during a likely 100-year storm could exceed four meters. As a preventative measure, locks are in place to separate Lake Washington from the Sacramento River.

- [State of California Sea-Level Rise Guidance](#)
- [Rising Seas in California: An Update on Sea Level Rise Science](#)

### Planning Outline to Mitigate Sea Level Rise Impacts

#### Planning Outline PO1.d: Planning for Sea Level Rise impacts Mitigation

Facility Name	Tide Chart Region	Plan 2030?
Lincoln Plaza North	Delta	No Plan
Lincoln Plaza East/West	Delta	No Plan

### Planning Narrative on PO1.d: Sea Level Rise Impact

CalPERS will continue to monitor sea level rise impacts in the future by taking into account future infrastructure impacts related to any potential flooding. Currently, there is statewide protection in the form of a levee that is designed to protect LP in the event of a 100-year flood event.

## Assessing Risks from Wildfire

### Wildfire Threats by Fire Hazard Severity Zone

**Table 1.6: Top 5-10 Facilities Most at Risk to Wildfire Threats by Fire Hazard Severity Zone**

Facility Name	Fire Hazard Severity Zone Designation (low, medium, high, very high)
Lincoln Plaza North	Low
Lincoln Plaza East/West	Low

### Reporting Narrative on Table 1.7: Assessing Facilities most at Risk to Wildfire Threats by Fire Hazard Severity Zones

No facilities are at risk, however, based on the B-READY assessment, fire is not one of the top concerns for LP. Facility operations are more likely to be impacted by smoke from wildfires, resulting in reduced outdoor air quality. In the

case of poor air quality due to wildfire smoke, CalPERS has two significant strategies in place to maintain indoor air quality: minimizing the intake of outside air to reduce pollutant sources and using MERV 13 filters to limit pollutants entering the building. Additionally, CalPERS takes proactive steps to reduce the impact of poor air quality by following green building best practices, utilizing mechanical systems with particulate filters, and conducting semiannual indoor air quality testing.

As mentioned previously, in the worst-case scenario, the CalPERS Enterprise Business Continuity Plan provides a strategy for relocating building occupants until LP is able to resume normal operations.

**Planning Narrative on Table 1.7: Assessing Facilities most at Risk to Wildfire Threats by Fire Hazard Severity Zones**

NO FACILITIES AT RISK.

**Wildfire Threats as Measured by Impacts from Previous Wildfire Events**

**Table 1.7: Facilities Impacted by Previous Wildfire Events (Last 20 Years)**

Facility Name	Impact Category Choose an item.	Year of Impact	Fire Name
Lincoln Plaza North	No Impact	N/A	N/A
Lincoln Plaza East/West	No Impact	N/A	N/A

**Reporting Narrative on Table 1.8 Wildfire Threats as Measured by Impacts from Previous Wildfire Events.**

NO FACILITIES IMPACTED.

**Planning Outline PO1.e: Plan for Mitigating Wildfire Risk for Top 5-10 Facilities Most at Risk.**

NO FACILITIES AT RISK.

**Planning Narrative on PO1.e: Mitigating Wildfire Risk for Top 5-10 Facilities Most at Risk**

NO FACILITIES AT RISK.

**Understanding Climate Risk to Planned Facilities**

**Tables 1.8: a-g: Climate Risks to New Facilities**

**a.1 Annual Mean Max. Temperature**

Facility Name	Historical Annual Mean Max. Temp. (1961 – 1990)	Annual Mean Max. Temp. (2031 – 2060)	Change from Historical to Annual Mean Max. Temp (2031-2060)	Annual Mean Max Temp. (2070-2099)	Change from Historical to Annual Mean Max. Temp (2070-2099)
Lincoln Plaza North	74.2	81.4	7.2	83.7	9.5
Lincoln Plaza East/West	74.2	81.4	7.2	83.7	9.5

**a.2 Annual Mean Min. Temperature**

Facility Name	Historical Annual Mean Max. Temp. (1961 – 1990)	Annual Mean Max. Temp. (2031 – 2060)	Change from Historical to Annual Mean Max. Temp (2031-2060)	Annual Mean Max Temp. (2070-2099)	Change from Historical to Annual Mean Max. Temp (2070-2099)
Lincoln Plaza North	71.1	75.5	4.4	77.2	6.1
Lincoln Plaza East/West	71.1	75.5	4.4	77.2	6.1

**b. Annual Mean Max. Precipitation**

Facility Name	Annual Mean Maximum Precipitation (1961 – 1990) (in/yr.)	Annual Mean Precipitation (2031 – 2060) (in/yr.)	Extreme Precip (1961-1990) (in/day)	Extreme Precip (2031-2060) (in/day)
Lincoln Plaza North	18.0	19.0	3.0	3.0
Lincoln Plaza East/West	18.0	19.0	3.0	3.0

**c. Largest Increase in Extreme Heat Events**

Facility Name	Extreme heat threshold (EHT) °F	Average number of days above EHT (1961-1990)	Average number of days above EHT (2031-2060)	Increase in number of days above EHT
Lincoln Plaza North	103.9	4.0	17.0	13.0
Lincoln Plaza East/West	103.9	4.0	17.0	13.0

**d. Sea Level Rise**

Facility Name	Area (California Coast, San Francisco Bay, Delta)	Sea Level Rise 0.0 m	Sea Level Rise 0.5 m	Sea Level Rise 1.0 m	Sea Level Rise 1.41 m
Lincoln Plaza North	Delta	0	0	0	0
Lincoln Plaza East/West	Delta	0	0	0	0

**e. Wildfire Risks by Fire Hazard Severity Zone**

Facility Name	Current Fire Hazard Severity Zone (low, medium, high, very high)
Lincoln Plaza North	Low
Lincoln Plaza East/West	Low

**f. Facilities Impacted by Previous Wildfire Events (Last 20 Years)**

Facility Name	Impact Category Choose an item.	Year of Impact	Fire Name
NO NEW FACILITIES	N/A	N/A	N/A
NO NEW FACILITIES	N/A	N/A	N/A

**g. Risk from Heating Degree Days/Cooling Degree Days**

Facility Name	Heating/Cooling Degree Days (1961-1990) (HDD/CDD)	Heating/Cooling Degree Days (2031-2060) (HDD/CDD)
Lincoln Plaza North	2,588	1,978
Lincoln Plaza East/West	2,588	1,978

**Reporting Narrative for Tables 1.9a-g: Understanding Climate Risks to Planned Facilities**

NO NEW FACILITIES.

**Planning Narrative for Tables 1.9a-g: Understanding Climate Risks to Planned Facilities**

NO NEW FACILITIES.

**Understanding the Potential Impacts of Facilities on Communities**

**Reporting on Facilities located in Disadvantaged Communities**

**Table 1.9: Facilities Located in Disadvantaged Communities**

Facility Name	CalEnviroScreen Score	Located in a disadvantaged community? Yes/No
Lincoln Plaza North	68	Yes
Lincoln Plaza East/West	69	Yes

**Reporting Narrative for Table 1.10: Facilities in Disadvantaged Communities**

Table 1.6 shows that the CalEnviroScreen score for LP is between 68 and 69. This indicates that LP's status has changed since the previous Roadmap and is now located in a disadvantaged community.

Although LP houses the CalPERS Sacramento Regional Office (SRO), which includes a public counter for members, it does not provide resources to the general public. However, the facilities support the community by reducing carbon emissions through energy efficiency and green building practices. LP also follows occupant health best practices, such as quarterly maintenance of mechanical systems. Additionally, indoor air quality testing is conducted to ensure the air quality meets industry standards.

LP is located in an area with existing infrastructure and services that promote active transportation and the use of public transit, further contributing to reduced vehicle emissions. CalPERS will continue to evaluate potential measures to reduce climate vulnerability in the surrounding community.

**Planning Narrative for table 1.10: Facilities in Disadvantaged Communities.**

CalPERS has facilities located in a community identified as disadvantaged based on CalEnviroScreen scores. While CalPERS does not currently have a formal process to evaluate disparate impacts related to facility operations, the department recognizes the importance of understanding potential effects on surrounding communities.

CalPERS will look into opportunities to consider community and environmental impacts as part of ongoing facility planning and sustainability efforts. These considerations may help inform future planning approaches and support broader community resilience.

## New Facilities and Disadvantaged Communities and [Urban Heat Islands](#)

**Table 1.10: New Facilities and Disadvantaged Communities and Urban Heat Islands**

Facility Name	Located in a Disadvantaged Community (yes/no)	Located in an urban heat island (yes/no)
Lincoln Plaza North	Yes	Yes
Lincoln Plaza East/West	Yes	Yes

### Reporting Narrative on Table 1.11: New Facilities and Disadvantaged communities and Urban Heat islands

NO NEW FACILITIES.

### Planning Narrative on Table 1.11: New Facilities and Disadvantaged communities and Urban Heat islands

NO NEW FACILITIES in disadvantaged communities and urban heat islands.

## Integrating Climate Change into Department Funding Programs

**Table 1.11: Integration of Climate Change into Department Planning**

Name of Plan	Have you integrated climate?	Is a plan in progress?	If no, or in process, when will it be integrated?
No Plan	No	No	Unknown

### Reporting Narrative for Table 1.12: Integrating Climate Change into Department Planning Process

There is no plan to integrate climate change into the department planning process at this time; however, CalPERS and its Building Management team will continue to evaluate opportunities and projects where climate change considerations can be incorporated. While funding may pose a challenge, building infrastructure may also present limitations.

### Planning Narrative for table 1.12: Integrating Climate Change into Department Planning Process

LP is currently developing a five-year plan outlining projects that will be conducted in the coming years. A key focus of this plan will be sustainability

upgrades, including the addition of EV chargers, LED lighting retrofits, and improvements to reduce water usage. These initiatives aim to lower emissions and mitigate the negative effects of climate change.

## Community Engagement and Planning Processes

**Table 1.12: Community Engagement and Planning Processes**

**No community engagement in the planning process.**

Name of Plan	Does this plan consider impacts on vulnerable populations? Yes/No	Does this plan include coordination with local and regional agencies? Yes/No	Does this plan prioritize natural and green infrastructure? Yes/No
No plan	N/A	N/A	N/A

### Reporting Narrative for Table 1.13: Community Engagement and Planning Processes

CalPERS' community engagement is aligned with its role as a pension and health administrator and is primarily reflected through responsible facility management and sustainability practices. CalPERS will continue to evaluate opportunities such as landscaping improvements and water-saving measures, as part of its internal planning processes and ongoing stewardship of the Lincoln Plaza campus. These efforts support community engagement by improving the local environment, reducing resource demands, and contributing to neighborhood resilience, with select pilot projects considered for inclusion in the five-year plan. Key challenges to implementing these measures include budget constraints, and the difficulty of retrofitting green features into existing buildings and urban infrastructure.

### Planning Narrative for Table 1.13: Community Engagement and Planning Processes

CalPERS has not yet integrated community engagement or equity considerations into facility planning but recognizes the importance of evaluating potential impacts on vulnerable populations. Over the next 12 to 18 months, CalPERS will begin assessing equity impacts and coordinating with local and regional partners, including the City of Sacramento and SMUD, to align adaptation planning with community needs. CalPERS will evaluate opportunities such as expanded greenery and pilot projects considered for inclusion in the five-year plan. Challenges include limited staff capacity, competing budget priorities, and the need for coordination across multiple agencies. CalPERS will

develop a community and agency engagement plan within two years and establish a framework to prioritize green infrastructure within three years, ensuring these efforts are incorporated into future Roadmap updates.

## Climate Change Implementation Planning in Funding Programs

**Table 1.13: Climate Change Implementation Planning in Department Funding Programs**

NO FUNDING OR GRANT PROGRAMS.

Name of Grant or Funding Program	Have you integrated climate change into program guidelines? (Yes/No)	If no, Date it will be integrated?	Does this Funding Program consider impacts on vulnerable populations? (Yes/No)	Does this Funding Program include coordination with local and regional agencies? (Yes/No)
None	N/A	N/A	N/A	N/A

### Reporting Narrative for Table 1.14: Climate Change Implementation Planning in Funding Programs

NO GRANT OR OTHER FUNDING PROVIDED.

### Planning Narrative for Table 1.14: Climate Change Implementation Planning in Funding Programs

NO GRANT OR OTHER FUNDING PROVIDED.

## Measuring and Tracking Progress

### Reporting Narrative on Measuring and Tracking Progress

MEASURING AND TRACKING PROGRESS ACHIEVED.

### Planning Narrative on Measuring and Tracking Progress

MEASURING AND TRACKING PROGRESS ACHIEVED.

## CHAPTER 2- ZERO-EMISSION VEHICLES

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### Department Mission and Fleet

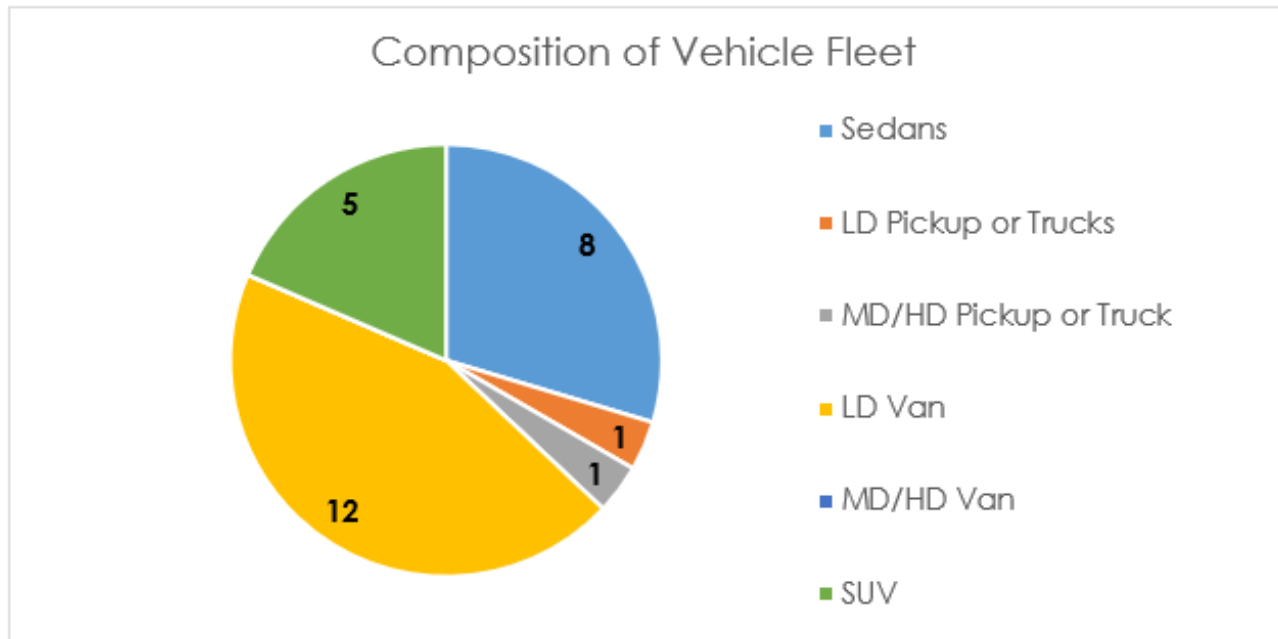
CalPERS' mission is to deliver retirement and health care benefits to its members and their beneficiaries. Across the enterprise, CalPERS team members perform critical work that fulfills the mission or supports the fulfillment of the mission. Some of this work requires travel, either locally within Sacramento or spanning across California. Therefore, CalPERS operates a fleet program, consisting of 27 vehicles, for the purpose of conducting official state business throughout the state. The fleet vehicles are used by three main areas: Regional Offices, Operations, and the Legal Office. The confidential nature of certain assignments, particularly within the Legal Office, necessitates vehicles that maintain an undercover identity while providing flexibility for extended fieldwork. Similarly, the Regional Office requires vehicles for routine appointments and outreach events, while Operations relies on vehicles to transport equipment and furniture between warehouses and facilities.

The environments in which CalPERS' vehicles operate vary. Most vehicles are used on paved roads in urban and suburban areas or highways for long-distance travel. However, certain assignments require travel to rural areas with rough terrain, such as field investigations or undercover surveillance in remote locations. This range of environments influences CalPERS' fleet composition, as vehicles must be capable of navigating both developed and less accessible areas.

Vehicle usage patterns are equally diverse. Regional Office vehicles are typically on the road for 22 hours per week, with many trips lasting less than one hour. Operations vehicles, which primarily transport furniture and equipment, are used for short trips and are on the road about two hours per week. Legal Office vehicles are on the road five days a week, with usage patterns dependent on the nature of field assignments. These varied use cases highlight the need for a fleet that can support both short trips and extended travel while meeting the unique demands of each role.

## Composition of Vehicle Fleet

**Graph 2.1: 2024 Composition of Vehicle Fleet**



## Fuel Types

### Reporting on Total Fuel Use by Fuel Type.

**Table 2.1: Total Fuel Purchased in 2023/2024**

Year	Fuel Type (Gallons)		Fuel Type (Gallons)
	Diesel	Gasoline	Renewable Diesel
2023	0	8,531	65
2024	0	8,557	27

### Reporting Narrative on Table 2.1: Fuel Type Selections

CalPERS has not established a formalized fossil fuel policy; however, established Fuel Card Procedures and Vehicle Operator Procedures are followed. These procedures outline the types of fuel allowed (and prohibited), as well as guidelines for fueling vehicles.

There have been no discussions regarding hydrogen fuel use since CalPERS does not operate hydrogen vehicles and has no plans to purchase them in the foreseeable future.

Although a formal fuel type policy is not currently planned, the need for such a policy will be evaluated, and appropriate next steps and timeframes will be identified if operational or regulatory requirements make it necessary in the future.

### **Planning Narrative on Table 2.1: Fuel Type Selections**

CalPERS is committed to reducing fleet emissions through strategic fuel type selection and vehicle transitions. As part of this effort, fossil fuel vehicles are being transitioned to zero-emission vehicles (ZEVs) to reduce emissions. Currently, the fleet includes one battery electric vehicle (BEV), as well as alternative fuel and hybrid vehicles.

For alternative fuel vehicles, CalPERS utilizes E85, a cleaner-burning option compared to traditional fossil fuels, which helps reduce greenhouse gas emissions. While E85 is not available at all fueling locations, a network of fueling stations has been established throughout the state to maximize its use whenever possible, supporting emission reduction goals.

To further reduce fleet emissions, CalPERS' focus is on transitioning Regional Office vehicles to BEVs as they qualify for replacement through the Department of General Services (DGS) leasing program, with the goal of completing this transition by 2028. Additionally, the Legal Office fleet is planned to transition to plug-in hybrid electric vehicles (PHEVs) by 2035.

## **Rightsizing the Vehicle Fleet**

### **Teleworking, Mission Changes, and Technology Changes**

#### **Reporting Narratives on Teleworking, Mission Changes, and Technology Changes**

Telework has had a minimal impact on vehicle usage across CalPERS, as field responsibilities remain consistent.

Within the Legal Office, telework has not affected field activities, as investigators continue to perform their duties primarily in the field, with state vehicles remaining actively utilized to support operational requirements.

Similarly, in the Regional Offices, telework has not significantly altered field operations. Team members adhere to rotating hybrid schedules to ensure sufficient coverage and timely support for field services, allowing CalPERS to effectively balance telework flexibility with operational needs.

Since telework has not significantly impacted fleet utilization, CalPERS' fleet

purchasing plan does not currently incorporate telework considerations, and no modifications are planned at this time.

NO MISSION CHANGES.

NO TECHNOLOGY CHANGES.

## **Telematics**

### **Telematics Implementation Status**

#### **Reporting Narrative on Telematics Implementation Status**

COMPLETED TELEMATICS IMPLEMENTATION.

#### **Planning Narrative for Telematics Data**

COMPLETED TELEMATICS IMPLEMENTATION.

## **Existing Fleet Description**

### **Light Duty Fleet Vehicles**

CalPERS' light-duty fleet supports the Regional Offices, Operations, and Legal Office. Typical fleet duties include in-person training classes, education seminars, emergency retirement appointments, confidential operations, and the transportation of furniture and equipment. These duties require travel across California. While most vehicles are operated on highway or city streets, there are instances where vehicles are operated in rural areas that may have unpaved roads or rough terrain.

Hours of operation vary greatly among the departments. Regional Office vehicles are typically on the road for 22 hours per week. Approximately 37% of these trips last less than one hour. The Operations team travels short distances between CalPERS' various warehouses and is typically on the road two hours per week, with most trips lasting less than one hour. Legal Office vehicles are typically on the road five days a week. Due to the recent installation of telematics on these vehicles, significant data on their total on-road hours is not yet available.

**Reporting On Total Miles Traveled**

**Table 2.2 Total Miles Traveled**

Year	2019	2020	2021	2022	2023	2024
Miles Traveled	344,775	173,626	106,154	163,739	203,372	211,142

**Reporting Narrative on Table 2.2: Total Miles Traveled**

The current annual mileage of the department's light-duty fleet is 211,142 miles. A significant decrease in mileage occurred in 2020 and 2021 due to the COVID-19 pandemic and subsequent stay-at-home orders. Since then, mileage has begun to increase as normal operations resume. However, the annual total remains more than 130,000 miles lower than pre-pandemic levels, largely due to the recent fleet reduction plan and an increase in virtual meetings.

Beginning in 2024, the Fleet Management Team implemented a fleet reservation process for the Sacramento Regional Office. This has given CalPERS better control of the local fleet and enabled team members to ensure equitable utilization across these vehicles. Additionally, this process allows CalPERS to identify opportunities to encourage team members to carpool when multiple individuals are traveling to the same event, further optimizing vehicle usage and reducing overall mileage. As ZEVs continue to be integrated into the fleet, this method will also allow CalPERS to ensure that the right type of vehicle is deployed.

Over the last three years, outlying Regional Offices have been reduced to one vehicle each. Through the fleet reservation process and telematics data, assessments will continue to ensure appropriate usage and make further reductions as necessary.

**Reporting On Miles Per Gallon**

**Table 2.3 Light-Duty Miles per Gallon**

Year	2019	2020	2021	2022	2023	2024
MPG	26.2	27.3	27.3	27.3	30.5	30.3

**Reporting Narrative on Table 2.3: Miles Per Gallon**

Over the past five years, the annual MPG of the department's light-duty fleet has shown a positive trend, increasing from 26.2 MPG in 2019 to 30.3 MPG in 2024. This improvement reflects ongoing efforts to modernize the fleet by eliminating older, less fuel-efficient vehicles and integrating hybrid vehicles (HEV) wherever feasible. The adoption of HEVs, combined with the strategic use of telematics to

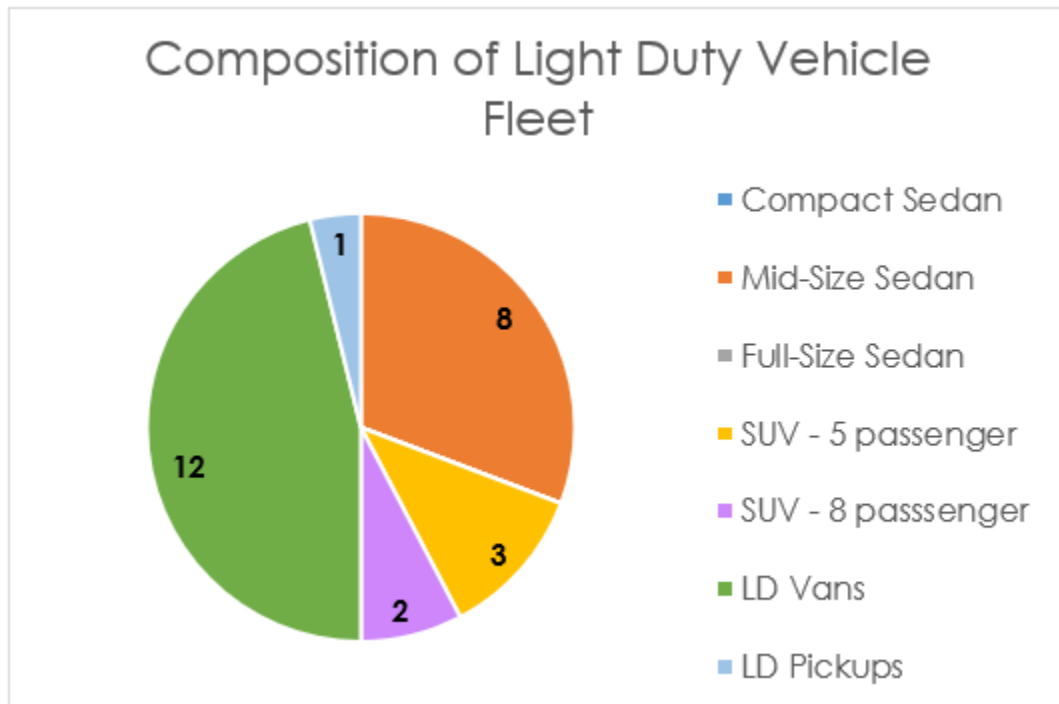
monitor and reduce idling time, has been a key factor in improving fuel efficiency.

By leveraging telematics, CalPERS has made data-driven decisions that enhance operational efficiency and reduce fuel consumption. In addition to minimizing idling, telematics has enabled CalPERS to identify and address behaviors such as speeding and harsh acceleration. These improvements not only enhance safety but also contribute to better fuel economy, further boosting MPG.

Looking ahead, it is anticipated that with a continued analysis of telematics data, combined with the integration of ZEVs into the fleet, further MPG will improve and contribute to CalPERS' sustainability goals. These efforts align with CalPERS' commitment to sustainability and its goal of reducing the environmental impact of its fleet operations.

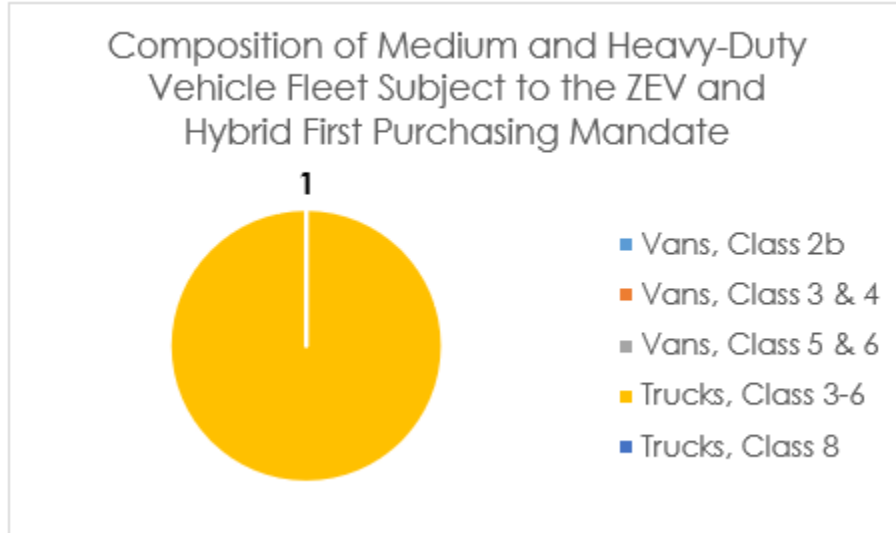
### Composition of Light Duty Vehicle Fleet

**Graph 2.2: Composition of Light Duty Vehicle Fleet**



## Medium and Heavy-Duty Fleet Vehicles

Graph 2.3: Composition of Medium and Heavy-Duty Vehicle Fleet Subject to the ZEV and Hybrid First Purchasing Mandate



## Incorporating ZEVs into the State Fleet

### Light-Duty ZEV Adoption

Table 2.4 Light Duty Vehicles in Department Fleet Currently Eligible for Replacement

Vehicle Type	Sedans	LD vans	LD Pickups	SUVs, 5 passengers	SUVs, 7 passengers	SUVs, 8 passengers	Total
# of Vehicles eligible for replacement	6	1	1	1	0	2	11

Table 2.5 Plan for Light Duty ZEV Additions to the Department Fleet

ZEV Category	21/22	22/23	23/24	24/25	25/26
Battery Electric Vehicle (BEV)	0	0	1	0	0
Plug-in Hybrid Vehicle (PHEV)	0	0	0	0	0
Fuel Cell Vehicle	0	0	0	0	0
Percent of total purchases	0	0	33%	0	0

ZEV Category	21/22	22/23	23/24	24/25	25/26
<b>Required ZEV Percentage</b>	<b>35%</b>	<b>40%</b>	<b>45%</b>	<b>50%</b>	<b>50%</b>
<b>Total number of ZEVs in Fleet*</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>

**Reporting Narrative for Table 2.5: Light Duty ZEV Additions to the Department Fleet.**

The most beneficial types of light-duty vehicles for the department's fleet include sedans, SUVs, and minivans, as they support the diverse operational needs of the Regional Offices, Operations, and Legal Office teams. Among these roles previously identified, Regional Offices are currently transitioning BEVs through the DGS leasing program. Operations already utilizes one BEV for short-distance travel between warehouses and facilities. For the Legal Office, PHEVs are the most practical option, as they balance electric operation for short trips with gasoline-powered flexibility for extended fieldwork and rural assignments.

Challenges exist with ZEV adoption due to the operational limitations of BEVs, particularly for CalPERS' Legal Office vehicles. BEVs are not feasible for roles requiring extended range or rapid refueling, making PHEVs the most viable option for the Legal Office. Additionally, there are currently limited ZEV minivan options available, which adds to the challenge of adopting them into the Legal Office fleet. Minivans are critical for maintaining undercover operations, as they provide the necessary space and versatility for specialized field assignments.

Looking ahead, plans exist to transition Legal Office vehicles to PHEVs by 2035 to align with future purchasing restrictions and emission reduction goals. PHEVs offer the flexibility needed for field assignments while reducing emissions during routine operations. Ongoing evaluation of emerging ZEV technologies and charging infrastructure developments will ensure alignment with operational needs and sustainability objectives, while collaborating with the Legal Office to identify suitable PHEV models and address operational concerns.

**Planning Narrative for Table 2.5: Light Duty ZEV Additions to the Department Fleet.**

Currently, efforts are focused on replacing internal combustion engine (ICE) vehicles with BEVs for the Regional Offices. The plan is to transition these vehicles by utilizing the DGS Leased Vehicle Program. For that reason, these replacements are not included in the table above.

The Fleet Acquisition Plan (FAP) for FY 2024/2025 included the removal of four ICE vehicles to be replaced with 4 BEVs. This effort will continue with FY 2025/2026 FAP, with plans to replace seven more ICE vehicles with BEVs.

## Medium- Heavy-Duty ZEV Adoption

### Medium and Heavy-Duty Vehicles in Department Fleet currently Eligible for Replacement

**Table 2.6 MD/HD Vehicles in Department Fleet Currently Eligible for Replacement**

Vehicle Type	Vans, Class 2b	Vans, Class 3 & 4	Vans, Class 5 & 6	Trucks, Class 3-6	Truck, Class 8	Total
-	-	-	-	1	-	1
<b># of Vehicles Eligible for Replacement</b>	-	-	-	1	-	1

**Table 2.7 Planned Medium/Heavy Duty ZEV Additions to the Department Fleet**

Table Header Format	21/22	22/23	23/24	24/25	25/26
<b>Battery Electric Vehicle (BEV)</b>	-	-	-	-	-
<b>Plug-in Hybrid Vehicle (PHEV)</b>	-	-	-	-	-
<b>Fuel Cell Vehicle</b>	-	-	-	-	-
<b>Percent of total purchases</b>	-	-	-	-	-
<b>Total number of ZEVs in Fleet</b>	-	-	-	-	-

### Reporting Narrative for Table 2.7: Medium-Heavy Duty ZEV Adoption

CalPERS previously maintained one medium-duty truck that was used for facility and operations support purposes. This vehicle was removed from service and permanently retired from the fleet in June 2024. The department does not intend to replace the vehicle, as current operational needs can be met through the existing light-duty fleet.

At present, CalPERS has no medium- or heavy-duty vehicles in operation. The fleet now consists exclusively of light-duty vehicles.

### Planning Narrative for Table 2.7: Medium-Heavy Duty ZEV Adoption

MD/HD VEHICLE PLAN ACHIEVED.

## Take-Home Vehicle Fleet Status

**Table 2.8 Take-Home Vehicle Fleet Status**

Vehicle Type	Sedans	LD Pickup or Trucks	MD/HD Pickup or Truck	LD Van	MD/HD Van	SUV
<b>Totals</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>2</b>

### Reporting Narrative on Table 2.8: Take-Home Vehicle Fleet

CalPERS' take-home fleet program is limited to Legal Office vehicles, which currently consists of minivans, SUVs, and a light-duty pickup truck. The use of home storage permits, which fall under cost-effective permits, supports departmental fleet management goals by optimizing vehicle deployment, reducing unnecessary mileage, and minimizing overall emissions.

By allowing team members to store fleet vehicles at home, the department reduces the need for individuals to make separate trips to centralized fleet locations solely to retrieve or return vehicles. This practice not only conserves fuel but also reduces wear and tear on vehicles, contributing to lower maintenance costs and extended vehicle lifespans. Additionally, home storage permits enable Legal Office team members to respond more efficiently to work assignments, particularly in cases where job duties require immediate or after-hours travel, further supporting the department's goal of lowering greenhouse gas emissions.

By strategically managing home storage permits, CalPERS ensures that this practice aligns with sustainability objectives while maintaining fiscal responsibility and operational effectiveness.

### Planning Narrative on Integrating the Take-Home Vehicle Program with Telework

By limiting the Take Home Vehicle Program to the dedicated Legal Office fleet, CalPERS ensures that the right type of vehicles are assigned. These vehicles allow investigators to blend in with the public and maintain their undercover identity, ensuring the effectiveness of their field assignments.

Due to investigator's primary duties being field assignments, telework does not impact the home storage program or the use of these vehicles. As such, there is no current need to adjust vehicle assignments or develop additional plans for integrating telework into this program.

### Planning Narrative on Integrating the Take-Home Vehicle Program with Emissions Reduction Strategies

CalPERS is committed to reducing emissions from the Legal Office fleet, while ensuring that operational effectiveness is maintained. To achieve this, the department has been actively transitioning to HEVs whenever possible, as these vehicles provide improved fuel efficiency and lower emissions without compromising the ability to perform specialized field assignments. Additionally, by installing telematics on Legal Office vehicles, team members can be educated on fuel-efficient driving techniques, such as minimizing idling and maintaining steady speeds, to reduce fuel consumption during field assignments.

Looking ahead, the department plans to transition these vehicles to PHEVs by 2035. PHEVs offer the ability to operate on electric power for short distances, further reducing emissions during routine assignments, while retaining the flexibility of gasoline-powered operation for extended fieldwork. This phased approach aligns with sustainability goals while minimizing disruptions to confidential operations.

By implementing these strategies and continuing to transition to cleaner vehicle technologies, CalPERS is taking meaningful steps to reduce emissions from the home storage fleet while maintaining the integrity of confidential operations.

### **Planning Narrative for Integrating ZEVs into Take-Home Vehicles**

CalPERS is actively transitioning Legal Office vehicles to HEVs and plans to adopt PHEVs by 2035. PHEVs are ideal for confidential operations, as they balance electric operation for short trips with gasoline-powered flexibility for extended fieldwork. While BEVs are effective for reducing emissions, they may not meet the operational needs of undercover assignments requiring longer ranges and rapid refueling capabilities. Ongoing evaluation of emerging ZEV technologies will continue to ensure alignment with operational requirements and emission reduction goals.

## **ZEV Public Safety Exemption**

### **Reporting Narrative for ZEV Public Safety Exemption**

Currently, no sworn officers are driving ZEVs. However, the Legal Office fleet is planned to transition to PHEVs by 2035. Once this transition is complete, all sworn officers will be utilizing PHEVs, supporting both operational needs and sustainability goals.

CalPERS has qualified for the public safety exemption under Management Memo (MM) 16-07 due to the specialized performance requirements of the Legal Office fleet. While this exemption has limited the immediate incorporation

of ZEVs, proactive planning is underway for the transition to PHEVs to align with future purchasing restrictions and emission reduction targets.

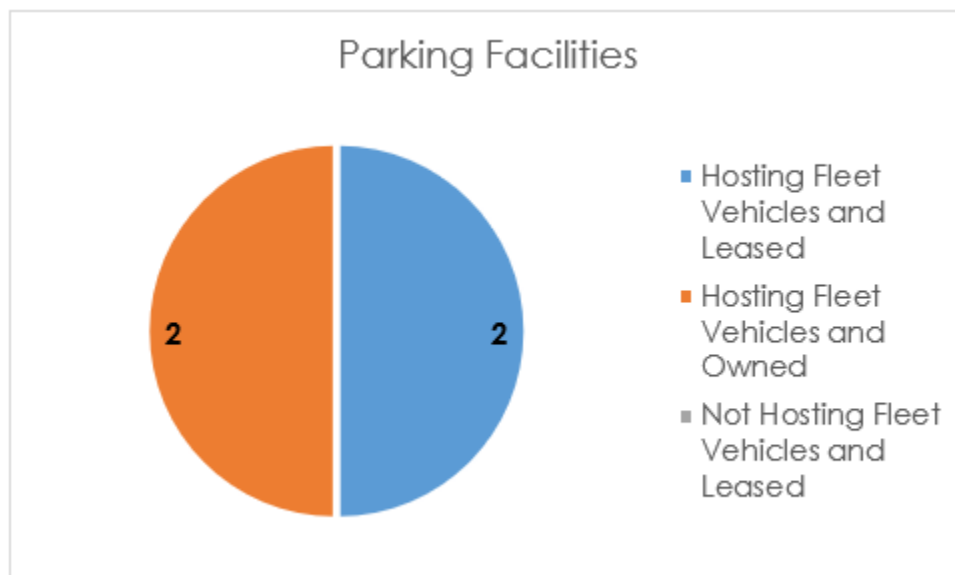
### Planning Narrative for ZEV Public Safety Exemption

Because of the unique operational demands of the Legal Office fleet, BEVs are not currently feasible, as they would negatively impact field operations. To address future purchasing restrictions and support sustainability goals, a transition of these vehicles to PHEVs by 2035 is planned.

The next step is collaboration with the Legal Office to evaluate how PHEVs can be appropriately utilized during field assignments while maintaining operational effectiveness. This collaboration will focus on identifying suitable PHEV models, assessing infrastructure requirements for charging stations, and ensuring that ZEVs are utilized as intended to maximize emissions reduction.

## Department's Parking Facilities

**Graph 2.4: Parking Facilities**



### Reporting Narrative on Graph 2.4: Parking Facilities

CalPERS primarily operates office buildings that are supported by a mix of underground parking garages and ancillary surface parking lots. These facilities provide essential parking access for a wide range of users, including CalPERS' fleet vehicles, team members, and visitors to the Lincoln Plaza (LP) campus. The underground parking areas are not physically separated by user type; instead, fleet, team member, and visitor vehicles are parking within these areas. Team members park in the ancillary surface parking lots.

Nearly all parking facilities are state-owned, with the exception of one ancillary parking lot that is leased. Parking facilities play a critical role in supporting CalPERS' mission by ensuring safe, reliable access for daily operations. In total, CalPERS has 27 fleet vehicles, making parking a consistent and significant component of the department's operational footprint.

### Reporting on Status of EVSE Projects

**Table 2.9 : High Priority EVSE Projects**

Facility Name	Total Parking Spaces	Existing L1 Charging Ports (2024)	Existing L2 Charging Ports (2024)	Existing L3 Charging Ports (2024)	Total Charging Ports (2024)	EV Charging Ports Needed by 2026
Lincoln Plaza North	427	-	4	-	4	-
Lincoln Plaza East and West	962	51	14	-	65	-
<b>Total</b>	<b>1,389</b>	<b>51</b>	<b>18</b>	<b>-</b>	<b>69</b>	<b>-</b>

### EV Charging Site Assessments

#### Reporting on 2024 Facility Site and Infrastructure Assessments

**Table 2.10 EV Charging Infrastructure Site Assessments Conducted**

Facility Name	L1 EVSE Project Assessments	L2 EVSE Project Assessments	L3 EVSE Project Assessments	Entity that Conducted the Site Assessment
<b>NO EV CHARGING ASSESSMENTS</b>	-	-	-	-
<b>Total</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

#### Planning Narrative on Table 2.10: EVSE Construction Plan

EVSE NEEDS ACHIEVED. CalPERS currently does not have an explicit plan to add additional EV chargers onsite however it will continue to assess building and employee needs, taking into account electrical loads, and determine the amount of EV chargers that could potentially be added. A third-party contractor, selected through a competitive bidding process, will be used to

ensure the work is complete and meets building and code standards.

## **On-going EVSE Charging Operations and Maintenance**

### **Public EV Charging Policies**

#### **Reporting Narrative on Public EV Charging Policies**

PUBLIC CHARGING POLICY NOT REQUIRED.

#### **Planning Narrative on Public EV Charging Policies**

PUBLIC CHARGING POLICY NOT REQUIRED.

### **Employee EV Charging Policies**

#### **Reporting Narrative on Employee EV Charging Policies**

EMPLOYEE EV CHARGING POLICY ACHIEVED.

#### **Planning Narrative on Employee EV Charging Policies**

EMPLOYEE EV CHARGING POLICY ACHIEVED, see Appendix H.

### **Fleet EV Charging Policies**

#### **Reporting Narrative for Fleet EV Charging**

NO FLEET EV CHARGING POLICY IN PLACE.

#### **Planning Narrative for Fleet EV Charging**

CalPERS does not have any plans to develop a Fleet EV Charging Policy.

### **Hydrogen Fueling Infrastructure**

#### **Planning Narrative for Hydrogen Fueling Infrastructure**

NO HYDROGEN FUEL PLANS. Hydrogen is not a fuel of choice for CalPERS due to the limited vehicle options as well as the limited infrastructure.

# CHAPTER 3 – ENERGY

## Department Mission and Building Infrastructure

### Reporting Narrative for Department Mission and Building Infrastructure:

CalPERS' Lincoln Plaza (LP) campus consists of three interconnected buildings totaling over 1 million square feet and supporting over 2,500 onsite and remote employees, along with member services, a data center, and amenities such as a café, childcare facility, and fitness center. CalPERS owns and operates the entirety of its LP property with less than 10% of total square footage leased to retail vendors. The largest share of energy consumption is attributed to building operations, particularly heating, ventilation, and air conditioning (HVAC) systems, which are critical to operational continuity and occupant comfort. Lighting and plug loads, including extensive office technology and a data center spanning over 15,000+ square feet, represent the next most energy-intensive uses. Natural gas is primarily used for water and space heating during winter months, while electricity powers the majority of daily operations across the campus.

The scale of LP, combined with the need for continuous service delivery, results in substantial energy use. In 2024, the campus consumed over 13.8 million kilowatt-hours (kWh) of electricity and approximately 77,000 therms of natural gas. To manage this demand and align with statewide sustainability goals, CalPERS has implemented an advanced building management system, participates in demand response programs, and is pursuing projects such as LED lighting upgrades, boiler and chiller replacements, and electrification of gas-dependent systems.

## Total Purchased Energy

**Table 3.1: Total Purchased Energy 2023 and 2024**

Purchased Energy	2003 Baseline Quantity	Unit	2023 Quantity	2024 Quantity	% Qty. Change 2003-24
Electricity	13,078,768	kWh	13,661,695.80	13,886,250	6%
Less EV Charging	-	kWh	114,172.93	160,173	-
Natural Gas	3,255	therms	89,483	77,162	2,271%
Propane	-	gallons	53	66	-

Purchased Energy	2003 Baseline Quantity	Unit	2023 Quantity	2024 Quantity	% Qty. Change 2003-24
Fuel Oil	-	gallons	-	-	-
Steam	-	pounds	-	-	-
Chilled H2O	-	kBtu	-	-	-
<b>TOTALS</b>	<b>44,950,257</b>	<b>kBtu Site</b>	<b>55,177,249</b>	<b>54,555,618</b>	<b>21%</b>

## Department Energy Use

### Reporting High Energy Use Facilities

Table 3.2: Facilities with Largest 2024 Energy Consumption

	Facility Name	Floor Area (ft2)	Site Energy (kBTU)	Source Energy (kBTU)	Source EUI (kBTU/ft2-yr)
<b>OWNED</b>	CalPERS Lincoln Plaza North	505,098	23,953,465	70,966,679	141
<b>OWNED</b>	CalPERS Lincoln Plaza East-West	538,162	30,602,153	84,976,056	158
<b>LEASED</b>	-	-	-	-	-
	<b>Total for Facilities in This Table</b>	<b>1,043,260 ft2</b>	<b>54,55,618</b>	<b>155,942,734 kBTU</b>	<b>-</b>
	<b>Total for All Department Facilities</b>	<b>1,043,260 ft2</b>	<b>54,555,618 kBTU</b>	<b>155,942,734 kBTU</b>	<b>-</b>
	<b>Percent of Totals</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>-</b>

## Energy Efficiency Solutions for Largest Energy Using Buildings

The financial burden for energy efficiency projects is the biggest challenge that LP currently faces. CalPERS is actively developing a five-year plan to support infrastructure upgrades necessary for achieving a decarbonized building, with a tentative implementation target of 2035.

### Planning Outline PO0a: Planning for Facilities with Largest Energy Use

Facility Name	Proposed Energy Efficiency Solutions
Lincoln Plaza North	<b>Retrofitting all existing lighting to LED by 2026. Current chillers and boilers are almost at end of life and will be replaced within 2 years.</b>
Lincoln Plaza East-West	<b>No additional energy efficiency plans have been finalized. However, CalPERS is looking into adding additional EV chargers and removing all-natural gas usage from site. Current chillers and boilers are almost at end of life and will most likely be replaced within 5 years.</b>

### Planning Narrative for PO3a: Building Energy Efficiency

CalPERS is committed to reducing carbon emissions from all owned buildings by moving away from most onsite natural gas usage. This means electrifying building systems, a transition that will require significant investment. The energy efficiency projects planned over the next five years are listed below, pending budget constraints and approval:

LED lighting upgrade for Lincoln Plaza North (LPN); Lincoln Plaza East/West (LPEW) is already underway, and project completion is set for the end of 2026.

Boiler and chiller replacements

Electrification of the Café

The greatest challenge is the financial burden of these upgrades. Despite this, progress has begun at LPEW. Project oversight is being led by the Property Management team and selected vendor, guided by the goals and priorities of CalPERS.

The department is developing a five-year plan to guide infrastructure upgrades for building decarbonization. Tentative implementation is targeted for 2035, allowing time for savings from the LED upgrade to accumulate and offset the costs of other large-scale projects.

## Zero Net Energy (ZNE)

### Reporting on Existing Building ZNE

**Table 3.3 Zero Net Energy Buildings**

Status of ZNE Buildings	Number of Buildings	Floor Area (ft <sup>2</sup> )	% of Building Area
<b>Buildings Completed and Verified</b>	<b>0</b>	<b>1,043,260</b>	<b>0%</b>
<b>Building in Design or Under Construction</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Building Proposed for Before 2025 (but not in design or construction)</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Totals for ZNE Buildings by 2025</b>	<b>0</b>	<b>1,043,260</b>	<b>0%</b>
<b>Totals for All Department Buildings by 2025</b>	<b>0</b>	<b>R</b>	<b>0%</b>
<b>% ZNE by 2025</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

### Planning Narrative of Table 3.3: Zero Net Energy Buildings

LP buildings do not currently meet the efficiency targets to be eligible for Zero Net Energy. Despite participating in SMUD's Solarshares program which offsets approximately 60% of our current onsite energy use through off-site renewables. While this represents a substantial renewable energy contribution, participation in SolarShares alone does not qualify a building as ZNE. CalPERS will continue to work towards building efficiency by investing in retro commissioning across all LP buildings. Doing so will ultimately allow CalPERS to get closer to ZNE targets.

## New Construction Exceeds Title 24 by 15%

NO NEW CONSTRUCTION.

**Table 3.4: New Building Construction Exceeding Title 24 by 15%**

New Buildings Exceeding Title 24 by 15%	Number of Buildings	Floor Area (ft <sup>2</sup> )
<b>Completed Since July 2012</b>	<b>-</b>	<b>-</b>
<b>Under Design or Construction</b>	<b>-</b>	<b>-</b>
<b>Proposed Before 2025</b>	<b>-</b>	<b>-</b>

### Reporting Narrative of Table 3.4 New Building Construction Exceeding Title 24 by 15%

NO NEW CONSTRUCTION PLANNED.

## Existing Buildings Energy Efficiency

### Reporting on Energy Efficiency for Existing Buildings

**Table 3.5: Department-Wide Energy Trends (if available)**

Year	Floor Area (ft <sup>2</sup> )	Total Source kBTU Consumption	Department Average EUI (Source kBtu /square foot)
<b>Baseline Year 2003</b>	<b>486,758</b>	<b>140,922,778</b>	<b>290</b>
<b>2013</b>	<b>1,041,062</b>	<b>206,248,317</b>	<b>198</b>
<b>2014</b>	<b>1,043,260</b>	<b>197,134,105</b>	<b>189</b>
<b>2015</b>	<b>1,043,260</b>	<b>184,470,101</b>	<b>177</b>
<b>2016</b>	<b>1,043,260</b>	<b>197,562,742</b>	<b>189</b>
<b>2017</b>	<b>1,043,260</b>	<b>190,048,789</b>	<b>182</b>
<b>2018</b>	<b>1,043,260</b>	<b>183,285,299</b>	<b>176</b>
<b>2019</b>	<b>1,043,260</b>	<b>178,387,423</b>	<b>171</b>
<b>2020</b>	<b>1,043,260</b>	<b>156,779,937</b>	<b>150</b>
<b>2021</b>	<b>1,043,260</b>	<b>136,917,845</b>	<b>131</b>
<b>2022</b>	<b>1,043,260</b>	<b>158,108,928</b>	<b>152</b>
<b>2023</b>	<b>1,043,260</b>	<b>155,365,236</b>	<b>149</b>
<b>2024</b>	<b>1,043,260</b>	<b>155,942,734</b>	<b>149</b>
<b>% Change 2003-2024</b>	<b>114%</b>	<b>11%</b>	<b>-48%</b>

### Reporting Narrative for Table 3.5: Department-Wide Energy Trends

CalPERS faces challenges with the baseline requirement for the EO B-18-12 energy goals, particularly for the grid-based reduction of 20%, which is impacted by the overall square footage growth after the baseline year of 2003. CalPERS continues to research potential solutions to this issue through energy efficiency projects and the adoption of renewable energy sources.

LPN was the only CalPERS building prior to 2004, after which LPEW was added. This growth increased total square footage, making it more challenging to meet the EO B-18-12 target of a 20% reduction in grid-based energy use. Future efforts will focus on improving energy efficiency to meet EUI targets.

The current trend shows a slow increase in source energy consumption. With the LED lighting upgrade projects to be completed in 2026, there should be a

decrease in source energy consumption. Small variations between 2019 and 2022 were the result of a hybrid telework schedule, during which CalPERS team members were primarily offsite in 2020 and onsite three days per week the following years, reducing overall energy use. The three days per week hybrid schedule remains in effect.

Further strategies to reduce total energy consumption and energy use intensity (EUI) include completing the LED lighting upgrade, optimizing HVAC operations, and continuing to explore renewable energy opportunities. While transitioning from boilers and chillers to heat pumps may temporarily increase EUI, this step will ultimately decarbonize CalPERS buildings and support long-term sustainability goals.

CalPERS remains dedicated to reducing the environmental impact of its business operations and to increasing awareness of and compliance with legislative sustainability goals.

## Energy Savings Projects

**Table 3.6: Summary of Energy Savings Projects 2023-2024**

Year Funded	Estimated Energy Savings (kBTU/yr.)	Floor Area Retrofit (sq. ft.)	Percent of Department Floor Area
2023	No Energy Savings Projects	0	0%
2024	LED Lighting Upgrade Project was Planned for Lincoln Plaza East-West.	538,162	100%
<b>Total</b>	-	<b>538,162</b>	<b>100%</b>

### Reporting Narrative for Table 3.6 Energy Savings Projects 2022-2024

An LED lighting upgrade is underway with the LPEW buildings scheduled for completion in 2025. LPN is currently in the design phase and is expected to be completed by the end of 2026. In 2023, a third-party consultant completed an energy audit for LPN and LPEW which informed us of potential electrification projects that CalPERS will consider over the next five years.

Table 3.6 outlines the proposed projects planned for 2024, all of which support CalPERS' goal of enhancing energy efficiency across campus. The LED lighting upgrade project is projected to reduce total energy consumption by up to 15% and is scheduled for completion across all LP buildings by 2026. Other significant projects, such as the replacement of chillers, water heaters, and gas appliances, are tentatively planned over the next five years. CalPERS will determine the next set of updates based on the available budget.

## Demand Response (DR)

### Participating in DR Utility Programs & Participating in DR Events

Table 3.7 : Demand Response (DR) Program Participation

Demand Response	Total Number of Buildings	Total Nominated Reduction (kW)	Total Curtailment in 2023 (kW)	Total Curtailment in 2024 (kW)
Enrolled with Enersponse	2	-	-	-
Participate in DR	0	-	-	-
Participate in ADR	2	124,6000	271,9000	623,3000
<b>Total Participating (DR/ADR)</b>	<b>2</b>	<b>124,6000</b>	<b>271,9000</b>	<b>623,3000</b>
Enrolled in DR/ADR in 2025	2	-	-	-
Under Construction or Renovation during 2025	0	-	-	-
Ineligible to Participate	0	-	-	-
<b>Entire Agency's Building Portfolio</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>

#### Reporting Narrative for Table 3.7: Demand Response (DR) Program Participation

ALL BUILDINGS ARE ENROLLED IN DR.

#### Planning Narrative for Table 3.7: Demand Response (DR) Program Participation

DEMAND RESPONSE ENROLLMENT ACHIEVED.

## Renewable Energy

Table 3.8: 2024 Onsite and Off-Site Renewable Energy

Status	Number of Sites	Capacity (kW)	2024 Power Generation (kWh)	Percent of Total Annual Power Use
<b>Onsite Renewables in Operation or Construction</b>	-	-	-	-
<b>Onsite Renewables Planned</b>	-	-	-	-
<b>Onsite Renewables Totals</b>	-	-	-	-
<b>Department-Wide Total Energy Use (kWh equivalent)</b>	-	-	-	<b>100</b>
<b>Off-Site Renewable Totals</b>	<b>1</b>	-	<b>13,886,250</b>	<b>100</b>
<b>Off-Site Renewables Planned</b>	<b>0</b>	-	<b>0</b>	<b>100</b>
<b>Off-Site Renewables Combined Current &amp; Planned</b>	<b>1</b>	-	<b>13,886,250</b>	<b>100</b>
<b>Current Combined Onsite and Off-Site Renewable Energy</b>	<b>1</b>	-	<b>13,886,250</b>	<b>100</b>
<b>Additional Planned Onsite and Off-Site Renewables</b>	<b>0</b>	-	-	-

**Planning Narrative for Table 3.8, for all Existing Building Renewable Energy**

NO ONSITE SPACE FOR RENEWABLE ENERGY.

In 2015, a solar feasibility study was performed for the parking structure adjacent to LP to determine if adding rooftop solar would be cost-effective. The results showed that the project would not be cost-effective, with a 19-year simple payback and a return on investment of 14 years, assuming a 2.5% annual utility increase. Ultimately, this was deemed not to be a cost-effective option, nor does the campus have sufficient usable space to add the requisite number of solar panels for a significant or complete offset.

After determining that onsite solar was not feasible, CalPERS entered into an agreement with SMUD for 8.7 million kWh per year of community solar through SMUD's SolarShares program. SolarShares provides LP with approximately 50% of its energy from a local solar field. This agreement in combination with SMUD's Greenergy program ensures that 100% of LP buildings participate in a renewable energy program.

>50% RENEWABLE TARGET ACHIEVED.

## Monitoring-Based Commissioning (MBCx)

**Table 3.9: Current & Potential MBCx Projects**

Facility	Building Name	Floor Area (sq. ft.)	MBCx Capable, Difficult, or No EMS	MBCx Projected Start Date	MBCx Projected Cost (\$ if known)
CalPERS	Lincoln Plaza North	505,098	Capable Today	1986	N/A
CalPERS	Lincoln Plaza East/West	538,162	Capable Today	2006	NA

### Planning Narrative for Table 3.9: MBCx Status of Buildings

All CalPERS facilities have incorporated Monitoring-Based Commissioning (MBCx). The benefits of MBCx include increased energy efficiency, resulting in energy savings and lowering operating costs. The system also reduces maintenance costs by identifying equipment issues before complete failure occurs.

In addition to the MBCx, LP has Energy Management Control Systems (EMCS) installed with subsystem metering. EMCS allows CalPERS to analyze equipment setpoints and determine which combinations use the least amount of energy at specific times. Additionally, it offers greater insight into building performance. The biggest challenge encountered with the EMCS remains software updates, which are performed only when the previous version is no longer supported, a process that can be both complex and time-consuming.

## Building Controls

### Reporting on EMS/BMS/Controls Building Capability

BUILDING CONTROLS ACHIEVED.

**Table 3.10: Building Controls**

Equipment Controls	% of Buildings Controlled Remotely Offsite	% of Buildings with Controls Onsite	% of Total Buildings
Lighting	0%	100%	100%
HVAC: EMS/BMS	0%	100%	100%
HVAC: Smart Thermostats	0%	100%	100%
Other:	-	-	-

**Planning Narrative for Table 3.10: EMS/BMS/Controls Building Capability**

BUILDING CONTROLS ACHIEVED.

**Energy Reduction Strategies - Best Management Practices (BMPs)**

**Planning Narrative for Energy Reduction Strategies in Department Buildings Best Management Practices (BMPs)**

IEQ Best Management Practices	BMP In Practice Yes, No or NOT APPLICABLE
Department of Technology's <a href="#">Basic Policy 4819.31</a> item 13: Power management savings on electronic devices.	<b>CalPERS is researching and will have an answer in time for the final submission in December</b>
<a href="#">Standard Operating Procedures for Energy Management In State Buildings - 1805</a>	<b>Yes</b>
Ensure lights & equipment are turned off at end of each workday.	<b>Yes</b>
Copiers and printers are set to utilize their Energy Saver mode during periods of inactivity.	<b>Yes</b>
Energy Star rated equipment or equivalent is purchased.	<b>Yes</b>
Lighting and HVAC electric usage is minimized outside of normal building hours.	<b>Yes</b>
Building HVAC controls are set to allow for a +2- or -2-degree fluctuation from the temperature set point.	<b>Yes</b>

<b>IEQ Best Management Practices</b>	<b>BMP In Practice Yes, No or NOT APPLICABLE</b>
Ensure that buildings take advantage of cool nighttime and morning temperatures by effectively utilizing economizer and night flush cycles.	<b>Yes</b>
Data centers are operated at the maximum temperature allowed by equipment manufacturers.	<b>Yes</b>
Domestic hot water systems are not set hotter than 105 degrees.	<b>No</b>
Lights are turned off in all unoccupied rooms.	<b>Yes</b>
Occupancy sensor installation is complete in all rooms.	<b>No</b>
Measure light levels and remove lamps or reduce wattage to provide appropriate light level.	<b>Yes</b>
Replace all incandescent light bulbs and any remaining magnetic fluorescent ballasts in fluorescent light fixtures.	<b>Yes</b>
Daylight controls on electric lights in any space over 10,000 ft <sup>2</sup> that has skylights or windows.	<b>Yes</b>
Ensure that state employees do not plug in any personal devices other than cell phone and Tablet chargers and task light.	<b>Yes</b>
Ensure that any personal space heaters, microwaves, refrigerators, and coffee makers are removed from the workplace.	<b>Yes</b>
Ensure that any new equipment purchased for employee kitchens and break rooms has an Energy Star rating.	<b>Yes</b>
Ensure that refrigerators manufactured prior to the year 2000 are replaced with more efficient models.	<b>Yes</b>

IEQ Best Management Practices	BMP In Practice Yes, No or NOT APPLICABLE
All vending machines onsite are certified to Energy Star version 3.0, section 3(B) or are equipped with after-market occupancy sensor or sales-based energy management hardware.	Yes
All coffee makers shut off automatically.	No
Timers are installed on all equipment including paper shredders, lighted snack vending machines, and water coolers.	No
<a href="#">Energy Efficiency in Data Centers And Server Rooms - SAM 1820</a>	Yes
All state-owned and leased data centers and server rooms greater than 200 square feet must be operated within the ASHRAE-TC 9.9, Class A1-A4 guidelines, including operating at temperatures between 73-81 degrees Fahrenheit.	Yes
All state-owned data centers over 1,000 square feet must report their power usage effectiveness (PUE) to the Department of Technology each year.	Yes
All state-owned data centers over 1,000 square feet with a PUE above 1.5 must reduce their PUE by a minimum of 10% per year until they achieve a PUE of 1.5 or lower.	No
All purchases of network switches and routers meet the Energy Efficient Ethernet IEEE 802.3-2012 Section 6 standard.	Yes
Virtualization options must be considered when refreshing server equipment or standing up new systems.	Yes

BUILDING CONTROLS ACHIEVED.

# Chapter 4 - DECARBONIZATION

## Department Mission and Decarbonization Efforts

CalPERS' operations are centered at its Lincoln Plaza (LP) campus in downtown Sacramento, which consists of three interconnected office buildings with more than 1 million square feet of office space and over 650,000 square feet of underground parking. These structures house over 2,000 team members, consultants, vendors, and visitors and support core functions such as member services, administrative offices, and a data center, as well as onsite amenities including a café, childcare facility, and fitness center.

The most energy-intensive facilities within the portfolio are LP North (LPN) and LP East and West (LPEW), which include an in-house data center, with continuous power and cooling requirements. Lighting and plug loads across campus also contribute significantly to overall energy use.

The primary emission sources are fossil fuel-based systems. Natural gas-fired boilers provide space heating during colder months, and water heaters supply hot water. The onsite café relies on natural gas appliances for food preparation, while propane is used in forklifts. The fire pump system and emergency backup systems use diesel. Boilers and hot water equipment use natural gas and represent the largest share of stationary Scope 1 emissions.

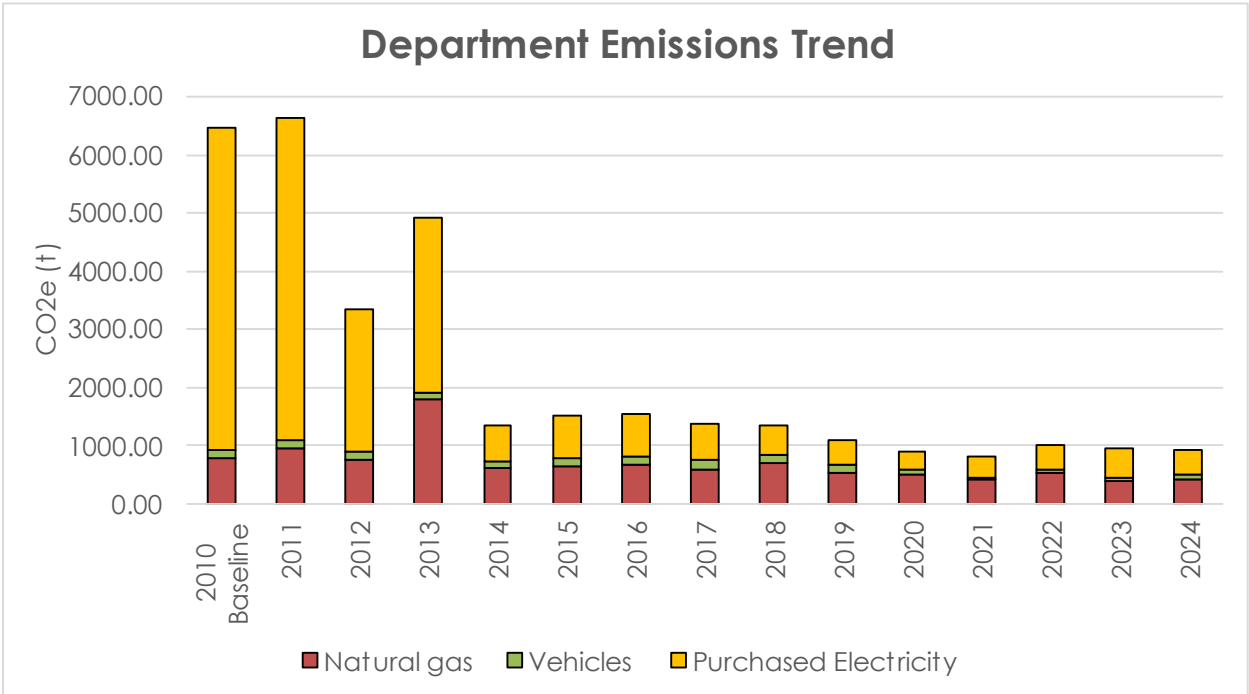
## Greenhouse Gas Emissions

**Table 4.1: GHG Emissions since 2010 (Metric Tons)**

<b>Emissions Source</b>	<b>Natural gas</b>	<b>Vehicles</b>	<b>Purchased Electricity</b>	<b>Total</b>
2010 Baseline	<b>799</b>	<b>117</b>	<b>5,554</b>	<b>6,470</b>
2011	<b>954</b>	<b>134</b>	<b>5,549</b>	<b>6,637</b>
2012	<b>752</b>	<b>134</b>	<b>2,458</b>	<b>3,344</b>
2013	<b>1,805</b>	<b>116</b>	<b>2,993</b>	<b>4,914</b>
2014	<b>613</b>	<b>122</b>	<b>604</b>	<b>1,339</b>
2015	<b>641</b>	<b>150</b>	<b>732</b>	<b>1,523</b>
2016	<b>674</b>	<b>153</b>	<b>713</b>	<b>1,540</b>
2017	<b>602</b>	<b>148</b>	<b>622</b>	<b>1,372</b>
2018	<b>711</b>	<b>128</b>	<b>506</b>	<b>1,345</b>
2019	<b>544</b>	<b>139</b>	<b>402</b>	<b>1,085</b>
2020	<b>508</b>	<b>71</b>	<b>330</b>	<b>909</b>

Emissions Source	Natural gas	Vehicles	Purchased Electricity	Total
2021	413	45	347	805
2022	538	63	408	1,009
2023	380	62	499	941
2024	418	82	438	938
Percent Change since Baseline	-48%	-46%	-93%	-86%

**Graph 4.1: GHG Emissions since 2010**



**Department’s Decarbonization Approach**

CalPERS’ approach to moving towards decarbonization includes utilizing the Decarbonization Plan developed by a third-party consultant. This plan includes a review of existing building data, energy-use data, and benchmarking information, to inform project recommendations and costs.

In the proposed plan, energy efficiency projects are recommended first to reduce overall Scope 1 and 2 emissions, followed by electrification projects to reduce or eliminate Scope 1 emissions.

In addition to energy efficiency and electrification projects, LP buildings are enrolled in SMUD’s SolarShares program, which ensures 50% of onsite electricity is

sourced through renewable energy. In addition to the SolarShares program, CalPERS is enrolled in SMUD's Greenergy program which is a green-pricing program that ensures electricity is supplied by renewable resources like wind and solar. The combination of the Solarshares program and the Greenergy program allow 100% of all electricity consumed at LP to be from renewable energy. Achieving net-zero carbon emissions for Scope 1 sources by 2035 will require CalPERS to consider electrification projects, such as the replacement of its boilers and chillers, as well as electrifying its onsite café.

### **Existing Conditions Assessment**

LP's existing emission sources stem primarily from its reliance on grid-based electricity and natural gas to operate a large-scale, multi-use campus. The site supports over 2,000 onsite team members, consultants, vendors, and visitors and includes a coffee shop, sandwich shop, café, fitness center, sundry shop, childcare facility, and an in-house data center. The facility spans more than 1 million square feet across three interconnected buildings, and its energy-intensive operations contribute directly to its greenhouse gas emissions profile. The primary sources of emissions include boilers, chillers, lighting, and plug loads, as well as natural gas combustion for water and space heating during colder months.

To mitigate emissions, CalPERS has explored a phased decarbonization strategy aligned with its sustainability goals. CalPERS is moving towards phasing out natural gas use where possible, with the electrification of key systems identified as essential for long-term reductions. This effort includes proposed upgrades to critical infrastructure and a five-year project plan aimed at reducing dependence on fossil fuels. Current mitigation strategies underway include an LED lighting retrofit across all LP buildings. This upgrade began at LPEW in 2024 and is projected to be completed by the end of 2025. Planning and design for the LED retrofit at LPN are scheduled to begin in 2026. This measure alone is expected to reduce total site energy consumption by up to 15%, providing both environmental and financial returns.

Additional proposed projects include the replacement of aging boilers and chillers at LPN and LPEW. These replacements are intended to improve system efficiency and reduce both energy use and emissions therefore, CalPERS is not limited with like-for-like equipment replacements and will consider options such as heat pumps. CalPERS is also considering electrifying its café, eliminating its reliance on natural gas appliances. While these capital-intensive projects are subject to budget constraints, they remain prioritized within the five-year project plan currently under development. This plan aims for full implementation by 2035, with near-term savings from lighting upgrades helping to offset the long-term costs of major mechanical system replacements.

In addition, LP is enrolled in SMUD's SolarShares and Greenergy program, which ensures that all electricity consumed onsite is sourced from renewables. All emergency backup systems and the fire pump system use diesel and all forklifts use propane.

### Carbon Inventory Worksheet

The Carbon Inventory Worksheet was completed by a third-party consultant.

### Owned Building Inventory

**Table 4.2 Option A: Baseline Building Inventory – Owned Facilities**

Building Name	Building Type	Square Footage	Fossil Fuel Consuming Equipment	Total Building Emissions (MTCO2e)
Lincoln Plaza North	Office Space	500,000	Forklift, emergency generators	119.06
Lincoln Plaza East-West	Office Space	540,000	Forklift, emergency generators	306.51

### Central Utility Plant and Energy Intensive Operations Inventory

NO CUP.

**Table 4.4: Central Utility Plant Inventory**

Existing Plant Type	Property Name	Connected Building Count	Natural Gas Consumption (Therms)	Fuel Oil Consumption (kBtu)	Total Carbon Emissions (CO2e)
NO CUP	-	-	-	-	-

NO CUP.

## Decarbonization Measures

### Building Electrification Measures

CalPERS sources 100% of its electricity from carbon free sources through the SMUD SolarShares and Greenergy programs. This means that although there is electricity consumed at LPEW, there are no carbon emissions associated with its electricity. Therefore, eliminating the use of natural gas onsite and switching to a

carbon-free source of energy is the primary strategy for achieving net zero carbon in operations. The recommended pathway for doing this is through electrification of systems that use gas-fired equipment.

The natural gas-using systems at LPEW are heating hot water (HHW) for space heating and domestic hot water (DHW). In addition to these electrification measures, the conversion of the café to an all-electric equipment kitchen is currently being considered.

**Table 4.5: Building Electrification Measure Summary**

Project Type	Project Count	Fossil Fuel Savings (kBtu)	Electricity Savings (kWh)	Emissions Savings (MTCO2e)	Utility Cost Impact (\$)
HVAC_AWHP	2	6,577,900	-738,850	202.90	-\$1,630
DHW Hybrid HP WH	1	233,900	-17,560	8.94	\$1,428
Process Kitchen Electrification	2	850,900	-110,802	23.23	-\$2,808

**CUP Electrification Options**

NO CUP.

**Table 4.6: CUP Measure Summary**

Property Name	Recommended Strategy	Fossil Fuel Savings (kBtu)	Electricity Savings (kWh)	Emissions Savings (MTCO2e)	Utility Cost Impact (\$)
NO CUPs	-	-	-	-	-

**Building Energy Efficiency Measures**

CalPERS began the designing process for LED lighting retrofits. The installation across LPEW will be concluded at the end of 2025. LPN will start the design process for lighting retrofits and conclude the project at the end of 2026.

**Table 4.7: Energy Efficiency Measure Summary**

Project Type	Project Count	Fossil Fuel Savings (kBtu)	Electricity Savings (kWh)	Emissions Savings (MTCO2e)	Utility Cost Impact (\$)
DHW Hybrid HP WH (EFF)	1	0	131,417	26.04	\$22,412

Project Type	Project Count	Fossil Fuel Savings (kBtu)	Electricity Savings (kWh)	Emissions Savings (MTCO2e)	Utility Cost Impact (\$)
DHW_AWHP WH (EFF)	1	0	4,848	0.96	\$827
Lighting LED	3	0	1,845,430	365.62	\$314,716
RCx	3	892,900	1,007,425	247.01	\$188,687

**Decarbonization Action Plan**

A formalized action plan for CalPERS' decarbonization has not yet been finalized. Outlined below is the preliminary action plan suggested by a third-party consultant.

*Short-Term Actions (2026–2030)*

- **Electrification Projects:**
  - *Replace LPN and LPEW natural gas boilers with high-temp, air-to-water heat pumps designed to meet the peak heating load and include one additional spare heat pump (N+1) for redundancy.*
  - *Replace the existing natural gas domestic hot water (DHW) heaters with high efficiency, water-to-water heat pumps to generate hot water from the existing condenser water system.*
- **Energy Efficiency Upgrades:**
  - *Complete LED lighting retrofit for all remaining fluorescent bulbs at Headquarters.*
- **Infrastructure & Planning:**
  - *Validate electrical capacity at Headquarters with local utility providers.*

*Mid-Term Actions (2031–2035)*

- **Electrification Efforts:**
  - *Complete removal of all remaining natural gas consumption within LP's building portfolio aside from emergency equipment.*
  - *Replace existing chillers with new, high-efficiency, magnetic-bearing, chillers that use low GWP refrigerants at the end of their useful life.*
- **Operational Optimization:**
  - *Implement improvements across automated building control systems to keep pace with current technology and improve operational efficiency.*

- **Supply Management:**
  - Continue collaboration with utility providers to leverage incentives and grid modernization programs.
  - Explore options for onsite renewable energy installations.

#### Long-Term Actions (2035 and Beyond)

- **Sustainability & Maintenance:**
  - Maintain carbon neutrality through ongoing monitoring, maintenance, and upgrades of electrification and efficiency systems.
  - Evaluate and pilot emerging technologies such as advanced heat pumps, thermal storage, and onsite renewable energy integration.
- **Policy Adaptation:**
  - Update decarbonization plans in alignment with evolving state policies and technological advancements.
  - Foster a culture of continuous improvement culture within LP operations, embedding sustainability into all capital planning.

#### Existing Challenges

- **Electrical Capacity Constraints:** Validating and potentially upgrading electrical infrastructure at Headquarters to support new heat pump systems may require coordination and capital investment. (SMUD)
- **Space Allocation:** Limited rooftop/outdoor/indoor space at Headquarters for heat pump units could constrain project implementation.
- **Cost Implications:** Switching to fully electric heating systems is predicted to require significant capital investments and may result in increased operating costs due to higher equivalent energy costs and demand charges. CalPERS will need to seek affordable rates.
- **Life Cycle of Existing Equipment:** Some existing heating systems that would require electrification will still have significant remaining life by 2035 and would necessitate large investments ahead of anticipated replacement budgets.
- **Budget and Staffing:** Availability of funding and skilled personnel to manage and execute decarbonization projects on schedule.

#### Decarbonization Action Plan Implementation

CalPERS' proposed project implementation strategy prioritizes early, high-impact efficiency measures followed by major electrification upgrades to align with

equipment life cycles and available funding. Short-term actions through 2030 include campus-wide LED retrofits, installation of air-to-water heat pumps, and replacement of domestic hot water systems, all of which will provide immediate emissions reductions and operational savings. Mid-term projects, proposed for completion by 2035, focus on higher-cost capital improvements such as chiller replacements and electrification of the café. These projects would be delivered through a combination of capital project planning, performance-based contracting where feasible, and close coordination with SMUD to maximize incentives and support grid readiness. Together, these efforts position CalPERS to achieve net-zero operations by 2035 with minimal reliance on offsets.

**Table 4.8: Decarbonization Strategy Summary**

Project Type	Project Count	Emissions Savings (MTCO <sub>2</sub> e)	Timeline
Air-to-Water Heat Pump with Existing Reheat Coils	2	104 MT CO <sub>2</sub> e	Short-term: Proposed to complete all projects by 2030
DHW replacement	2	NA	Short-term: Proposed to complete all projects by 2030
LED retrofit	2	345 MT CO <sub>2</sub> e	Short-term: Proposed to complete all projects by 2030
High-Efficiency Chiller Replacement	2	91 MT CO <sub>2</sub> e	Mid-Term: Proposed to complete both projects during major renovations by 2035
Café Electrification	1	18 MT CO <sub>2</sub> e	Mid-Term: Proposed to complete both projects during major renovations by 2035

### Pilot and Priority Projects

Pilot projects have not been considered at this time.

**Table 4.9: Pilot and Priority Projects for Initial Implementation**

Project	Description	Timeline
-	-	-

### Project Funding and Incentives

Pilot projects have not been considered at this time.

**Table 4.10: Funding Opportunity Summary**

<b>Project Type</b>	<b>Applicable Funding Mechanisms</b>	<b>Potential Utility Incentives</b>
<b>DHW replacement</b>	<b>Self-funded</b>	<b>NONE</b>
<b>Boiler and chiller replacement</b>	<b>Self-funded</b>	<b>SMUD</b>
<b>Lighting retro-commissioning</b>	<b>Self-funded</b>	<b>SMUD</b>

# CHAPTER 5- WATER EFFICIENCY AND CONSERVATION

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## Department Mission and Water Use

The Lincoln Plaza (LP) campus consists of three interconnected office buildings totaling 1 million square feet with about 2,000 daily occupants that includes team members, consultants, vendors, and visitors. The site includes 200,000 square feet of interior and exterior landscaped grounds, which represent a major portion of water demand despite the use of drought-tolerant plants and drip irrigation.

Purchased potable water supports indoor operations (restrooms, custodial uses, HVAC). Cooling towers are the largest consumers, using over 5.5 million gallons in 2024, while boilers operate as closed-loop systems with negligible consumption. Exterior maintenance and cleaning practices have been reduced to limit demand.

Beyond indoor operations and landscaping, CalPERS has no significant water-using processes such as vehicle washing, dust suppression, or construction water. Exterior maintenance has been reduced greatly to conserve water, with window washing limited to once annually and pressure washing conducted only as needed.

CalPERS does not rely on non-purchased water. There are no wells, groundwater pumping, or surface water diversions. All water is supplied by the City of Sacramento.

## Reporting on Total Purchased Water

**Table 5.1: Total Purchased Water**

Purchased Water	2023 Quantity (Gallons)	2024 Quantity (Gallons)	2023 Cost (\$/yr.)	2024 Cost (\$/yr.)
Potable	15,284,200	16,257,400	204,303	204,084
Recycled Water	0	0	0	0

## Reporting Narrative on Table 5.1: Total Purchased Water

As LP buildings have aged, maintaining water efficiency with the large-scale commercial irrigation system has become more challenging, despite the implementation of water savings measures. Even so, water use increased by only 6% in 2024 compared to 2023. The water saving measures that are

implemented at LP are listed below:

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

Water Feature Shutoff – The daycare 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 exterior window washing as well as interior window washing schedule from twice a year each to once a year each.

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

The campus has nearly 200,000 square feet of interior and exterior landscape, which presents significant water usage challenges. Despite utilizing drought-tolerant plants and artificial turf, water conservation remains difficult due to extensive indoor/outdoor areas with landscaping.

Currently, CalPERS does not use recycled water for irrigation because the cooling tower water uses chemicals for treatment that prevent its reuse in landscaping. These chemicals pose risks to plants and soil health, making recycled water application impractical and limiting the ability to reduce potable water consumption in outdoor irrigation.

WATER COSTS RECORDED

**Planning Narrative on Table 5.1: Total Purchased Water**

ROUTINE WATER CONSERVATION STRATEGIES IN PLACE.

**Reporting on Properties with Largest Purchased Water Use per Capita per Day.**

**Table 5.2: Properties with Purchased Largest Water Use Per Capita**

Building Name	Area (sq. ft.)	Ave. Daily Building Occupants	Total 2024 Gallons	Total 2024 Irrigation in Gallons (if known)	Gallons per Capita/ Day
Lincoln Plaza North	505,098	693	9,665,600	~5,542,153	38
Lincoln Plaza East-West	538,162	650	6,591,800	~1,405,522	28
<b>Total for Buildings in This Table</b>	<b>1,043,260</b>	<b>1,343</b>	<b>16,257,400</b>	<b>~6,947,675</b>	<b>66</b>
<b>Total for All Department Buildings</b>	<b>1,043,260</b>	<b>1,343</b>	<b>16,257,400</b>	<b>~6,947,675</b>	<b>66</b>
<b>% of Totals</b>	<b>100%</b>	<b>-</b>	<b>100%</b>	<b>-</b>	<b>-</b>

**Reporting Narrative on Table 5.2: Properties with Largest Water Use Per Capita**

PER CAPITA PER DAY ACHIEVED.

**Planning Narrative on Table 5.2: Properties with Largest Water Use Per Capita**

PER CAPITA PER DAY ACHIEVED.

**Reporting on Properties with Largest Landscape Area Irrigated with Purchased Water**

**Table 5.3: Properties with Largest Landscape Area Irrigated with Purchased Water**

Facility Name	Landscape Area (ft2)
Lincoln Plaza North	125,000
Lincoln Plaza East-West	73,000
<b>Total Landscaping area for Facilities in This Table</b>	<b>198,000</b>
<b>Total Landscaping for All Department Facilities</b>	<b>198,000</b>
<b>% of Totals that is large landscape</b>	<b>100 %</b>

**Reporting Narrative on Table 5.3: Properties with Largest Landscape Area Using Purchased Water**

LP has 200,000 square feet of interior and exterior landscape area. The

landscape around campus contributes to reducing the urban heat island effect as well as providing natural insulation for the Lincoln Plaza North (LPN) building. Due to the cooling tower systems which require chemical treatment for water systems, recycled water for landscaping needs is not possible.

**Planning Narrative on Table 5.3: Properties with Largest Landscape Area Irrigated with Purchased Water**

TURF GRASS ON CAMPUS.

**Reporting on the Department’s Purchased Water Use Trends from 2010 to Present**

**Table 5.4: Department-Wide Purchased Water Use Trends**

Year	Total Occupancy /year	Total Amount Used (Gallons/year)	Percent Change From 2010 Baseline	Per capita Gallons per person per day
<b>Baseline Year</b>				
<b>2010</b>	<b>2,965</b>	<b>26,253,000</b>	<b>-</b>	<b>24.3</b>
<b>2020</b>	<b>2,558</b>	<b>14,417,300</b>	<b>-45%</b>	<b>15.4</b>
<b>2021</b>	<b>2,558</b>	<b>11,812,200</b>	<b>-55%</b>	<b>12.7</b>
<b>2022</b>	<b>1,476</b>	<b>13,131,200</b>	<b>-50%</b>	<b>24.4</b>
<b>2023</b>	<b>1,600</b>	<b>15,278,000</b>	<b>-42%</b>	<b>26.2</b>
<b>2024</b>	<b>1,343</b>	<b>16,257,400</b>	<b>-38%</b>	<b>33.2</b>
<b>2025 Goal</b>	<b>2,000</b>	<b>17,883,140</b>	<b>-32%</b>	<b>24.5</b>

**Reporting Narrative on Table 5.4: Purchased Water Use Trends from 2010 to Present**

LP has had a 33% reduction in potable water usage from the 2010 baseline. Despite having 200,000 square footage of interior and exterior landscape area, CalPERS has been able to meet the mandated 20% reduction through various water saving measures such as reducing window washing on campus, installing and maintaining irrigation drip systems, reducing the number of plants, and waterless carpet cleaning. While a reduction from a 2010 baseline was possible, future reductions seem difficult to maintain. Currently, LP buildings are seeing an upward trend for water usage on campus. Further studies and water saving measures will be necessary such as advanced water management systems and infrastructure upgrades.

NO FUTURE GOAL ESTABLISHED.

**Planning Narrative on Table 5.4: Purchased Water Use Trends from 2010 to Present**

To achieve the water-use reduction goal outlined in Table 5.4, the department is focusing on the following strategies:

**Upgrade Irrigation Infrastructure:** CalPERS plans to consider the replacement of the outdated irrigation system with a modern, water-efficient system that includes smart controllers and moisture sensors to reduce waste by 2027 in order to decrease water usage onsite.

**Implement Water Reuse Systems:** CalPERS is exploring options for capturing and reusing greywater and rainwater for landscape irrigation and non-potable applications on campus that will help reduce onsite water usage.

CalPERS predicts an increase in Energy Star for the reported occupancy which will decrease in per capita per day water usage by almost 25%.

**Reporting on Table 5.5 Total Purchased Water Reductions from 2010 to Present**

**Table 5.5: Total Purchased Water Reductions Achieved in Gallons**

Purchased Water Use	2023 Totals (Gallons) Y	2024 Totals (Gallons) Z
2010 Baseline totals (Gallons) X	26,253,000	26,253,000
Enter each year's total water use in gallons. Y= total gallons for 2023, Z=total gallons for 2024.	15,278,000	16,257,400
+ or -Gallons Compared to Baseline Year	-8,774,600	-7,795,200
Department- Wide Reduction as a % from 2010 baseline	-36%	-32%

**Reporting Narrative on Table 5.5: Purchased Water Use Trends from 2010 to Present**

MANDATED WATER REDUCTION GOALS ACHIEVED.

**Planning Narrative on Table 5.5: Purchased Water Use Trends from 2010 to Present**

MANDATED WATER REDUCTION GOALS ACHIEVED.

## Department Indoor Water Use

### Fixtures and Water Using Appliances Needs Inventories

#### Reporting on Building Indoor Water Fixtures and Water Using Appliances Needs

**Table 5.6: Building Indoor Water Fixtures and Water Using Appliances Needs Inventories Summary**

# of toilets to be replaced	# of urinals to be replaced	# of faucet aerators to be replaced	# of showerheads to be replaced *	# of clothes washers to be replaced	# of garbage disposals to be replaced.	# of pre-rinse valves to be replaced
0	0	0	0	0	0	0

#### Reporting Narrative on Table 5.6: Indoor Building Water Fixtures and Water Using Appliances Needs

WATER CONSERVATION REQUIREMENTS ACHIEVED.

#### Planning Narrative on Table 5.6: Indoor Building Water Fixtures and Water Using Appliances Needs

WATER CONSERVATION REQUIREMENTS ACHIEVED.

## Water Conservation and Water Efficiency Projects for Purchased Water

#### Reporting on Current Indoor Water Efficiency Projects 2020- Present

NO CURRENT PROJECTS.

**Table 5.7: Summary of Current Indoor Water Efficiency Projects Completed 2020-Present or In Progress**

Completed Projects per Year	Water Saved (Gallons/yr.)	Number of Indoor Water Efficiency Projects Completed	Cost Savings per Year
2022	-	-	-
2023	-	-	-
2024	-	-	-

**Reporting Narrative on Table 5.7 Current Indoor Water Efficiency Projects 2020-Present**

NO COMPLETED PROJECTS.

**Planning for Future Indoor Water Efficiency for the Next 5 Years- Building Priority Projects**

**Planning Outline PO0.a: Building Indoor Water Efficiency Priority Projects for the Next 5 Years**

Building Name	Type of Project	Est Water Savings	Est. Start Date
NO PROJECTS PLANNED	-	-	-

**Planning Narrative for PO5.a: Future Indoor Water Efficiency - Building Priority Projects**

INDOOR WATER EFFICIENCY ACHIEVED.

**General Water Management**

**Reporting Narrative on General Water Management BMP**

GENERAL WATER MANAGEMENT BMP ACHIEVED.

**Planning Narrative on General Water Management BMP**

GENERAL WATER MANAGEMENT BMP ACHIEVED.

**Leak Detection and Repair**

**Reporting Narrative on Leak Detection and Repair BMP**

LEAK DETECTION AND REPAIR BMP ACHIEVED.

### Planning Narrative on Leak Detection and Repair BMP

LEAK DETECTION AND REPAIR BMP ACHIEVED.

### Kitchen Water Conservation

#### Reporting Narrative on Kitchen Water Conservation BMPs, Fixtures

KITCHEN WATER CONSERVATION BMP ACHIEVED.

#### Planning Narrative on Kitchen Water Conservation BMPs, Fixtures

KITCHEN WATER CONSERVATION BMP ACHIEVED.

### Laundry Facilities Water Conservation

#### Reporting Narrative on Laundry Facilities Water Conservation BMPS

NO LAUNDRY FACILITIES.

#### Planning Narrative on Laundry Facilities Water Conservation BMPS

NO LAUNDRY FACILITIES.

## Department Total Non-purchased Water Excluding Water Reuse or Recycling

### Reporting on Total Non-purchased Water Excluding Water Reuse or Recycling

Table 5.8: Department-Wide Non-purchased Water Use

Year	Groundwater Basin(s) Name	Number of Domestic or Irrigation Wells	Groundwater Use in Gallons	Surface Water Use in Gallons	Total (Gallons / Year)
Baseline Year 2020	NON-PURCHASED WATER NOT USED	-	-	-	-
2023	-	-	-	-	-
2024	-	-	-	-	-

### Reporting Narrative for Table 5.8: Non-purchased Water Excluding Water Reuse or Recycling

NON-PURCHASED WATER NOT USED.

**Planning Narrative on Table 5.8: Non-purchased Water Excluding Water Reuse or Recycling**

NON-PURCHASED WATER NOT USED.

**Reporting Narrative for Non-purchased Water Use Trends Excluding Water Reuse or Recycling**

NO BOILER WATER TREATMENT NEEDS.

**Planning Narrative on Non-purchased Water Unavailability.**

NO BOILER WATER TREATMENT NEEDS.

**Department Water Energy Nexus Reporting**

**Reporting on Annual Amount of Boiler Makeup Water Used**

**Table 5.9: Annual Amount of Boiler Makeup Water Used**

<b>Boiler Water Use</b>	<b>Year 2023</b>	<b>Year 2024</b>
<b>Amount of Water Used for Makeup (Gallons)</b>	<b>NO DATA</b>	<b>NO DATA</b>
<b>Amount of Water Currently Reused. (Gallons)</b>	<b>NO DATA</b>	<b>NO DATA</b>
<b>Remaining additional water suitable for other purposes (Gallons)</b>	<b>-</b>	<b>-</b>
<b>Totals for all Facilities</b>	<b>-</b>	<b>-</b>

**Reporting Narrative on Table 5.9: Boiler Water Reuse Opportunities**

The boiler water system at LP operates in a closed loop system, resulting in minimal water consumption. The water that is used is attributed to routine maintenance and system repairs which amounts to approximately 100 gallons annually. However, this discharged water is not suitable for reuse due to the chemicals required for water treatment. As a result, the volume of potentially reusable water is negligible when compared with the total water within the closed-loop system.

**Planning Narrative on Table 5.9: Boiler Water Reuse Opportunities**

As the water is chemically treated, CalPERS does not have a plan to reuse boiler water in the future. The current water use is considered efficient.

**Reporting Narrative for Boiler Efficiency**

BOILER WATER USE EFFICIENCY ACHIEVED.

**Planning Narrative for Boiler Efficiency**

BOILER WATER USE EFFICIENCY ACHIEVED.

**Reporting on Cooling Towers' Water Use**

**Table 5.10: Cooling Tower Water Use**

<b>Cooling Tower Water Use</b>	<b>Year 2023</b>	<b>Year 2024</b>
<b>Amount of Water Used for Make-up (Gallons)</b>	<b>4,547,312</b>	<b>5,508,014</b>
<b>Totals for all Facilities</b>	<b>4,547,312</b>	<b>5,508,014</b>

**Reporting Narrative on Table 5.10: Cooling Tower Water Use.**

Currently, all cooling towers are efficient based off quarterly testing done by a third-party contractor and the maintenance performed on these systems by onsite engineers. The readings included in table 5.10 reflect all water that was used for tower cleaning, overflow, and blow-down for total dissolved solids. The slightly larger variance in the amount of water used between 2023 and 2024 is attributed to 2024 being a record hot year.

**Planning Narrative on Table 5.10: Cooling Tower Water Use.**

CalPERS will be revisiting the mechanical processes of the cooling towers and consider efficiency and water savings for any end-of-life updates. As the current systems are efficient, there are no plans to decrease water use for cooling towers at this time.

**Reporting Narrative on Cooling Tower Water Reuse.**

Due to the current water treatment system which chemically treats the water, no amount of water is available for reuse.

**Planning Narrative on Cooling Tower Water reuse.**

CalPERS will be revisiting the mechanical processes of the cooling towers and consider efficiency and water savings for any end-of-life updates.

### Reporting Narrative on Cooling Tower Efficiency

COOLING TOWERS WATER USE EFFICIENCY ACHIEVED.

### Planning Narrative for Cooling Tower Efficiency

COOLING TOWERS WATER USE EFFICIENCY ACHIEVED.

### Reporting on Boiler Needs Inventories Summary

**Table 5.11: Summary of 2024 Boiler Needs Inventory**

Number of meters to purchase and install	Water Treatment to Install, Repair, or Upgrade	Other
NO BOILER WATER TREATMENT NEEDS	-	-
<b>Totals</b>	-	-

### Reporting Narrative on Table 5.11: Boiler Needs

NO BOILER WATER TREATMENT NEEDS.

### Planning Narrative on Table 5.11: Boiler Needs

NO BOILER WATER TREATMENT NEEDS.

### Reporting on Cooling Systems Equipment Needs Inventory Summary

**Table 5.12: Summary of 2024 Cooling System Needs Inventory**

Equipment Needed	Equipment Totals for all Facilities
Meters	NO COOLING SYSTEMS NEEDS
Water Treatment	-
Other	-

### Reporting Narrative for Table 5.12: Cooling Systems Needs

NO COOLING SYSTEMS NEEDS.

### Planning Narrative for Table 5.12: Cooling Systems Needs

NO COOLING SYSTEMS NEEDS.

### Reporting on Efficiency Projects for Boilers and Cooling Systems 2020-Present

**Table 5.13: Summary of Efficiency Projects for Boilers and Cooling Systems**

Project Type	Water Saved (Gallons/yr.)	Number of Completed Projects	Number of Projects in Progress
<b>2022</b>	<b>NO CURRENT PROJECTS</b>	-	-
<b>2023</b>	-	-	-
<b>2024</b>	-	-	-

### Reporting Narrative on Table 5.13: Efficiency Projects for Boilers and Cooling Systems

NO CURRENT PROJECTS.

### Reporting Narrative for BMPs for Building Boilers and Cooling Systems

BUILDING BOILERS AND COOLING SYSTEMS BMPS ACHIEVED.

### Planning Narrative for BMPs for Building Boilers and Cooling Systems

BUILDING BOILERS AND COOLING SYSTEMS BMPS ACHIEVED.

## Department Outdoor Water Use:

### Reporting on Outdoor Irrigation Hardware Inventory

Table 5.14: Summary of 2024 Outdoor Irrigation Hardware Needs Inventory

Irrigation Hardware Type	Total Hardware Needed
Separate meters or sub-meters	0
Irrigation controllers required with weather or soil moisture adjustment and flow sensing capabilities	0
<a href="#">Backflow Prevention</a> devices	0
Flow sensors to be purchased and installed	0
Automatic rain shut-off devices	0
New pressure regulators	0
New hydrozone(s)	0
New valves	0
Filter assemblies	0
Drip irrigation emitters	0
Booster pumps	0
Rotary nozzles or other high efficiency nozzles	0

### Reporting Narrative for Table 5.14: Outdoor Irrigation Hardware Needs

LP has significant outdoor irrigation requirements that are managed through a third-party landscaping vendor. This vendor is responsible for both the operation and maintenance of the irrigation systems as well as tracking and monitoring inventory related to hardware, tools, and other associated equipment. All equipment and supply management is independently managed by the vendor under the terms of their service agreement.

### Planning Narrative for Table 5.14: Outdoor Irrigation Hardware Needs

NO IRRIGATION HARDWARE NEEDS.

### Reporting on Outdoor Irrigation Hardware Water Efficiency Projects

**Table 5.15: Summary of Outdoor Hardware Water Efficiency Projects Completed 2020 -Present or In Progress**

Year Funded	Water Saved (Gallons/yr.)	Completed Hardware Water Efficiency Projects	Hardware Water Efficiency Projects in Progress
<b>2022</b>	<b>NO CURRENT PROJECTS</b>	-	-
<b>2023</b>	-	-	-
<b>2024</b>	-	-	-

### Planning Narrative for Table 5.15: Irrigation Hardware Water Efficiency Projects

UPGRADES TO IRRIGATION HARDWARE ACHIEVED.

### Reporting Narrative on Irrigation Hardware Maintenance BMPs

BEST MANAGEMENT PRACTICES ACHIEVED.

### Planning Narrative on Irrigation Hardware Maintenance BMPs

BEST MANAGEMENT PRACTICES ACHIEVED.

### Reporting on Living Landscape Inventory

**Table 5.16: All Facilities With > 500 sq. ft. of Living Landscape Inventory**

Facilities with Landscape >500 Sq. ft.)	Total Turf (sq. ft.)	Number Of Historic Sites or Memorials	MWELo Landscape Area (sq. ft.)	Climate Appropriate Landscape Area (sq. ft.)	Ground-water Basin Name	Irrigation Source is Groundwater (Yes or No)	Irrigation source is Surface Water (Yes or No)	Irrigation source is Re-use or Recycled Water
Lincoln Plaza North	0	0	125,000	125,000	0	No	No	No
Lincoln Plaza East-West	0	0	73,000	73,000	0	No	No	No

### Reporting Narrative on Table 5.16: Living Landscape Inventory

The greenery surrounding LP buildings enhances the overall aesthetic in addition to reflecting the values and culture of CalPERS. The living landscape is thoughtfully designed to be drought-tolerant, incorporating a selection of plants that are native to California. This sustainable approach not only conserves water but also provides functional benefits such as reducing the urban heat island effect and helping to insulate LPN from extreme temperatures.

Historical features and designated memorials are not part of the current living landscape installation.

### Reporting on Living Landscape Upgrades for the Next 5 Years

#### Planning Outline PO5.b: Planned Projects for Living Landscape Upgrades for the Next 5 Years

Landscape >500sq. ft.) Facility Name	Replace Turf (Sq. ft.)	MWELo landscape area Upgrade (sq. ft.)	Climate appropriate landscape Upgrade area (sq. ft.)	Date for Achieving Upgrades
Lincoln Plaza North	0	125,000	125,000	-
Lincoln Plaza East-West	0	73,000	73,000	-

**Planning Narrative on PO5.b Living Landscape Upgrades for the Next 5 Years**

MWELo LANDSCAPE ACHIEVED.

**Planning Narrative for Remaining non MWELo Compliant Living Landscape Upgrades**

MWELo LANDSCAPE ACHIEVED.

**Reporting on Living Landscape Water Efficiency Projects 2020 – Present**

**Table 5.17: Summary of Completed Living Landscaping Water Efficiency Projects**

Year Funded	Est Annual Water Savings (Gallons)	Sum of MWELo Landscape installed (sq. ft.)	Sum of Climate Appropriate Landscape Installed (sq. ft.)
<b>2022</b>	<b>NO CURRENT PROJECTS</b>	-	-
<b>2023</b>	-	-	-
<b>2024</b>	-	-	-

**Reporting Narrative on Living Landscape BMPs**

LIVING LANDSCAPE BMPs ACHIEVED.

**Planning Narrative on Living Landscape BMPs**

LIVING LANDSCAPE BMPs ACHIEVED.

**Reporting on Large Living Landscape Inventory (>20,000 sq. ft.)**

**Table 5.18: Large Landscape Inventory (>20,000 sq. ft.) and the Required Associated [Landscape Water Budget](#) Schedule**

Name of Facility Sites/Locations with > 20,000 sq. ft. of Landscaping	Landscape Area per Facility (Sq. Ft.)	Water Budget per Facility (Gallons)	EPA WaterSense or Irrigation Association Certified Staff per Facility
<b>Lincoln Plaza North</b>	<b>125,000</b>	<b>NA</b>	<b>NA</b>
<b>Lincoln Plaza East-West</b>	<b>73,000</b>	<b>NA</b>	<b>NA</b>

**Reporting on Achieving Large Living Landscape Requirements (>20,000 sq. ft.)**

CalPERS does not currently have a water budget across LP buildings and instead a SMART Control Technology is used. SMART Control Technology uses sensors, real-time data, and automated controllers to water landscapes more efficiently. While useful, this equipment needs to be upgraded for more accurate tracking of real-time data.

CalPERS will be assessing water usage to determine the practicality of a water budget for current landscaping uses however, due to the significant amount of drought tolerant plants that cover the LPN building, this is challenging. The plants are not only a source of greenery in an urban environment, but they also help insulate the buildings from extreme temperatures.

**Planning Outline PO5.c: Achieving Large Living Landscape Area Requirements (>20,000 sq. ft.)**

Facility Name	Landscaping sq. ft. to be upgraded to MWELO standards	Water Budget per Facility (Gallons)	Ground Water Basin	# of staff Needing EPA WaterSense certification	Date for Achieving
Lincoln Plaza North	125,000	-	No Ground Water Basin	-	-
Lincoln Plaza East-West	73,000	-	No Ground Water Basin	-	-

**Planning Narrative on PO5.c: Achieving Large Living Landscape Requirements (>20,000 sq. ft.)**

Currently all living landscapes have been upgraded to MWELO standards. Future improvements to landscaping needs will require a third-party vendor to determine a water budget.

**Critically Over-drafted Groundwater Basins and Water Shortage Contingency Plans**

**Reporting on Buildings in Critically Over-drafted Groundwater Basins**

**Table 5.19: Buildings in Designated Critically Over-drafted Groundwater Basins**

Building Name	Basin Name	Amount of water Used 2023 (Gallons)	Amount of water Used 2024 (Gallons)
NO FACILITIES	-	-	-

### Reporting on Buildings with Urban Water Shortage Contingency Plans

**Table 5.20: Buildings with Urban Water Shortage Contingency Plans**

Building Name	Name of Water Supplier with Urban Water Shortage Contingency Plans	Year of Publication or Update
-	-	-

### Reporting Narrative for Table 5.20: Urban Water Shortage Contingency Plans

NO BUILDINGS SUBJECT TO PLANS.

### Department's Urban Water Shortage Contingency Plan

#### Reporting Narrative for Department's Contingency Plan

NO BUILDINGS SUBJECT TO PLANS.

#### Planning Narrative on Department's Contingency Plan

NO BUILDINGS SUBJECT TO PLANS.

# CHAPTER 6 – FACILITIES’ CONSTRUCTION AND OPERATIONS

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## Department Mission and Facilities Construction and Operations

CalPERS is committed to designing, operating, and maintaining its facilities in a manner that supports employee health and safety, operational reliability, and long-term sustainability. Facility construction and operations are guided by established green building standards and best management practices that emphasize energy and water efficiency, high indoor environmental quality, responsible materials use, and reduced emissions. Through LEED-certified operations, sustainable cleaning and maintenance practices, integrated pest management, and efficient HVAC operations, CalPERS seeks to minimize environmental impacts while maintaining comfortable, functional, and resilient work environments. These efforts support statewide sustainability mandates and reinforce CalPERS’ responsibility as a long-term steward of public assets.

## Building Design and Construction

### New Building LEED Certification

NO NEW BUILDINGS.

**Table 6.1: New Building Construction since July 1, 2012**

Facility Name	LEED Certification Type & Level Achieved	Commissioning Performed (Y/N)
-	-	-
-	-	-

### Reporting Narrative for Table 6.1: New Building Construction since July 1, 2021

NO NEW BUILDINGS.

### Planning Narrative for Table 6.1: New Building Construction since July 1, 2012

NO NEW BUILDINGS.

## LEED for Existing Buildings Operations and Maintenance

**Table 6.2: Large Building LEED Certification for Existing Buildings**

<b>Number of Buildings over 50,000 sq. ft. and eligible for LEED EBOM</b>	<b>Number of Building over 50,000 sq. ft. that have achieved LEED EBOM</b>	<b>Percentage of Existing Buildings over 50,000 sq. ft. that have achieved LEED EBOM</b>
<b>2</b>	<b>2</b>	<b>100%</b>

**Reporting Narrative for Table 6.2: Large Building LEED Certification**

LEED EBOM REQUIREMENTS ACHIEVED.

**Planning Narrative for Table 6.2: Large Building LEED Certification**

LEED EBOM REQUIREMENTS ACHIEVED.

**Indoor Environmental Quality (IEQ)**

**Daylighting and Views in New Construction**

**Reporting Narrative for Daylighting and Views in New Construction**

NO NEW CONSTRUCTION.

**Planning Narrative for Daylighting and Views in New Construction**

NO NEW CONSTRUCTION.

**CALGreen Tier 1 Indoor Environmental Quality Measures**

**Reporting Narrative for CALGreen Tier 1 Indoor Environmental Quality Measures**

INDOOR ENVIRONMENTAL QUALITY, CALGREEN MEASURES ACHIEVED.

**Planning Narrative for CALGreen Tier 1 Indoor Environmental Quality Measures**

INDOOR ENVIRONMENTAL QUALITY, CALGREEN MEASURES ACHIEVED.

**IEQ-New Buildings and Renovation Measures**

**Reporting Narrative for IEQ-New Buildings and Renovation Measures**

IEQ-NEW BUILDINGS AND RENOVATION MEASURES ACHIEVED.

**Planning Narrative for IEQ-New Buildings and Renovation Measures**

IEQ-NEW BUILDINGS AND RENOVATION MEASURES ACHIEVED.

## **Furnishing Standards**

### **Reporting Narrative for Compliance with Furnishing Standards**

While the department does not currently have a formal review process in place for furnishing standards, it recognizes the need to more thoroughly review and apply these requirements. The Operations Support Services Division is responsible for furnishing purchases and will require additional support, guidance, and resources to properly review the standards and ensure they are effectively implemented in future purchasing decisions.

### **Planning Narrative for Compliance with Furnishing Standards**

To improve alignment with at least one of the furnishing standards, the department plans to conduct a thorough review of the applicable requirements and ensure they are intentionally implemented in future furnishing purchases. This includes integrating the standards into existing purchasing practices, coordinating with Space Planning to apply them early in the decision-making process, and using the standards as a reference when evaluating product options. While there is not currently a formal review process, these actions will help establish a more consistent approach going forward.

## **Green Seal Cleaning Products**

### **Reporting Narrative on Using Green Seal Cleaning Products**

GREEN CLEANING PRODUCTS STANDARDS ACHIEVED via Green Seal GS-42 and CalGreen Section A5.504.5.1

### **Planning Narrative on Using Green Seal Cleaning Products**

GREEN CLEANING PRODUCTS STANDARDS ACHIEVED via Green Seal GS-42 and CalGreen Section A5.504.5.1

## **Cleaning Procedures – Various Standards**

### **Reporting Narrative for Cleaning Procedures – Various Standards**

CLEANING PROCEDURES STANDARDS ACHIEVED via Green Seal GS-42 and CalGreen Section A5.504.5.1

### **Planning Narrative for Cleaning Procedures – Various Standards**

CLEANING PROCEDURES STANDARDS ACHIEVED via Green Seal GS-42 and CalGreen Section A5.504.5.1

## **Cleaning Procedures – Title 8, Section 3362**

### **Reporting Narrative for Cleaning Procedures TITLE 8 SECTION 3362**

TITLE 8 SECTION 3362 CLEANING PROCEDURES STANDARDS ACHIEVED.

### **Planning Narrative for Cleaning Procedures TITLE 8 SECTION 3362**

TITLE 8 SECTION 3362 CLEANING PROCEDURES STANDARDS ACHIEVED.

## **HVAC Operation Requirements**

### **Reporting Narrative for HVAC Operations**

HVAC OPERATIONS ACHIEVED.

### **Planning Narrative for HVAC Operations**

OPERATIONS ACHIEVED.

## **HVAC Inspection Requirements**

### **Reporting Narrative for HVAC Inspection Requirements**

HVAC INSPECTION REQUIREMENTS ACHIEVED.

### **Planning Narrative for HVAC Inspection Requirements**

HVAC INSPECTION REQUIREMENTS ACHIEVED.

## **Integrated Pest Management (IPM)**

### **Table 6.3: Self-Managed Pest Control**

NO SELF-MANAGED PEST CONTROL.

**Table 6.3: Self-Managed Pest Control**

<b>Self-Managed Pest Control</b>	<b>Y/N</b>	<b>Is there an IPM plan? (Y/N)</b>
<b>Does your department self-manage pest control for any and or all Department buildings and the associated building landscapes?</b>	<b>NO</b>	<b>YES</b>
<b>Does your department self-manage pest control for any and or all Department mission-related infrastructure including, but not limited to, highway medians and shoulders, levees, reservoirs, canals, campgrounds and recreation areas?</b>	<b>NO</b>	<b>YES</b>

**Reporting Narrative for Table 6.3: Self-Managed Pest Control**

NO SELF-MANAGED PEST CONTROL.

**Planning Narrative for Table 6.3 Self-Managed Pest Control**

NO SELF-MANAGED PEST CONTROL.

**Table 6.4: External Pest Control Contracts**

<b>External Pest Control Contract</b>	<b>Y/N</b>	<b>Is there an IPM plan? (Y/N)</b>	<b>Contract Renewal Date</b>
<b>Does your department externally contract pest control for any and or all Department buildings and the associated building landscapes? List all pest control contracts below. Add extra lines as required.</b>	<b>Yes</b>	<b>Yes</b>	<b>-</b>
<b>Building Pest Control Contracts</b>	<b>Yes (Eco-Tech)</b>	<b>Yes</b>	<b>6/30/2028</b>
<b>Does your department externally contract pest control for any and or all Department mission-related infrastructure including, but not limited to, highway medians and shoulders, levees, reservoirs, canals, campgrounds and recreation areas? List all pest control contracts below. Add extra lines as required.</b>	<b>No</b>	<b>No</b>	<b>-</b>
<b>Infrastructure Pest Control Contracts</b>	<b>No</b>	<b>No</b>	<b>-</b>

**Reporting Narrative for Table 6.4: Pest Management Contracts**

PEST MANAGEMENT REQUIREMENTS ACHIEVED.

**Planning Narrative for Table 6.4 Pest Management Contracts**

INTERGRATED PEST MANAGEMENT REQUIREMENTS ACHIEVED.

**Table 6.5: Top 5 Department Pests Requiring Pest Control**

<b>Pest Name (common)</b>	<b>Pest Control Method(s)</b>
<b>Turkistan Cockroaches</b>	<b>Baiting and traps</b>
<b>Mice</b>	<b>Baiting exterior &amp; traps Interior</b>
<b>Ants</b>	<b>Baiting</b>
<b>Rats</b>	<b>Baiting exterior &amp; traps interior</b>
<b>Phorid Flies</b>	<b>Drain and sewer treatment</b>

**Reporting Narrative for Table 6.5: Top 5 Department Pests Requiring Pest Control**

<b>Pest</b>	<b>Reasons for Concern</b>	<b>Previous IPM Method</b>
<b>Turkistan Cockroaches</b>	These roaches are fast breeders and often infest warm, moist environments such as basements, utility areas, and food storage areas. They can carry pathogens and contaminate food and surfaces, posing a health risk. Their presence may indicate sanitation issues.	<b>No change in methods</b>
<b>Mice</b>	Mice can spread diseases (e.g., hantavirus, salmonella), chew on wiring and structures causing damage or fire risks and contaminate food. Their small size allows them to enter buildings through small openings, making them a persistent issue.	<b>No change in methods</b>
<b>Ants</b>	Ant infestations are difficult to control once established. They contaminate food, and some species can bite or sting. Their presence in food service or sensitive work areas can lead to compliance violations.	<b>No change in methods</b>
<b>Rats</b>	Rats pose serious health risks, spread disease, and cause significant structural damage by gnawing. Their feces and urine contaminate food and surfaces, and their presence often suggests broader sanitation or structural issues.	<b>No change in methods</b>

Pest	Reasons for Concern	Previous IPM Method
<b>Phorid Flies</b>	These flies breed in decaying organic material and drains. Their presence indicates unsanitary conditions. In healthcare or food service environments, they are especially concerning due to their potential to carry pathogens.	<b>No change in methods</b>

**Planning Narrative for Table 6.5 Top 5 Department Pests Requiring Pest Control**

**Fossil Fuel Landscaping Equipment Replacement with Low Emitting Landscaping Equipment**

**Reporting Narrative for Replacing Fossil Fuel Landscaping Equipment**

NO FOSSIL FUEL LANDSCAPING EQUIPMENT.

CalPERS landscaping is maintained under a five-year service contract with a third-party landscaping company. As part of this agreement, the landscaping crew ensures that only non-fossil fuel equipment is used onsite. Additionally, the crew is responsible for managing the health and wellbeing of over 100 plants across the Lincoln Plaza (LP) buildings.

**Planning Narrative for Replacing Fossil Fuel Landscaping Equipment**

NO FOSSIL FUEL LANDSCAPING EQUIPMENT.

**Location Efficiency**

**Smart Location Score for New Leases after January 1, 2020**

**Table 6.6: Smart Location Score for New Leases after January 1, 2020**

Facility name	Smart Location Calculator Score
<b>Lease 1</b>	<b>NO NEW LEASES</b>
<b>Average</b>	-
<b>Baseline</b>	-
<b>% change from Baseline</b>	-

**Reporting Narrative for Table 6.6: Smart Location Score after January 1, 2020**

NO NEW LEASES.

**Planning Narrative for Table 6.6: Smart Location Score after January 1, 2020**

NO NEW LEASES.

### Current (non-expired) Leases Prior to 2020 - Lowest Smart Location Score

**Table 6.7: Current (non-expired) Leases Prior to 2020 - Lowest Smart Location Score**

Facility name	Smart Location Calculator Score	Lease Renewal Date
Glendale Regional Office	87	11/30/2027
San Jose Regional Office	70	5/31/2027
Walnut Creek Regional Office	65	TBD
San Diego Regional Office	44	5/31/2026
Fresno Regional Office	34	11/30/2027
Orange Regional Office	7	8/31/2025
San Bernardino Regional Office	6	11/30/2025

### Reporting Narrative on Table 6.7: Current (non-expired) Leases Prior to 2020 - Lowest Smart Location Score

CalPERS will renew most of its regional office leases for the foreseeable future. The Walnut Creek regional office lease, however, will not be renewed, as the landlord will be changing the building's purpose, requiring CalPERS to close or relocate this office. Financial and operational constraints prevent the relocation of most regional offices, specifically, relocating would result in significant cost increases, disrupt member services, and reduce accessibility for staff and stakeholders already established in these regions. As a result, CalPERS will maintain most current lease agreements while seeking to mitigate location inefficiencies through telework and ridesharing, in an effort to increase average efficiency scores.

### Planning Narrative on Table 6.7: Current (non-expired) Leases Prior to 2020 - Lowest Smart Location Score

To reduce the impacts of low smart location scores at the regional offices, CalPERS employs several strategies. Teleworking and hybrid schedules help decrease the number of commute trips, while ridesharing and commuter incentive programs encourage alternatives to single-occupancy vehicle travel. Additionally, public transportation options are promoted where available.

# CHAPTER 7- WASTE MANAGEMENT AND RECYCLING

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## Department Mission and Waste Management and Recycling

CalPERS' mission to deliver retirement and health benefits to its members drives operations that support a large, centralized office environment. The Lincoln Plaza (LP) campus, totaling about 1 million square feet and supporting more than 2,000 team members, consultants, vendors, and visitors, generates waste through daily operations, including routine office work, food service, and landscaping maintenance across three interconnected facilities. These activities produce mixed waste such as office paper, packaging materials, food waste, and landscaping debris.

CalPERS' mission also influences its recycling and waste diversion programs, as the organization prioritizes responsible resource management and environmental stewardship within its sustainability goals. LP facilities are equipped with tri-sort bins for compost, recycling, and landfill disposal in all breakrooms and dining areas, enabling team members to participate in proper waste diversion efforts. Additionally, the department has implemented an organics recycling program to capture food waste from the café and breakrooms, paper towels from restrooms, and landscaping clippings. CalPERS also participates in the Chefs to End Hunger program to recover edible food and reduce landfill contributions. These initiatives demonstrate how CalPERS' operational priorities directly result in the adoption of comprehensive waste diversion and recycling practices on campus.

Unique operational elements impacting CalPERS' waste generation and recycling include the onsite café, landscaping operations, and centralized procurement and facilities management functions. Each of these activities produces distinct waste streams such as food waste from the café, green waste from landscaping, and surplus office materials from procurement and facilities management. These waste streams create opportunities for large-scale recycling and reuse programs, such as the Department of General Services' Surplus Program and CalPERS' internal office furniture and supplies reuse programs.

The primary challenges to implementing waste reduction and recycling efforts include maintaining consistent team member participation and minimizing contamination in recycling and compost streams. These issues can hinder the effectiveness of waste diversion programs and reduce the quality of recyclable and compostable materials collected. To address these challenges, CalPERS

continues to enhance enterprise education, update its waste signage campus-wide, and conduct ongoing waste audits to improve sorting accuracy and measure progress toward statewide waste diversion initiatives and targets. By taking these actions, CalPERS demonstrates a proactive approach to overcoming operational barriers and advancing waste reduction and recycling goals.

## **Waste and Recycling Programs**

### **Designated Waste and Recycle Coordinator and Program Basics**

#### **Reporting Narrative on Designated Waste and Recycle Coordinator and Program Basics**

CalPERS buildings are equipped with desktside recycling bins as well as common area recycling bins. Additionally, compost bins are available in every bathroom and breakroom, ensuring team members can properly sort waste across all facilities. All buildings also feature waste diversion signage; updated tri-sort signage has been installed throughout campus to support consistent recycling, composting, and landfill diversion practices. In addition, CalPERS' Sustainability team conducts ongoing enterprise outreach and training to promote waste diversion and proper methods, providing communications and educational materials both in-person and through online resources. These measures demonstrate CalPERS' commitment to providing the necessary infrastructure and education to enable effective waste sorting and diversion, supporting the organization's sustainability and waste reduction objectives.

CalPERS is currently conducting a multi-year series of waste audits to assess the adequacy and condition of receptacles, signage, and training opportunities. These audits will provide a clear and comprehensive review of current waste protocols and help identify improvements to enhance compliance with statewide recycling requirements. The Sustainability team is responsible for leading this process and coordinating any necessary updates to receptacles, signage, and enterprise training. By establishing this review process and assigning clear roles and responsibilities, CalPERS demonstrates its commitment to ongoing improvement and regulatory compliance in its waste diversion and recycling efforts.

#### **Planning Narrative on Designated Waste and Recycle Coordinator and Program Basics**

DESIGNATED WASTE, RECYCLE COORDINATOR, AND PROGRAM BASICS ACHIEVED.

## SARC Report

**Table 7.1: State Agency Reporting Center (SARC) Report on Total Waste per Capita**

Per Capita Disposal Rate	2023	2024	Total Waste 2023	Total Waste 2024	% Change from 2023/2024
-	0.24	0.23	103.69 Tons	106.89 Tons	-4.17%

### Reporting Narrative on Table 7.1: SARC Report on Total Waste per Capita

CalPERS' LP campus consists of two distinct buildings totaling 1 million square feet and supporting more than 2,000 team members, consultants, vendors, and visitors. The 2024 per capita disposal rate was 0.23, up from 0.17 in 2020, representing a 35.3% increase. This change is primarily attributed to reduced onsite population during the COVID-19 pandemic, when the majority of team members and consultants were teleworking and not onsite. CalPERS was among the first state agencies to return to office in 2022, implementing a hybrid schedule requiring three days onsite and two days of telework each week. As team members moved to a hybrid schedule, waste generation per capita increased accordingly. Despite this increase, CalPERS remains well below the statewide target of 0.60, demonstrating continued success in exceeding its waste reduction goal.

CalPERS exceeds its waste reduction goals by diverting nearly 30 tons of recyclables each year through a comprehensive recycling and organics recycling program, which captures food waste from the café and breakrooms, paper towels from restrooms, and landscaping clippings. CalPERS also participates in the Chefs to End Hunger program, donating surplus prepared food from the café to local food distribution centers.

This success is further supported by CalPERS' strong waste prevention and reuse programs, including participation in the Department of General Services' Surplus Program and an internal onsite office furniture and supplies reuse program. CalPERS also maintains a Recycled Content Product (RCP) procurement policy and active material exchange programs, all of which reinforce its commitment to resource conservation and sustainable operations. These initiatives not only reduce the amount of waste sent to landfill, but also demonstrate CalPERS' proactive approach to sustainability by prioritizing waste prevention, reuse, and the procurement of environmentally responsible products.

### Planning Narrative on Table 7.1: SARC Report on Total Waste per Capita

PER CAPITA DISPOSAL RATE ACHIEVED.

## **Recycling Program and Practices**

### **Reporting Narrative on Recycling Program and Practices**

CalPERS has a robust recycling program that includes tri-sort bins in all breakrooms and dining areas. As a result of these efforts, CalPERS has been able to annually recycle almost 30 tons of materials that are generated at LP. The greatest challenge to improving this effort is ensuring that team members can make behavioral changes in favor of recycling and composting. Without these changes, contamination remains a significant barrier to increasing diversion of otherwise recyclable/compostable material.

Beginning in July 2024, CalPERS began a series of campus-wide waste audits that will span several years. The goal of this effort is to determine the composition and quantities of waste being generated, measure effectiveness of existing waste management systems, and identify opportunities for improving waste management systems and strategies. As a result, CalPERS is currently working on updating signage across campus to better inform team members about accurately sorting their waste.

### **Planning Narrative on Recycling Program and Practices**

RECYCLING PRACTICES ACHIEVED.

## **Organics Recycling**

### **Reporting Narrative on Organic Recycling Program and Practices**

LP buildings generate a significant amount of organic material from several sources, including the café, organic waste from breakrooms, and landscaping activities. These streams contribute to the overall waste footprint and present key opportunities for organic waste diversion through composting and improved sorting practices.

CalPERS partners with a third-party building management company to ensure that janitorial staff, landscaping team, and other vendors comply with CalPERS' organics recycling goal. This partnership helps ensure the availability of adequate organics waste bins and appropriate signage. Currently, all facilities have organics recycling services in place. The largest challenge remains in breakrooms as CalPERS relies on team members to sort waste accurately and avoid contamination of waste streams. To further increase organics recycling on campus, CalPERS is working on updating all existing signage across buildings.

## Planning Narrative on Organic Recycling Program and Practices

ORGANIC RECYCLING REQUIREMENTS ACHIEVED.

### Edible Food Recover Program

**Table 7.2: Edible Food Recovery Program Elements**

Building Name	Cafeteria >5,000 sq. ft. (Enter sq. ft.)	Cafeteria +250 Seats (Enter number of seats)	Cafeteria Open in 2023?	Cafeteria Open in 2024?	Food Recovery Agreement (Yes, No or Unknown)
Lincoln Plaza Café	9,008	-	Yes	Yes	Yes

### Reporting Narrative on Table 7.2: Edible Food Recovery Program Elements

Lincoln Plaza North (LPN) café participates in the edible food recovery program.

### Planning Narrative on Table 7.2: Edible Food Recovery Program

EDIBLE FOOD RECOVERY PROGRAM ACHIEVED.

Chefs to End Hunger program.

### Food Service Items Program

**Table 7.3: Food Service Concessionaire Items Program Elements**

Building Name	Prepared Food Service Operations Type	Food Service Packaging Meets Requirements	Process in Place for selecting Food Services that meet Packaging Requirements
Lincoln Plaza North	Cafeteria	Yes	Yes

### Reporting Narrative on Table 7.3: Food Service Items Program

The CalPERS café currently participates in the acquisition of foodservice items through the SPARS catalog, including clamshell containers, soup containers, utensils, and paper napkins. Partnering with a large foodservice company generally allows for efficient procurement of these supplies. However, the café has experienced supply chain disruptions in the past, notably during the COVID-19 pandemic and the implementation of large-scale tariffs. These disruptions

highlight the importance of maintaining flexible procurement strategies and contingency plans to ensure continued access to necessary foodservice items and to support uninterrupted café operations.

The most significant ongoing challenge lies in aligning purchased materials with CalPERS' waste diversion goals, specifically in supporting composting efforts through tri-sort waste bins. At present, only clamshell containers are fully compostable. Soup containers, which contain a plastic liner, must be disposed of in the trash, limiting progress toward zero waste initiatives. This demonstrates that material composition directly impacts CalPERS' ability to achieve its waste diversion and composting objectives, and highlights the need for continued evaluation and procurement of fully compostable alternatives to support zero waste goals.

Looking ahead, CalPERS is exploring opportunities to advance its sustainability efforts by transitioning the café to fully compostable bamboo utensils in place of traditional plastic cutlery, and seeking food storage containers that are compostable whenever possible and within budgetary constraints. These efforts underscore CalPERS' proactive approach to reducing landfill waste and supporting its waste diversion and composting goals, while also considering cost-effectiveness.

### Planning Narrative on Table 7.3: Food Service Items Program

FOOD SERVICE ITEMS PROGRAM ACHIEVED.

## Hazardous Waste Materials

### Reporting on Hazardous Waste Materials

**Table 7.4: Hazardous Waste Materials**

Department -Wide Hazardous Material Name	Department Total Hazardous Material Amount (lbs.)
Laboratory Waste Chemicals	3
Off-Spec, Aged, Or Surplus Organics	25
Ignitable Waste	140

### Reporting Narrative for Table 7.4: Hazardous Waste Materials

CalPERS generates a small amount of hazardous waste on an infrequent and irregular basis, with each generation event typically being unique from year to year. Hazardous waste disposal is managed through a contracted, licensed vendor who ensures all materials are disposed of in accordance with applicable environmental regulations and best practices. This approach demonstrates

CalPERS' commitment to regulatory compliance and environmental stewardship, even for waste streams that occur only occasionally.

### Planning Narrative for Table 7.4: Hazardous Waste Materials

Due to the very limited and infrequent use of hazardous materials at CalPERS, opportunities to substitute them with less hazardous alternatives are minimal. Each use case is highly specific, and the small quantities involved make it challenging to implement viable substitutions. At this time, there is no formal plan in place to replace or phase out the use of hazardous substances onsite.

## Universal Waste Program

### Reporting on Department-Wide Universal Waste Materials

**Table 7.5: Reporting on Department- Wide Universal Waste Materials**

Category	Universal Waste Contract in Place YES or NO
Electronic Waste	YES
Batteries	YES
CRTS	-
CRT glass	-
Lamps	YES
Mercury Wastes	YES
Non-empty aerosol cans	YES
PV modules	YES

### Reporting Narrative for Table 7.5: Department-Wide Universal Waste Materials

DEPARTMENT WIDE UNIVERSAL WASTE MATERIALS DISPOSAL ACHIEVED.

### Planning Narrative for Table 7.5: Department-Wide Universal Waste Materials

DEPARTMENT WIDE UNIVERSAL WASTE MATERIALS DISPOSAL ACHIEVED.

## Material Exchange Programs

### Reporting Narrative on Department-Wide Material Exchange

CalPERS maintains a virtual office supply room that allows team members from different divisions to post unwanted office supplies for reuse across the enterprise. This program promotes internal material exchange by reducing waste and ensuring surplus items, such as binders, folders, paper, and small

office equipment are repurposed rather than discarded. The initiative supports CalPERS' broader sustainability goals by minimizing unnecessary purchases and extending the useful life of materials already on hand. This demonstrates CalPERS' commitment to resource conservation and waste reduction through practical, organization-wide reuse strategies.

The primary challenge with the Virtual Office Supply Room is ensuring consistent participation and awareness among team members. To strengthen engagement, CalPERS recognizes the need for ongoing education and outreach to remind the enterprise of the program's availability and benefits. These efforts will help increase utilization, reduce waste, and reinforce CalPERS' commitment to sustainable operations and resource conservation.

### **Planning Narrative on Department-Wide Material Exchange**

CalPERS promotes material reuse through its toner and inkjet cartridge recycling program, as well as a battery recycling program implemented across all LP buildings. These efforts help reduce waste, support environmentally responsible operations, and align with CalPERS' sustainability goals.

The primary challenge in promoting material reuse is ensuring that all team members are aware of and participate in these recycling programs, particularly the battery recycling initiative. Continued education and outreach will be essential for increasing participation and ensuring consistent engagement.

## **Waste Prevention Program**

### **Reporting Narrative on Department-Wide Waste Prevention**

CalPERS promotes waste prevention through multiple ongoing programs and initiatives aimed at reducing waste generation at the source and encouraging reuse. One example is the Virtual Office Supply Room, an internal platform that allows team members across the enterprise to post surplus office supplies and equipment for reuse by colleagues, thereby minimizing the need for new purchases and keeping usable materials out of the waste stream.

CalPERS also participates in Chefs to End Hunger, an edible food recovery program that donates surplus prepared meals from the onsite café to local food distribution centers. This initiative helps prevent edible food from entering the landfill while supporting community food security. By participating in this program, CalPERS demonstrates its commitment to both waste reduction and social responsibility.

Additionally, CalPERS continues to reduce paper-use by transitioning to online forms and electronic document storage. Many internal workflows that were

once paper based are now processed digitally, further preventing unnecessary material waste.

### **Planning Narrative on Department-Wide Waste Prevention**

While the above efforts have been successful, challenges remain in ensuring consistent participation and awareness among all team members. Enhancing communication and training about existing waste prevention programs as well as encouraging enterprise-wide engagement will help maximize their impact.

## **Reuse Program**

### **Reporting Narrative for Department-Wide Material Reuse**

CalPERS' reuse initiatives include established toner and ink cartridge recycling programs, as well as a battery recycling program to ensure responsible disposal and material recovery. CalPERS has a formal surplus process that prioritizes reusing or reallocating resources whenever possible, both internally and externally through channels such as DGS and other agencies. These programs are maintained and operated by the OSSD Facilities and Asset Management teams, in collaboration with CalPERS' Building Management and their contractors.

Furthermore, the department uses reusable pallets and boxes, and reuses packing materials to minimize single-use waste and promote sustainable shipping and storage practices.

Challenges to waste prevention include maintaining enterprise awareness of reuse programs and ensuring consistent participation across all business areas. Continued communication, training, and collaboration with building management and contractors are essential for strengthening program participation and maximizing waste reduction outcomes.

### **Planning Narrative for Department-Wide Material Reuse**

To further improve its waste prevention efforts, CalPERS plans to enhance team member awareness of these programs through enterprise-wide communication and signage that encourage participation in reuse and recycling activities. CalPERS also plans to explore opportunities to expand reuse beyond office supplies to include other materials, such as furniture and IT equipment. Additionally, CalPERS will assess the feasibility of implementing regular waste prevention training and establishing performance metrics to track program participation and outcomes. These planned actions demonstrate CalPERS' proactive approach to strengthening its waste prevention initiatives and fostering a culture of sustainability across the organization.

## **Employee Waste and Recycling Training and Education**

### **Reporting Narrative for Employee Waste and Recycle Training and Education**

CalPERS educates its team members on waste reduction, reuse, recycling, composting, and buying green products through ongoing enterprise-wide communication and training. These efforts include annual training for division purchasers and requestors, posting helpful reminders on CalPERS' internal Viva Engage site, and periodic updates on its intranet, which highlight sustainability initiatives, proper waste-sorting practices, and environmentally preferred purchasing. This continuous outreach helps ensure team members remain informed and engaged in CalPERS' sustainability goals.

CalPERS does not currently conduct an annual review of signage, education, and training; however, an active review of its programs is underway to determine if any new initiatives should be implemented or existing ones revised to ensure these resources remain effective and up to date. At this time, no deficiencies have been identified in CalPERS' waste and recycling education efforts. This ongoing evaluation reflects CalPERS' commitment to maintaining high standards in sustainability education.

### **Planning Narrative for Employee Waste and Recycle Training and Education**

CalPERS is considering the implementation of an annual review of signage, education, and training as part of its ongoing sustainability initiatives led by the Operations Support Services Division (OSSD). Beginning in 2026, the Sustainability team will continue to regularly evaluate the adequacy and condition of waste receptacles, signage, and enterprise outreach materials. Findings from these reviews will be used to update signage, improve educational content, and identify opportunities to strengthen waste diversion and recycling efforts across all CalPERS facilities. This initiative will help ensure that CalPERS' sustainability resources remain effective and continue to support continuous improvement in waste management practices.

# CHAPTER 8 - PROCUREMENT

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## Department Mission and Procurement

CalPERS does not currently implement the Environmentally Preferable Purchasing (EPP) program. However, the department actively participates in the State Agency Buy Recycled Campaign (SABRC) by prioritizing the purchase of products that meet its recycled-content requirements and ensuring compliance with state procurement standards. SABRC criteria is incorporated into purchasing decisions, and procurement staff receive training to identify compliant items. To further support compliance, CalPERS maintains a catalog of frequently requested goods that are SABRC-compliant and encourages resource sharing through a virtual office supply room, enabling staff to repurpose surplus items before making new purchases. These practices help reduce waste, maximize the use of recycled-content products, and reinforce the State's sustainability goals and objectives.

The top SABRC category for CalPERS is paper products, where the department achieved 84% compliance which is above the 75 percent minimum requirement. A unique circumstance that impacted SABRC performance in FY 23/24 was a significant purchase of non-recycled-content paper. This exception occurred because recycled-content paper caused frequent printer jams, resulting in operational challenges in meeting service-level agreements and meeting high customer service expectations. Despite this, CalPERS continues to pursue strategies to increase recycled-content procurement while balancing the practical needs of its staff and operations.

## Reporting Narrative for Measure and Report Progress on EPP Spend

CalPERS does not currently implement a formal Environmentally Preferable Purchasing (EPP) program; however, it is committed to complying with the State Agency Buy Recycled Campaign (SABRC). To support this commitment, CalPERS continues to provide training to division purchasers and requestors in conjunction with its Procurement team which aids in identifying purchasing opportunities for SABRC-compliant products. Over the next year, CalPERS plans to expand its training program to further strengthen overall understanding of SABRC requirements and best practices for incorporating them into purchasing decisions.

CalPERS does not currently notify bidders of Environmentally Preferable Purchasing (EPP) requirements in construction contracts, service and transportation agreements, commodity purchases, grants, interagency agreements, or Architecture and Engineering (A&E) contracts. At this time, the department does not have an established processes to measure, monitor,

report, or oversee progress toward increasing EPP, nor are there procedures in place to ensure that all EPP purchases are tracked and recorded in the State Contract and Procurement Registration System (SCPRS) as outlined in the State Contracting Manual.

While CalPERS does not currently administer a formal EPP program, the department strives to procure sustainable goods and services whenever feasible, including items with recycled content, in alignment with state sustainability objectives. CalPERS recognizes the opportunity to strengthen its practices through enhanced education, process development, and the implementation of future programs that will embed EPP requirements into our procurement activities and align with statewide reporting expectations.

### Planning Narrative for Measure and Report Progress on EPP Spend

CalPERS currently does not have established procedures to measure, monitor, report, or oversee progress on Environmentally Preferable Purchasing (EPP) spend. To address this gap, CalPERS plans to assign responsibility for EPP education to the department's sustainability analyst. Over the next year, the analyst will develop a plan to disseminate information to the Procurement team and outline processes for monitoring and reporting progress. This approach will serve as a foundation for building internal capacity and establishing procedures to ensure greater alignment with statewide EPP goals in the future.

## Goods and Services Categories with the Greatest Potential to Green:

### Reporting on Goods and Services Categories with the Greatest Potential to Green

**Table 8.1: Goods and Services Categories with the Greatest Potential to Green**

Good or Service	2024 Total Spend (\$)	2024 Percent EPP Spend (%)	EPP Target (%)
-	-	-	-

### Reporting Narrative on Table 8.1: Goods and Services with the Greatest Potential to Green

Currently, CalPERS does not administer a formal Environmentally Preferable Purchasing (EPP) program and therefore has not identified goods or services categories with the greatest potential to green for purposes of Table 8.1. Purchasing activities are conducted in accordance with applicable statewide procurement requirements and delegated purchasing authority. CalPERS

recognizes the value of environmentally preferable purchasing as a tool to reduce environmental impacts and support State sustainability goals and will explore opportunities to evaluate current purchasing practices and the feasibility of implementing an EPP program in the future.

### **Planning Narrative on Table 8.1: Goods and Services with the Greatest Potential to Green**

CalPERS does not currently administer a formal Environmentally Preferable Purchasing (EPP) program and has not identified goods or services categories with the greatest potential to green. As a result, CalPERS has not established commitments to increase environmentally preferable purchasing spend for specific commodities.

CalPERS plans to review existing procurement practices and applicable statewide EPP guidance to assess opportunities for incorporating EPP in the future. This review will focus on understanding how EPP requirements may be integrated into current purchasing processes, identifying potential roles and responsibilities, and evaluating the feasibility of identifying priority commodities and tracking EPP-related spend. Findings from this effort will help inform potential next steps and support future planning to better align procurement activities with State sustainability goals.

## **EPP BMPs**

### **Reporting Narrative for EPP BMPS**

CalPERS reduces its environmental impacts by purchasing ENERGY STAR®-rated products, selecting sustainable janitorial supplies, and maintaining toner and battery recycling programs to conserve natural resources. In addition, the department includes contract language that states a preference for products meeting SABRC requirements, helping ensure contractors provide environmentally preferable goods in service contracts whenever possible.

### **Planning Narrative for EPP BMPs**

CalPERS plans to review product categories where EPP standards are not yet fully implemented, specifically paint, paper products, desk lamps, IT goods, and office equipment, etc., by enacting targeted education and outreach between division purchasers, requesters, and Procurement team. This initiative will focus on increasing awareness of standards, improving product selection, and ensuring compliance with state requirements whenever possible.

# Reporting on EPP Training and Outreach

**Table 8.2: 2024 EPP Basic Training Completions**

CalHR Classification	Total Number of Staff	EPP Basic Training Completion	Percent Trained	2025 EPP Training Goal
-	-	-	<b>NO BUYERS HAVE COMPLETED TRAINING</b>	-

**Table 8.3: 2024 EPP Executive Training Completions for Executive Members**

Executive Member	Title	Date Completed
<b>NO BUYERS HAVE COMPLETED TRAINING</b>	-	-

### Reporting Narrative on Tables 8.2-3: EPP Training and Education

CalPERS does not currently provide training or certifications including the basic CalPCA Environmentally Preferable Purchasing (EPP) training course, nor does the department have a formal process in place to promote EPP within the organization or through the supply chain. At this time, CalPERS does not actively promote or track EPP training for requisitioners, buyers, approvers, or program managers, and there are no established practices for engaging suppliers in EPP-related training.

While these processes are not yet developed, CalPERS recognizes the importance of advancing sustainable procurement practices and acknowledges the opportunity to explore additional training opportunities and strategies in the future. These efforts will help build capacity among staff and suppliers, strengthen alignment with statewide sustainability goals, and expand the use of EPP across procurement activities.

### Planning Narrative on Tables 8.2-3: EPP Training and Education

CalPERS buyers have not completed the basic CalPCA EPP training course. As a next step, the department will consider drafting a proposal to establish an internal process for monitoring ongoing training completion and promoting EPP education. Responsibility for developing this process would be assigned to the sustainability analyst, who would coordinate with procurement staff to implement and oversee the training plan.

# Reporting on State Agency Buy Recycled Campaign (SABRC), and Reducing Impacts

## Reporting on SABRC Progress

Table 8.4: State Agency Buy Recycled Campaign (SABRC) FY 23/24 Performance

Product Category	SABRC Reportable Dollars	SABRC Compliant Dollars	% SABRC Compliant
<b>75% Total Purchase Requirement</b>	-	-	-
Building Finishes	\$0	\$0	-
Carpet	\$0	\$0	-
<u>Erosion Control Products</u>	\$0	\$0	-
Glass Products	\$0	\$0	-
Lubricating Oils	\$0	\$0	-
Metal Products	\$3,166.10	\$3,166.10	100%
Paper Products	\$27,941.73	\$23,302.31	83%
Pavement Surfacing	\$0	\$0	-
Plastic Products	\$46,982.13	\$39,162.01	83%
Printing and Writing Paper	\$140,050.73	\$116,790.85	83%
Soil Amendments and Soil Toppings	\$0	\$0	-
Textiles	\$0	\$0	-
Tire Derived Products	\$0	\$0	-
<b>50% Total Purchase Requirement</b>	-	-	-
Antifreeze	\$0	\$0	-
Paint	\$0	\$0	-
Tires	-	-	-

## Reporting Narrative for Table 8.4: Measure and Report SABRC Progress

As shown in the table above, all product categories have met or exceeded the minimum percentage total spend requirements under SABRC. CalPERS' goal is to maintain and expand recycled-content procurement efforts by continuing to integrate education, training, and outreach into procurement practices.

To support this goal, CalPERS has identified several strategies to increase the purchase of recycled-content products. These include utilizing a procurement catalog that features only SABRC-compliant goods, encouraging participation in procurement training opportunities, and continuing the use of a virtual office

supply room. The virtual supply room enables team members across the organization to post unwanted goods for 30 days, giving others the opportunity to repurpose items before new purchases are made. Together, these efforts will help CalPERS strengthen compliance, reduce waste, and expand sustainable procurement practices across the organization.

### **Planning Narrative for Table 8.4: Measure and Report SABRC Progress**

SABRC PURCHASING PERCENTAGES ACHIEVED.

## **Reducing Impacts**

### **Reporting Narrative for Reducing Impacts**

CalPERS encourages contractors to use SABRC-compliant products whenever possible. While the department currently does not have a process in place to ensure that all goods and services purchased meet the Department of General Services (DGS) Buying Green standards and specifications, CalPERS has taken steps to strengthen its sustainable procurement practices. These steps include developing a procurement catalog featuring SABRC-compliant items and implementing a Virtual Office Supply Room, which allows staff to repurpose unwanted goods across divisions before purchasing new items. Together, these practices support waste reduction, promote reuse, and help CalPERS align with the State's broader sustainability goals.

### **Planning Narrative for Reducing Impacts**

CalPERS currently has no plan or timeline to add EPP to its contracts.

## CHAPTER 9- FUNDING OPPORTUNITIES

### Funding Opportunity Climate Change Adaptation

Table 9.1: Climate Change Priority Projects

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Lincoln Plaza North & East/West	Mechanical system upgrades (high-efficiency boilers and chillers) to handle increased cooling demand from rising temperatures	5-Year Infrastructure Plan	Unknown	2030

### Funding Opportunities for ZEVs and EV Infrastructure

Table 9.2: EV Priority Projects

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Regional Offices	Replace internal combustion engine sedans with BEVs through the DGS leasing program	Choose an item.	Ongoing	2035
Lincoln Plaza	Transition confidential fleet vehicles from gasoline to PHEVs to balance emission reduction with operational needs	Choose an item.	Ongoing	2035

### Funding Opportunities for Building Energy Conservation and Efficiency

Table 9.3: Building Energy Conservation and Efficiency Priority Projects

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Lincoln Plaza North	Retrofit all existing lighting to LED	5-Year Infrastructure Plan	2026	2026

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Lincoln Plaza East-West	Retrofit all existing lighting to LED	5-Year Infrastructure Plan	2024	2025
Lincoln Plaza	Boiler and chiller replacement (end-of-life equipment)	5-Year Infrastructure Plan	2029	2030
Lincoln Plaza Café	Possible electrification of café (remove natural gas appliances)	5-Year Infrastructure Plan	Ongoing	Ongoing

### Funding Opportunities for Decarbonization

Table 9.4: Funding Opportunities for Decarbonization

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Lincoln Plaza North	Possibly replace natural gas boilers with high-temp air-to-water heat pumps	5-Year Infrastructure Plan	Unknown	2030
Lincoln Plaza East-West	Possibly replace chillers with high-efficiency, low-GWP refrigerant chillers	5-Year Infrastructure Plan	Unknown	2035
Lincoln Plaza East-West	Possibly replace chillers with high-efficiency, low-GWP refrigerant chillers	5-Year Infrastructure Plan	Unknown	2035
Lincoln Plaza North & East-West	LED lighting retrofit (remaining fluorescent fixtures)	5-Year Infrastructure Plan	Unknown	2026
Lincoln Plaza Café	Possibly electrify kitchen appliances (convert from natural gas)	5-Year Infrastructure Plan	Unknown	2035

## Funding Opportunities for Water Conservation and Efficiency

Table 9.5: Water Conservation and Efficiency Priority Projects

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Lincoln Plaza Campus	Upgrade irrigation infrastructure with smart controllers, moisture sensors, and modern drip systems	5-Year Infrastructure Plan	Ongoing	Ongoing
Lincoln Plaza Campus	Cooling tower mechanical process review at end of life for efficiency and water savings	Maintenance Budget	Ongoing	Ongoing
Lincoln Plaza Campus	Explore water reuse systems (greywater or rainwater capture) for irrigation and non-potable uses	5-Year Infrastructure Plan	Unknown	Unknown

## Funding Opportunities for Facilities Construction and Maintenance

Table 9.6: Sustainable Operations Priorities

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Lincoln Plaza Campus	Maintain LEED certification for large office buildings	Existing Personnel Budget	Ongoing	Ongoing
Lincoln Plaza Campus	Green Seal cleaning products and sustainable cleaning procedures	Existing Maintenance Budget	Ongoing	Ongoing

## Funding Opportunities for Waste Management and Recycling

Table 9.7: Waste Management and Recycling Priorities

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Lincoln Plaza	Conduct annual waste audits and develop corrective action plans for diversion improvement	Existing Maintenance Budget	2024	Ongoing
Lincoln Plaza	Expand waste-sorting education and outreach based on findings from the 2024 and 2025 waste audits (improve diversion and reduce contamination)	Existing Training Budget	2025	Ongoing

**Funding Opportunities for Procurement**

**Table 9.8: Procurement Priorities**

Building Name	Project	Funding Source	Est. Begin Date	Est. Completion Date
Lincoln Plaza Campus	Develop and implement EPP training program for buyers, requisitioners, and procurement staff	Existing Personnel Budget	2026	Ongoing
Lincoln Plaza Campus	Establish procedures to measure, monitor, and report EPP spend in SCPRS	Existing Personnel Budget	2026	Ongoing

**Full Life Cycle Cost Accounting**

**Reporting on Life Cycle Cost Accounting**

NO INFRASTRUCTURE INVESTMENTS.

CalPERS currently does not have a formal life cycle cost accounting process in place. Lifecycle cost considerations are mainly done through infrastructure studies, value engineering, and end-of-life considerations to estimate costs.

**Planning for Implementing Life Cycle Cost Accounting**

NO INFRASTRUCTURE INVESTMENTS.

CalPERS currently does not have a plan but will consider developing one in the future.

## CHAPTER 10 – PUBLIC EDUCATION AND OUTREACH

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CalPERS promotes sustainability awareness and education among its team members through a variety of outreach efforts, events, and internal communication campaigns. These initiatives reinforce CalPERS' commitment to environmental stewardship and support the State of California's long-term sustainability goals. Although CalPERS does not currently host dedicated public outreach events for its sustainable initiatives, it ensures transparency and stakeholder education through its social media sustainability platforms, as well as its external sustainability webpage, which showcases annual accomplishments and reinforces CalPERS' role as a leader across agencies and throughout California.

In April 2025, CalPERS hosted an Earth Day celebration open to all team members at its Lincoln Plaza (LP) campus. The event aimed to inspire sustainable habits both at work and home through vendor booths, interactive displays, and educational materials highlighting CalPERS' environmental achievements and programs. Throughout the event, team members engaged with the CalPERS Sustainability Team to learn more about waste diversion and recycling programs, proper sorting practices for compost, recycling, and landfill waste, and the organization's ongoing energy-efficiency projects. Local vendors displayed informational booths featuring services that either CalPERS or Sacramento area residents utilize, including Kaiser and SMUD, who spoke on plant-based nutrition and energy conservation. In addition, team members were able to engage with Sac TMA on alternative commuting options, including carpool registration and regional public transit services. Although not open to the public, this event educated staff on a wide range of sustainability topics and programs, empowering them to share this knowledge within their own communities. The event encouraged active participation, fostering environmental awareness, promoting best practices both at work and at home, and strengthened CalPERS' culture of sustainability. Moving forward, CalPERS plans to hold this event each spring to celebrate Earth Day.

Beyond events, CalPERS continues to make measurable progress toward the goals outlined in its Sustainability Roadmap. The department remains committed to implementing projects that reduce greenhouse gas emissions, conserve energy and water, and promote the purchase of goods with recycled content.

In 2024, LP consumed over 13.8 million kilowatt-hours of electricity, all of which was supplied by 100% renewable energy through SMUD's SolarShares and Greenergy programs, successfully achieving CalPERS' renewable energy target ahead of statewide timelines. The ongoing LED lighting retrofit project is

projected to reduce total electricity consumption by up to 15% upon completion in 2026. In addition to reducing energy demand, this project improves occupant comfort through enhanced lighting quality and long-lasting fixtures which, in turn, decrease maintenance costs and labor resources.

CalPERS has also advanced its decarbonization planning initiatives through the development of a comprehensive, third-party Decarbonization Plan, which proposes key electrification projects to transition campus operations away from fossil fuels. Major recommendations include replacing aging natural gas-fired boilers and chillers with high-efficiency electric systems and converting the onsite café's cooking equipment to all-electric alternatives. These measures are under consideration and are anticipated to significantly reduce carbon emissions and support CalPERS' alignment with California's 2035 carbon neutrality goal.

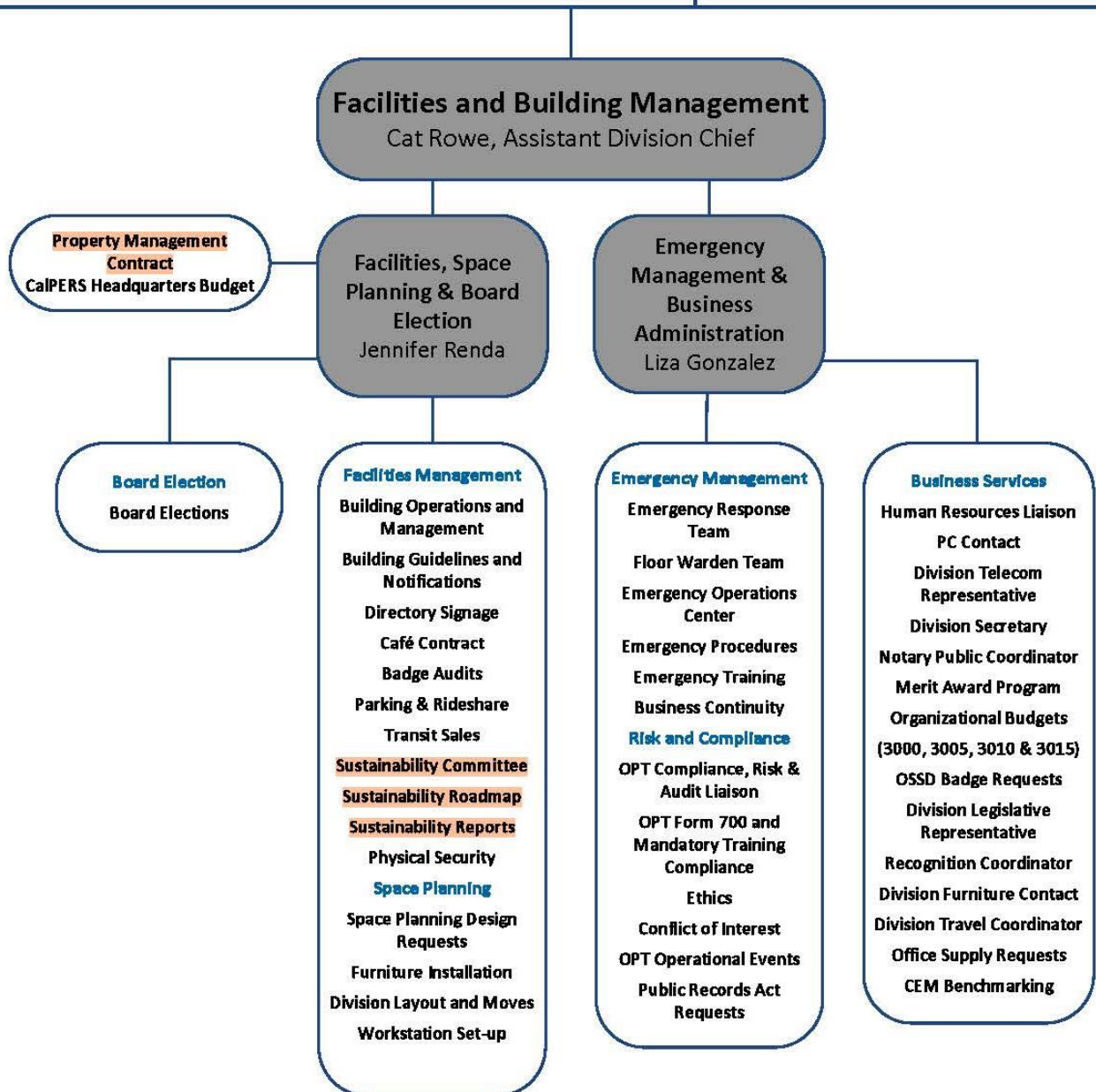
In parallel, fleet operations have evolved to include zero-emission and hybrid vehicles, contributing to a measurable reduction in fuel consumption and greenhouse gas output. The deployment of telematics across fleet vehicles enables data-driven monitoring of idling time, trip frequency, and overall efficiency, allowing CalPERS to further refine its operations and target additional emissions reductions.

CalPERS continues to engage team members and the public through ongoing sustainability education and communication. The internal Inside CalPERS sustainability webpage serves as a central platform for sharing resources, recycling guides, and updates on current projects. Regular communication through Viva Engage posts and enterprise-wide bulletins keeps team members informed about upcoming events, sustainability tips, and departmental achievements. CalPERS also emphasizes SABRC compliance by sharing training materials and procurement guidance to increase team member awareness of sustainable purchasing standards. Additionally, CalPERS maintains its external sustainability webpage, which provides an annual overview of its sustainability achievements and initiatives, most recently with its 2024 Sustainability Highlights Report, posted in April 2025.

Looking ahead, CalPERS plans to further expand its outreach and education efforts by integrating sustainability topics into internal training sessions and creating new opportunities for team member engagement. Future campaigns will focus on reinforcing waste-sorting behaviors, promoting water conservation, and highlighting statewide observances such as Earth Day 2026. Through continued education, outreach, and participation, CalPERS remains dedicated to advancing sustainability across its operations and within the community it serves.

# APPENDIX A – SUSTAINABILITY LEADERSHIP

## Operations Support Services Division Functional Organization Chart Dallas Stone, Division Chief

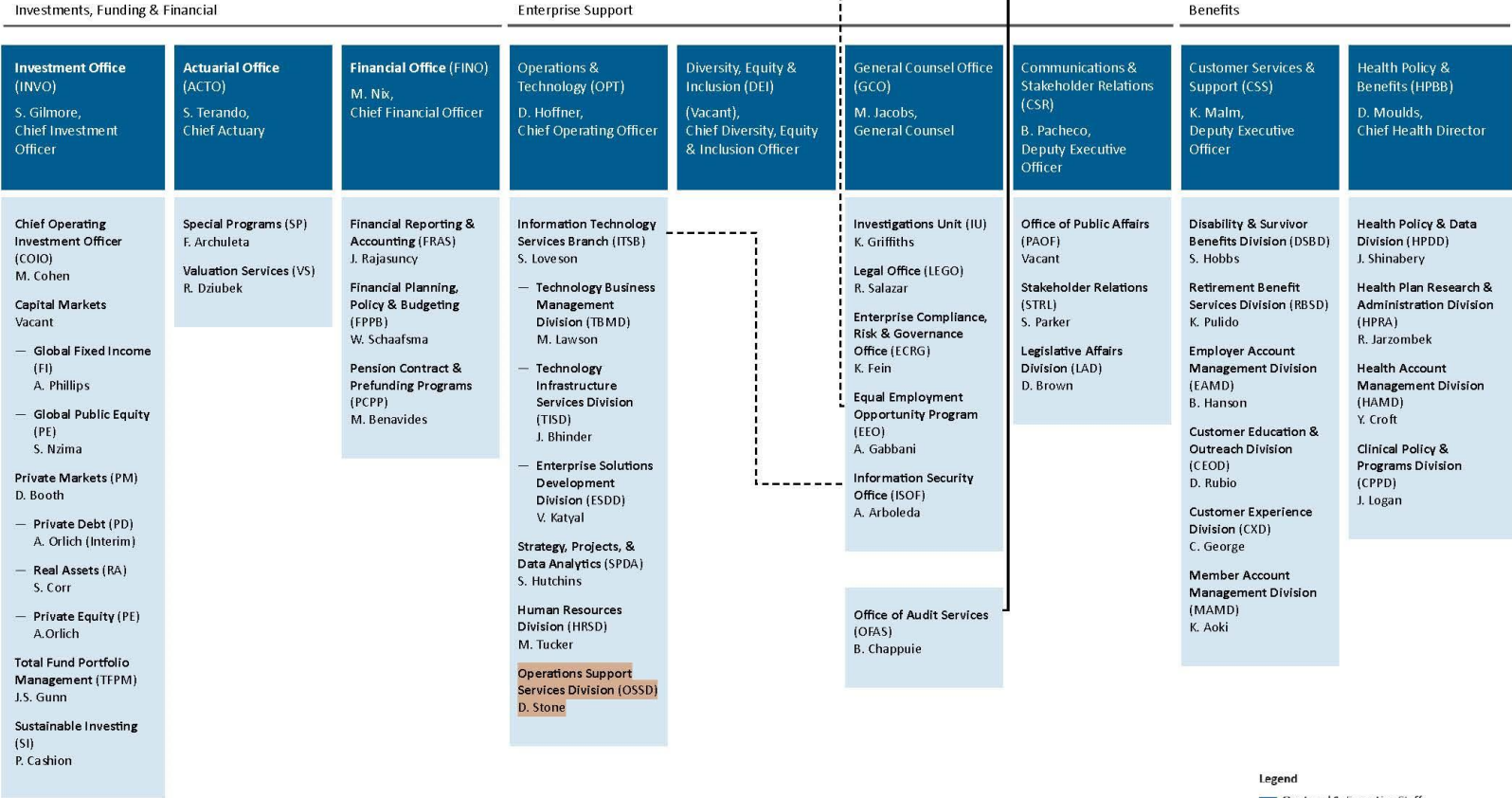




# Organizational Chart

**Board of Administration (BOA)**  
T. Taylor, Board President

**Executive Office (EXEO)**  
M. Frost, Chief Executive Officer



**Legend**  
 ■ Org Level 1: Executive Staff  
 □ Org Level 2: Direct Reports to Executive Staff  
 --- Functional reporting relationship  
 — Administrative reporting relationship

## APPENDIX B - SUSTAINABILITY MILESTONES & TIMELINE

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## APPENDIX C – ACRONYMS

ACRONYM	DEFINITION
<b>AB</b>	Assembly Bill
<b>ADR</b>	Automated Demand Response
<b>AMB</b>	Asset Management Branch (at DGS)
<b>BEV</b>	Battery Electric Vehicle
<b>BMP</b>	Best Management Practices
<b>CA</b>	California
<b>CALGREEN</b>	California Green Building Code (Title 24, Part 11)
<b>CEC</b>	California Energy Commission
<b>CRT</b>	Cathode Ray Tube
<b>DGS</b>	Department Of General Services
<b>DWR</b>	Department Of Water Resources
<b>EPD</b>	Environmental Product Declarations
<b>EHT</b>	Extreme Heat Threshold
<b>EMS</b>	Energy Management System (Aka EMCS)
<b>EMCS</b>	Energy Management Control System (Aka EMS)
<b>EO</b>	Executive Order
<b>EPP</b>	Environmentally Preferable Purchasing
<b>ESCO</b>	Energy Service Company
<b>ESPM</b>	Energy Star Portfolio Manager
<b>ETS</b>	Enterprise Technology Solutions (A Division At DGS)
<b>EUI</b>	Energy Use Intensity (Source Kbtu/Sq. Ft.)
<b>EVSE</b>	Electric Vehicle Supply Equipment (Charging Equipment)
<b>FMD</b>	Facilities Management Division (A Division At DGS)
<b>GCM</b>	Global Circulation Model

<b>ACRONYM</b>	<b>DEFINTION</b>
<b>GHG</b>	Greenhouse Gas
<b>GHGe</b>	Greenhouse Gas Emissions
<b>GSP</b>	Groundwater Sustainability Plan
<b>HD</b>	Heavy Duty Vehicles
<b>IEQ</b>	Indoor Environmental Quality
<b>kBTU</b>	Thousand British Thermal Units (Unit of Energy)
<b>LCM</b>	The Landscape Coefficient Method
<b>LD</b>	Light Duty Vehicles
<b>LEED</b>	Leadership In Energy and Environmental Design
<b>MAWA</b>	Maximum Applied Water Allowance
<b>MD</b>	Medium Duty Vehicles
<b>MM</b>	Management Memo
<b>MPG</b>	Miles per Gallon
<b>MWELO</b>	Model Water Efficient Landscape Ordinance
<b>OBAS</b>	Office Of Business and Acquisition Services (At DGS)
<b>OBF</b>	On-Bill Financing
<b>OFAM</b>	Office Of Fleet and Asset Management (At DGS)
<b>OS</b>	Office Of Sustainability (At DGS)
<b>PHEV</b>	Plug-in Hybrid Electric Vehicle
<b>PMDB</b>	Project Management and Development Branch (At DGS)
<b>PPA</b>	Power Purchase Agreement
<b>PUE</b>	Power Usage Effectiveness
<b>PV</b>	Photovoltaic Vehicles
<b>RCP</b>	Representative Concentration Pathway
<b>SABRC</b>	State Agency Buy Recycled Campaign
<b>SAM</b>	State Administrative Manual

ACRONYM	DEFINITION
<b>SB</b>	Senate Bill
<b>SCM</b>	State Contracting Manual
<b>SGA</b>	Sustainable Groundwater Agency
<b>SGMA</b>	Sustainable Groundwater Management Act
<b>SUV</b>	Sport Utility Vehicle
<b>WMC</b>	Water Management Coordinator
<b>VHSP(s)</b>	Vehicle Home Storage Permits
<b>WUCOLS</b>	Water Use Classifications of Landscape Species
<b>ZEV</b>	Zero-Emission Vehicle
<b>ZNE</b>	Zero Net Energy

## APPENDIX D - GLOSSARY

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**Backflow** - is the undesirable reversal of the flow of water or mixtures of water and other undesirable substances from any source (such as used water, industrial fluids, gasses, or any substance other than the intended potable water) into the distribution pipes of the potable water system.

**Backflow Prevention Device** – a device that prevents contaminants from entering the potable water system in the event of back pressure or back siphonage.

**Blowdown, Boilers** - is the periodic or continuous removal of water from a boiler to remove accumulated dissolved solids and/or sludge. Proper control of blowdown is critical to boiler operation. Insufficient blowdown may lead to deposits or carryover. Excessive blowdown wastes water, energy, and chemicals.

**Blowdown, Cooling Towers** – Is the water discharged to remove high mineral content system water, impurities, and sediment.

**Building Best Management Practices (BMPs)** - are ongoing actions that establish and maintain building water use efficiency. BMPs can be continuously updated based on need and tailored to fit the facility depending on occupancy and specific operations.

**Compost** – Compost is the product resulting from the controlled biological decomposition of organic material from a feedstock into a stable, humus-like product that has many environmental benefits. Composting is a natural process that is managed to optimize the conditions for decomposing microbes to thrive. This generally involves providing air and moisture, and achieving sufficient temperatures to ensure weed seeds, invasive pests, and pathogens are destroyed. A wide range of material (feedstock) may be composted, such as yard trimmings, wood chips, vegetable scraps, paper products, manures and biosolids. Compost may be applied to the top of the soil or incorporated into the soil (tilling).

**Cooling Degree Day (CDD)** - is defined as the number of degrees by which a daily average temperature exceeds a reference temperature. The reference temperature is also typically 65 degrees Fahrenheit, and different utilities and planning entities sometimes use different reference temperatures. The reference temperature loosely represents an average daily temperature below which space cooling (e.g., air conditioning) is

not needed.

**Critically Overdrafted** - a condition in which significantly more water has been taken out of a groundwater basin than has been put in, either by natural recharge or by recharging basins. Critical overdraft leads to various undesirable conditions such as ground subsidence and saltwater intrusion.

**Ecosystem Services** - are the direct and indirect contributions of ecosystems to human well-being. They support directly or indirectly our survival and quality of life. Ecosystem services can be categorized in four main types:

- Provisioning services are the products obtained from ecosystems such as food, fresh water, wood, fiber, genetic resources, and medicines.
- Regulating services are the benefits obtained from the regulation of ecosystem processes such as climate regulation, natural hazard regulation, water purification and waste management, pollination, or pest control.
- Habitat services provide living places for all species and maintain the viability of gene-pools.
- Cultural services include non-material benefits such as spiritual enrichment, intellectual development, recreation, and aesthetic values.

**Erosion Control Product** – includes products such as compost filter socks, compost blankets and hydraulic mulch.

**Environmental Product Declarations (EPD)** - third-party verified reports that detail a product's impacts on the environment. The [International Standards Organization \(ISO\) 14025](#) defines EPDs as a Type III declaration that “quantifies environmental information on the life cycle of a product to enable comparisons between products fulfilling the same function.” EPDs can be product-specific, factory-specific, or industry-wide.

**Grass Cycling** - refers to an aerobic (requires air) method of handling grass clippings by leaving them on the lawn when mowing. Because grass consists largely of water (80% or more), contains little lignin, and has high nitrogen content, grass clippings easily break down during an aerobic process. Grass cycling returns the decomposed clippings to the soil within one to two weeks acting primarily as a fertilizer supplement and, to a much smaller degree, mulch. Grass cycling can provide 15 to 20% or more of a lawn's yearly nitrogen requirements

**Heating Degree Day (HDD)** - is defined as the number of degrees by which a daily average temperature is below a reference temperature (i.e., a proxy for when heat would be needed). The reference temperature is typically 65 degrees Fahrenheit, although different utilities and planning entities sometimes use different reference temperatures. The reference temperature loosely represents an average daily temperature above which space heating is not needed. The average temperature is represented by the average of the maximum and minimum daily temperature.

**Hydrozone** – is a portion of a landscaped area having plants with similar water needs that are served by one irrigation valve or set of valves with the same schedule.

**Landscape Coefficient Method (LCM)** - describes a method of estimating irrigation needs of landscape plantings in California. It is intended as a guide for landscape professionals.

**Landscape Water Budget** - is the calculated irrigation requirement of a landscape based on landscape area, local climate factors, specific plant requirements and the irrigation system performance.

**Lifecycle Cost Accounting** - includes initial investment costs, as well as lifetime operation and maintenance costs under changing climate conditions, including changing average conditions and increases in extreme events. It may involve applying non-market evaluation methods such as travel cost, avoided costs or contingent valuation to capture hard to quantify benefits and costs

**Makeup Water** - Makeup water, or the water replacing evaporated or leaked water from the boiler, is first drawn from its source, whether raw water, city water, city-treated effluent, in-plant wastewater recycle (cooling tower blowdown recycle), well water, or any other surface water source.

**Model Water Efficient Landscape Ordinance (MWELo)** - The Water Conservation in Landscaping Act was signed into law on September 29, 1990. The premise was that landscape design, installation, and maintenance can and should be water efficient. Some of the provisions specified in the statute included plant selection and groupings of plants based on water needs and climatic, geological, or topographical conditions, efficient irrigation systems, practices that foster long term water conservation and routine repair and maintenance of irrigation systems. The latest update to MWELo was in 2015. MWELo applies to all state agencies' landscaping.

**Mulch** – Mulch is a soil topping consisting of a layer of material applied on top of soil. Examples of material that can be used as mulch include wood chips, grass clippings, leaves, straw, cardboard, newspaper, rocks, and even shredded tires. Benefits of applying mulch include reducing erosion and weeds and increasing water retention and soil vitality. Whenever possible, look for mulch that has been through a sanitization process to kill weed seeds and pests.

**Natural infrastructure** - is the “*preservation or restoration of ecological systems or the utilization of engineered systems that use ecological processes to increase resiliency to climate change, manage other environmental hazards, or both. This may include, but need not be limited to, flood plain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planting to mitigate high heat days*” (Public Resource Code Section 71154(c)(3)).

**Nonpurchased Water** – is water that a department uses that does not come from a 3<sup>rd</sup> party supplier. It may be water from domestic wells owned by the department or water that is taken from a river, lake, canal, or other source and used by the department. The water may be returned to source after use.

**Trickle Flow** – A device that allows users to reduce flow to a trickle while using soap and shampoo. When the device is switched off, the flow is reinstated with the temperature and pressure resumes to previous settings.

**Soil Amendments and Soil Toppings** - Soil amendments include adding ingredients such as sulfur, or sand to change the original soil, soil conditioner for potting or plant mix, Soil toppings include organic materials used for water conservation; organic materials such as biosolids or other comparable substitutes such as livestock, horse, or other animal manure, food residues or fish processing byproducts; mechanical breakdown of materials.

**Sprinkler system backflow prevention devices** – are devices to prevent contaminants from entering water supplies. These devices connect to the sprinkler system and are an important safety feature. They are required by the California Plumbing Code.

**Submeter**- a metering device installed to measure water use in a specific area or for a specific purpose. Also known as dedicated meters, landscape submeters are effective for separating landscape water use from interior water use, evaluating the landscape water budget and for leak

detection within the irrigation system.

**Urban Heat Islands** - are areas with localized spikes in temperature, which impact human health, increase pollution, and increase energy demand. Urban heat islands occur during the hot summer months in areas with higher percentages of impervious surface and less vegetation. This is likely in areas with large parking lots, dense development, and lower tree density and shading. Urban heat islands can be mitigated (i.e., reduced) through tree planting and other greening measures, cool roofs (e.g., lighter roofing materials that reflect light), cooler pavements, and other measures.

**Water Budget** - A landscape water budget is the calculated irrigation requirement of a landscape based on landscape area, local climate factors, specific plant requirements and the irrigation system performance.

**Water Energy Nexus** - Water and energy are often managed separately despite the important links between the two. 12 percent of California's energy use is related to water use with nearly 10 percent being used at the end water use. Water is used in the production of nearly every major energy source. Likewise, energy is used in multiple ways and at multiple steps in water delivery and treatment systems as well as wastewater collection and treatment.

**Water Shortage Contingency Plans** - Each urban water purveyor serving more than 3,000 connections or 3,000 acre-feet of water annually must have an Urban Water Shortage Contingency Plan (Water Shortage Plan) which details how a community would react to a reduction in water supply of up to 50% for droughts lasting up to three years.

**Water Use Classification of Landscape Species (WUCOLS)**- WUCOLS are used to help determine water budgets and irrigation schedules. Use this link to access the necessary information for your landscaping needs. [WUCOLS Plant Search Database \(ucdavis.edu\)](http://ucdavis.edu/wucols)

**Zero Energy Buildings** - A zero-energy building is "an energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the onsite renewable exported energy". Department of Energy (DOE), September 2015.

# APPENDIX E – DEPARTMENT STAKEHOLDERS

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## Climate Change Adaptation

### Understanding Climate Risk at Existing Facilities

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### Understanding Climate Risk at Planned Facilities

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### Integrating Climate Change into Department Planning and Funding Programs

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **Measuring and Tracking Progress**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **Zero Emission Vehicles**

#### **Incorporating ZEVs Into the Department Fleet**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Operations Support Services Division  
Fleet Management Unit – Administers the CalPERS Fleet Program  
Fleet Coordinator – Pending, AGPA  
Fleet Manager I – Kelly Young, SSMI

#### **Telematics**

Operations Support Services Division  
Fleet Management Unit – Administers the CalPERS Fleet Program  
Fleet Coordinator – Pending, AGPA  
Fleet Manager I – Kelly Young, SSMI

#### **Public Safety Exemption**

Operations Support Services Division  
Fleet Management Unit – Administers the CalPERS Fleet Program  
Fleet Coordinator – Pending, AGPA  
Fleet Manager I – Kelly Young, SSMI

**Outside Funding Sources for ZEV Infrastructure**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

**Hydrogen Fueling Infrastructure**

N/A

**Comprehensive Facility Site and Infrastructure Assessments**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

**EVSE Construction Plan**

Colliers International  
Lead complex projects from start to finish, focus on strategic planning, resource management (budget, team vendors), risk mitigation and stakeholder communication.  
Senior Project Manager - Saam Rad  
Manager – Brian Wreschinsky

**EVSE Operation**

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

## Energy

### Zero Net Energy (ZNE)

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### New Construction Exceeds Title 24 by 15%

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Lead complex projects from start to finish, focus on strategic planning, resource management (budget, team vendors), risk mitigation and stakeholder communication.  
Senior Project Manager - Saam Rad  
Manager – Brian Wreschinsky

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

### **Existing Buildings Energy Efficiency**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

### **Energy Savings Projects**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

### **Demand Response**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **Renewable Energy**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **Monitoring-Based Commissioning (MBCx)**

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

### **Building Controls**

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

## Decarbonization

### Greenhouse Gas Emissions

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

## Water Efficiency and Conservation

### Indoor Water Efficiency Projects in Progress First initiative

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### Boilers and Cooling Systems Projects in Progress

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

**Landscaping Hardware Water Efficiency Projects in Progress**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manages all building related maintenance such as landscaping, cleaning, and operation.  
Property Manager - Lacy Callaway  
Manager- Brian Wreschinsky

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

**Living Landscaping Water Efficiency Projects in Progress**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

**Buildings with Urban Water Shortage Contingency Plans in Progress**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Oversees all critical building systems including HVAC, electrical, plumbing, and life-safety to ensure reliability, efficiency, and regulatory compliance.  
Chief Engineer - Mike Bigon  
Manager- Brian Wreschinsky

## Facilities Construction and Operations

### Building Design and Construction

Colliers International  
Oversees all day-to-day activities ensuring efficiency, productivity, and alignment with strategic goals and balanced budgets regarding commercial building.  
Director of Operations - Brian Wreschinsky  
Manager- Tina Minook

### LEED for Existing Buildings Operations and Maintenance

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### Indoor Environmental Quality

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### Integrated Pest Management

Colliers International  
Manages all building related maintenance such as landscaping, cleaning, and operation.  
Property Manager - Lacy Callaway  
Manager- Brian Wreschinsky

### **Fossil Fuel Landscaping Equipment Replacement**

Colliers International  
Manages all building related maintenance such as landscaping, cleaning, and operation.  
Property Manager - Lacy Callaway  
Manager- Brian Wreschinsky

### **Location Efficiency**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

## **Waste Management and Recycling**

### **Waste and Recycling Programs**

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **SARC Report**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

### **Recycling Program and Practices**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **Organics Recycling**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **Hazardous Waste Materials**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **Universal Waste Program**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

Colliers International  
Manage and analyze sustainability programs, certifications, climate change assessments and utility data on behalf of the CalPERS team  
Sustainability Analyst - Reshmi Prasad  
Manager – Saam Rad, Brian Wreschinsky

### **Material Exchange Programs**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

**Waste Prevention Program**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

**Reuse Program**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

**Employee Waste and Recycling Training and Education**

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

## Procurement

### Goods and Services with the Greatest Potential to Green

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

### EPP BMPs

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

### Reporting on EPP Training and Outreach

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

### Reporting on State Agency Buy Recycled Campaign

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

### Reducing Impacts

Operations Support Services Division  
Facilities Unit – Manage and analyze sustainability programs  
Sustainability Analyst – Erin Tiernan-Lang, SSA  
Facilities Manager – Kelly Lombardo, SSMI

# APPENDIX F – SUSTAINABILITY STATUTORY REQUIREMENTS, EXECUTIVE ORDERS, AND MANAGEMENT MEMOS REFERENCES

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The following legislative actions, executive orders, State Administrative Manual (SAM) Management Memos, resources, and guidance documents provide the sustainability criteria, requirements, and targets tracked and reported herein.

## Recent Legislative Actions

Several pieces of legislation were signed in 2023 that codified several elements of the executive orders, or provided further requirements included in the policies. These include the following:

**[Senate Bill \(SB\) 416 \(Laird, 2023\)](#)**: Requires all new building and major renovation projects larger than 10,000 gross square feet undertaken by state agencies, and for which the project schematic design documents are initiated by the state agency on or after January 1, 2024, to obtain the Leadership in Energy and Environmental Design or “LEED” Gold or higher certification, except as provided. Requires the state agency to obtain LEED Silver certification if the state agency concerned makes a finding that achieving LEED Gold conflicts with critical operational or security requirements, is demonstrably cost ineffective, or conflicts with California Building Code requirements. Authorizes certification to an alternative equivalent or higher rating system or standard, if any, only when approved by the Director of General Services.

**[Senate Bill SB 837 \(Archuleta, 2023\)](#)**: The State Energy Resources Conservation and Development Commission as of January 1, 2024, shall consider revising the definition of “conditioned space, indirectly” for purposes of those regulations to include sealed and unvented attics, where the space is enclosed by the primary thermal and air barrier and directly adjoining conditioned space.

**[Assembly Bill \(AB\) 43 \(Holden, 2023\)](#)**: Authorizes the state board to establish an embodied carbon trading system. Authorizes the state board to integrate the embodied carbon trading system into the framework for measuring the average carbon intensity of the materials used in the construction of new buildings, as described above, on or before December 31, 2026, and to implement the system on and after January 1, 2029. Authorizes the state board to adopt rules and regulations for the credit allocation approach, the anticipated carbon price in the scheme, and trading periods. Requires the state board to periodically review and update its emission reporting and compliance standard requirements, as necessary.

## Other Significant Legislative Actions

- [Assembly Bill \(AB\) 661 \(Bennet, 2022\)](#): Requires a state agency, if fitness and quality are equal, to purchase recycled products instead of nonrecycled products whenever recycled products are available at no more than 10% greater total cost than nonrecycled products, and specified circumstances exist. Requires the Department of Resources Recycling and Recovery, in concurrence with the DGS and in consultation with impacted agencies, to update a list of products and minimum recycled content percentages, as determined to be appropriate, commencing January 1, 2026, and every 3 years thereafter. Requires the Department of Resources Recycling and Recovery to report a state agency that does not meet SABRC purchasing requirements in each product category to the DGS. The bill would require all state agency procurement and contracting officers, or their designees, to participate in mandatory annual training, as prescribed, conducted by the Department of Resources Recycling and Recovery. The bill would require the DGS and the Prison Industry Authority to prioritize the use of recycled content products.
- [Senate Bill \(SB\) 1020 \(2022\)](#): *Clean Energy, Jobs, and Affordability Act of 2022*. States that eligible renewable energy resources and zero-carbon resources supply 90% of all retail sales of electricity to California end-use customers by December 31, 2035, 95% of all retail sales of electricity to California end-use customers by December 31, 2040, 100% of all retail sales of electricity to California end-use customers by December 31, 2045, and 100% of electricity procured to serve all state agencies by December 31, 2035, as specified.
- [Assembly Bill \(AB\) 2446 \(Holden, 2022\)](#): Require the Air Resources Board, by July 1, 2025, to develop, in consultation with specified stakeholders, a framework for measuring and then reducing the average carbon intensity of the materials used in the construction of new buildings, including those for residential uses. The bill would require the framework to include a comprehensive strategy for the state's building sector to achieve a 40% net reduction in greenhouse gas emissions of building materials, as determined from a baseline calculated using a certain 2026 report, if that report is adequate, or as specified. The bill would require the strategy to achieve this target as soon as possible, but no later than December 31, 2035, with an interim target of 20% net reduction by December 31, 2030.

- [Senate Bill SB 1203 \(Becker, 2021\)](#): Requires the Department of General Services, in consultation with the state board, and to the extent feasible, to publish, on its internet website or other publicly available location, an inventory of the greenhouse gas emissions of state agencies for the prior calendar year, on or before July 1, 2024, and annually thereafter until the goal has been achieved. Requires DGS to develop and publish a plan, on or before January 1, 2026, that describes required actions and investments for achieving net-zero emissions of greenhouse gases and an estimate of the costs associated with the planned actions and ensure that the required actions and investments are incorporated into the sustainability roadmaps of all state agencies. Requires the department to update the plan beginning June 30, 2028, and every 2 years thereafter until the goal has been achieved. Requires that, subject to an appropriation by the Legislature, the department to provide information, training, coordination, best practices, and other technical assistance to state agencies to help those state agencies implement the required actions and investments. Requires state agencies to incorporate the required actions and investments into their future budget proposals, as provided. Requires the department, beginning December 31, 2027, and biennially thereafter until the achievement of the above stated goal, to report to the Legislature on progress toward achieving that goal, as provided.
- [Senate Bill SB 1335 \(Allen, 2018\)](#): Enacts the Sustainable Packaging for the State of California Act of 2018, which would prohibit a food service facility located in a state-owned facility, operating on or acting as a concessionaire on state property, or under contract to provide food service to a state agency from dispensing prepared food using a type of food service packaging unless the type of food service packaging is on a list that CalRecycle publishes and maintains on its Internet Web site that contains types of approved food service packaging that are reusable, recyclable, or compostable.
- [Assembly Bill \(AB\) 739 \(Chau, 2017\)](#): Requires, beginning December 31, 2025, at least 15% of newly purchased vehicles with a gross vehicle weight rating of 19,000 pounds or more purchased by the department and other state entities for the state fleet to be zero emission, and beginning December 31, 2030, at least 30% of those vehicles to be zero emission. The bill would require, if the department finds, in a public hearing on or after December 31, 2026, that it cannot meet the needs of the state while meeting this requirement, the department to disclose this finding at the hearing and to the Legislature.

- [\*\*Assembly Bill \(AB\) 2800\*\* \(Quirk, 2016\)](#): Requires state agencies to take the current and future impacts of climate change into planning, designing, building, operating, maintaining, and investing in state infrastructure. CNRA will establish a Climate-Safe Infrastructure Working Group to determine how to integrate climate change impacts into state infrastructure engineering. (Public Resources Code Section 71155)
- [\*\*Assembly Bill AB 2812\*\* \(Gordon, 2016\)](#): Provide adequate receptacles, signage, education, staffing, and arrange for recycling services. Report annually on how each of these is being implemented
- [\*\*Senate Bill SB 1383\*\* \(Lara, 2016\)](#): 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020, a 75 percent reduction by 2025, and 20 percent of currently disposed edible food is recovered for human consumption by 2025.
  - Agencies already in compliance with AB 1826 may need to further expand their organic waste recycling service to comply with the new requirements
  - Jan. 1, 2024, Tier 2 Commercial Edible food Generators will be required to donate edible food to a recovery organization.
- [\*\*Assembly Bill \(AB\) 1482\*\* \(Gordon, 2015\)](#): Requires that the California Natural Resources Agency (CNRA) update the state's adaptation strategy safeguarding California every three years. Directs state agencies to promote climate adaptation in planning decisions and ensure that state investments consider climate change impacts, as well as the use of natural systems and natural infrastructure. (Public Resources Code Section 71153)
- [\*\*Senate Bill \(SB\) 246\*\* \(Wieckowski, 2015\)](#): Established the Integrated Climate Adaptation and Resiliency Program within the Governor's Office of Planning and Research to coordinate regional and local efforts with state climate adaptation strategies to adapt to the impacts of climate change. (Public Resources Code Section 71354)
- [\*\*Assembly Bill AB 1826\*\* \(Chesbro, 2014\)](#): Implement mandatory commercial organics recycling program (if meet threshold). Report annually on organics recycling program.
- [\*\*Assembly Bill AB 2583\*\* \(Blumenfield, 2012\)](#): Public Resources Code §25722.8: Statute requires reducing consumption of petroleum products by the state fleet compared to a 2003 baseline. Mandates a 10 percent reduction or displacement by Jan. 1, 2012, and a 20 percent reduction or displacement by Jan. 1, 2020.

- [Assembly Bill AB 341 \(Chesbro, 2011\)](#): Implement mandatory commercial recycling program (if meet threshold). Report annually on recycling program.
- [Senate Bill SB 1106 \(Lowenthal, 2005\)](#): Have at least one designated waste management coordinator. Report annually on how your designated waste and recycling coordinator meets the requirement.
- [Assembly Bill AB 75 \(Strom-Marting, 1999\)](#): Implement an integrated waste management program and achieve 50 percent disposal reduction target. State Agencies report annually on waste management program.
- **Assembly Bill (AB) 4**: Passed in 1989. The State Agency Buy Recycled Campaign (SABRC) statutes are in Public Contract Code Section [12153-12217](#). The intent of SABRC is to stimulate markets for materials diverted by California local government and agencies. It requires state agencies to purchase enough recycled-content products to meet annual targets, report on purchases of recycled and nonrecycled products, and submit plans for meeting the annual goals for purchasing recycled-content products.

### Executive Orders

The governor issued the following executive order relevant to chapters of this roadmap:

- [Executive Order B-16-12](#)

EO B-16-12 directs state agencies to integrate zero-emission vehicles (ZEVs) into the state vehicle fleet. It also directs state agencies to develop the infrastructure to support increased public and private sector use of ZEVs. Specifically, it directs state agencies replacing fleet vehicles to replace at least 10 percent with ZEVs, and by 2020 to ensure at least 25 percent of replacement fleet vehicles are ZEVs.

- [Executive Order B-18-12](#)

EO B-18-12 and the companion Green Building Action Plan require state agencies to reduce the environmental impacts of state operations by reducing greenhouse gas emissions, managing energy and water use, improving indoor air quality, generating onsite renewable energy when feasible, implementing environmentally preferable purchasing, and developing the infrastructure for electric vehicle charging stations at state facilities. The Green Building Action Plan also established two oversight groups – the staff-level Sustainability Working Group and the executive-

level Sustainability Task Force – to ensure these measures are met. Agencies annually report current energy and water use into the Energy Star Portfolio Manager (ESPM).

- **Executive Order B-29-15**

EO B-29-15 directs state agencies to take actions in response to the ongoing drought and to the state of emergency due to severe drought conditions proclaimed on January 17, 2014. Governor Brown directed numerous state agencies to develop new programs and regulations to mitigate the effects of the drought and required increased enforcement of water waste statewide. Agencies were instructed to reduce potable urban water use by 25 percent between 2013 and February 28, 2016.

- **Executive Order B-30-15**

In 2015, the governor issued EO B-30-15, which declared climate change to be a “threat to the well-being, public health, natural resources, economy and environment of California.” It established a new interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 and reaffirms California’s intent to reduce GHG emissions to 80 percent below 1990 levels by 2050. To support these goals, this order requires numerous state agencies to develop plans and programs to reduce emissions. It also directs state agencies to take climate change into account in their planning and investment decisions and employ life-cycle cost accounting to evaluate and compare infrastructure investments and alternatives. State agencies are directed to prioritize investments that both build climate preparedness and reduce GHG emissions; prioritize natural infrastructure; and protect the state’s most vulnerable populations.

- **Executive Order B-37-16**

1. The Department of Water Resources (Department) shall work with the Water Board to develop new water use targets as part of a permanent framework for urban water agencies. These new water use targets shall build upon the existing state law requirements that the state achieve a 20% reduction in urban water usage by 2020. (Senate Bill No. 7 (7th Extraordinary Session, 2009-2010).) These water-use targets shall be customized to the unique conditions of each water agency, shall generate more statewide water conservation than existing requirements, and shall be based on strengthened standards for:

- a. Indoor residential per capita water use.

- b. Outdoor irrigation, in a manner that incorporates landscape area, local climate, and new satellite imagery data.
  - c. Commercial, industrial, and institutional water use; and
  - d. Water lost through leaks.
2. The Department shall strengthen requirements for urban Water Shortage Contingency Plans, which urban water agencies are required to maintain. These updated requirements shall include adequate actions to respond to droughts lasting at least five years, as well as more frequent and severe periods of drought. While remaining customized according to local conditions, the updated requirements shall also create common statewide standards so that these plans can be quickly utilized during this and any future droughts.

### **State Administrative Manual & Management Memos**

The following section of the State Administrative Manual (SAM), and associated Management Memos (MMs) currently impose sustainability requirements on the department under the governor's executive authority:

- [\*\*SAM Chapter 1800\*\*](#): Energy and Sustainability
- [\*\*SAM Chapter 1900\*\*](#)
- [\*\*SAM Chapter 4100\*\*](#)
- [\*\*SAM Chapter 3600, Section 3627\*\*](#)
- [\*\*MM 15-03\*\*](#): Minimum Fuel Economy Standards Policy
- [\*\*MM 16-07\*\*](#): Zero-Emission Vehicle Purchasing and EVSE Infrastructure Requirements

### **State-wide Action Plans**

- [\*\*2016 Zero-Emission Vehicle Action Plan\*\*](#)

The plan establishes a goal to provide electric vehicle charging to 5 percent of state-owned parking spaces by 2022. It also advances the ZEV procurement target to 50 percent of light-duty vehicles by 2025.

- [\*\*Safeguarding California Implementation Action Plans\*\*](#):

Directed under EO B-30-15, the Implementation Action Plans outline the steps that will be taken in each sector to reduce risks from climate change.

- **[AB 32 Scoping Plan](#)**: The scoping plan assumes widespread electrification of the transportation sector as a critical component of every scenario that leads to the mandated 40 percent reduction in GHG by 2030 and 80 percent reduction by 2035.

## State Resources and Guidance Documents

California has invested significant resources in understanding the risks of climate change, water efficiency, strategic growth, and state actions available to respond to and reduce these risks. These include the following:

- **[Safeguarding California](#)**: The state's climate adaptation strategy organized by sector. Each sector identifies risks from climate change and actions to reduce those risks.
- **[Planning and Investing for a Resilient California](#)**: Prepared under direction of EO B-30-15, this document provides a framework for state agencies to integrate climate change into planning and investment, including guidance on data selection and analytical approach.
- **[California's Climate Change Assessments](#)**: California has completed three comprehensive assessments of climate change impacts on California. Each assessment has included development of projections of climate impacts on a scale that is relevant to state planning (i.e., downscaled climate projections). These data are available through [Cal-Adapt](#), an online data visualization and access tool.
- **[Water Use Reduction Guidelines and Criteria](#)**: Issued by the California Department of Water Resources February 28, 2013, pursuant to Executive Order B-18-12. Each applicable agency was required to take actions to reduce water use in facilities and landscapes that are operated by the state, including owned, funded, or leased facilities. State-operated facilities are defined as facilities where the agency has direct control of the buildings' function, maintenance, and repair. For leased facilities, the Green Building Action Plan directed at that time that new and renegotiated leases include provisions for water conservation, reporting water use, and installation of sub-meters to the extent possible and economically feasible.
- **[Strategic Growth Council \(SGC\) Resolution on Location Efficiency](#)**: Location efficiency refers to the greenhouse gas emissions arising from the transportation choices of employees and visitors to a building as

determined by the Smart Location Calculator. Adopted on December 6, 2016, the resolution directs members of the SGC to achieve a 10 percent improvement in the Smart Location Score of new leases compared to the average score of leased facilities in 2016.

- **[EDP Compliance Guide](#)**: Environmental Product Declarations (EPD) are third-party verified reports that detail a product's impacts on the environment.

**Tables of Applicable Statutory Requirements, Executive Orders and SAM and Management Memos**

**Table F-1 Statutory Requirements, Executive Orders, Management Memos, and the State Administrative Manual and the Applicable Roadmap Chapters**

Legislation, Executive Orders, & Management Memos	Year Enacted	Climate Adaptation	ZEV	Energy	Decarb	Water	Facilities	Waste	Procurement
<a href="#">SB 32</a>	2015	X	-	-	X	-	-	-	-
<a href="#">SB 246</a>	2015	X	-	-	-	-	-	-	-
<a href="#">SB 416</a>	2023	-	-	-	-	-	X	-	-
<a href="#">SB 837</a>	2023	-	-	-	-	-	X	-	-
<a href="#">SB 1016</a>	2008	-	-	-	-	-	X	-	-
<a href="#">SB 1020</a>	2022	X	-	X	X	-	-	-	-
<a href="#">SB 1106</a>	2005	-	-	-	-	-	-	X	-
<a href="#">SB 1168</a>	2014	-	-	-	-	X	-	-	-
<a href="#">SB 1203</a>	2021	X	-	-	X	-	-	-	-
<a href="#">SB 1319</a>	2014	-	-	-	-	X	-	-	-
<a href="#">SB 1335</a>	2018	-	-	-	-	-	-	X	-
<a href="#">AB 32</a>	2006	X	X	-	X	-	-	-	-
<a href="#">AB 43</a>	2023	X	-	-	X	-	-	-	-
<a href="#">AB 75</a>	1999	-	-	-	-	-	-	X	-
<a href="#">AB 197</a>	2016	X	-	-	X	-	-	-	-
<a href="#">AB 262</a>	2017	-	-	-	-	-	-	-	X
<a href="#">AB 341</a>	2011	-	-	-	-	-	X	X	-
<a href="#">AB 498</a>	2002	-	-	-	-	-	-	-	X
<a href="#">AB 661</a>	2022	-	-	-	-	-	-	X	-
<a href="#">AB 739</a>	2017	-	X	-	-	-	-	-	-
<a href="#">AB 939</a>	2021	-	-	-	-	-	-	X	-
<a href="#">AB 1343</a>	2010	-	-	-	-	-	-	X	-
<a href="#">AB 1482</a>	2015	X	-	-	-	-	-	-	-
<a href="#">AB 1739</a>	2014	-	-	-	-	X	-	-	-

Legislation, Executive Orders, & Management Memos	Year Enacted	Climate Adaptation	ZEV	Energy	Decarb	Water	Facilities	Waste	Procurement
<a href="#">AB 1826</a>	2014	-	-	-	-	-	-	X	-
<a href="#">AB 2396</a>	2016	-	-	-	-	-	X	X	-
<a href="#">AB 2446</a>	2022	-	-	-	X	-	-	-	-
<a href="#">AB 2800</a>	2016	X	-	-	-	-	-	-	-
<a href="#">AB 2812</a>	2016	-	-	-	-	-	X	-	-
<a href="#">EO B-16-12</a>	2012	-	X	-	-	-	X	-	-
<a href="#">EO B-18-12</a>	2015	-	X	X	-	X	X	-	-
<a href="#">EO B-29-15</a>	2015	-	-	-	-	X	-	-	-
<a href="#">EO B-30-15</a>	2015	X	X	X	-	-	X	-	-
<a href="#">EO B-37-16</a>	2016	-	-	-	-	X	-	-	-
<a href="#">MM 15-03</a>	2015	-	X	-	-	-	-	-	-
<a href="#">MM 16-07</a>	2016	-	X	-	-	-	-	-	-
<a href="#">Public Resources Code 25722.8</a>	2001	-	X	-	-	-	-	-	-

**Table F-2 Action Plans, and State Resources and Guidance Documents and the Applicable Roadmap Chapters**

Action Plans, and State Resources and Guidance Documents	Year	Climate Adaptation	ZEV	Energy	Decarb	Water	Facilities	Waste	Procurement
<a href="#">2016 ZEV Action Plan</a>	2016	-	X	-	-	-	-	-	-
<a href="#">Cal-Adapt website</a>	-	X	-	-	-	-	-	-	-
<a href="#">California's 4th Climate Change Assessment</a>	2018	X	-	-	-	-	-	-	-
<a href="#">Planning and Investing for a Resilient California</a>	2018	X	-	-	-	-	-	-	-
<a href="#">Safeguarding California</a>	2014	X	-	-	-	-	-	-	-

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# APPENDIX H

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## Carpool/Vanpool Permit Registration

**Agreement:** By signing this agreement, you are stating that you have read and understand the rules governing carpool/vanpool parking and that all information provided is correct and factual. Any false statements made on the carpool/vanpool registration form that would invalidate your carpool/vanpool may result in immediate termination of parking privileges. If you have more than three carpool/vanpool riders, please complete a new form.

### Permittee Information

Name of Primary Permittee	Division	Work Phone
Residence Address	City	ZIP Code
Signature		Date

### Carpooler Information

Name of Carpooler #1	Employer	Work Phone
Residence Address	City	ZIP Code
Signature		Date

Name of Carpooler #2	Employer	Work Phone
Residence Address	City	ZIP Code
Signature		Date

Name of Carpooler #3	Employer	Work Phone
Residence Address	City	ZIP Code
Signature		Date

Define your route to work in the space provided below:

# APPENDIX H - ELECTRIC VEHICLE CHARGING

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Please note: The Parking & Rideshare Coordinator is on campus Monday through Wednesday, 7:30 a.m. to 4:30 p.m. Only electronic copies of all parking, transit, and rideshare forms will be accepted. An appointment is needed to take care of any parking and transportation related matters. Please email [Parking & Rideshare](#) for any questions.

## Level 1 Electric Vehicle Parking Spaces

Level 1 Electric Vehicle (EV) charging spaces give EV users the ability to plug their EVs into a dedicated Level 1 standard outlet by using their own charging equipment. Level 1 charging stations do not have a charging limit and are not equipped with ChargePoint equipment.

There are a total of 51 Level 1 EV charging spaces located in the Lincoln Plaza East/West (LPEW) garage: 3 in Garage Level 1 (G1) and 48 in Garage Level 2 (G2).

To charge your EV in a Level 1 charging space, you must be a CalPERS team member with a completed [Waiver and Release of Liability agreement](#) on file with the Parking & Rideshare Coordinator. Once the agreement is approved, a vehicle window sticker will be issued that must be displayed in a way that is visible while charging in the Level 1 charging spaces. Consultants, student assistants, and interns are not eligible to use the Level 1 charging spaces in the LP garages. Contact [Parking & Rideshare](#) for additional information regarding Level 1 EV charging spaces.

## Level 2 Electric Vehicle Charging Stations

Level 2 EV charging stations are equipped by [ChargePoint](#). EV owners who use these charging stations do not need to be a CalPERS team member, or a monthly parker in the CalPERS Parking Program, however they must download the [ChargePoint App](#) or sign up for a [ChargePoint card](#). Parkers at the Level 2 EV charging stations are not required to register with Parking & Rideshare; window stickers are not provided or required.

There are a total of 18 Level 2 EV charging stations: 14 in the LPEW garage on G1 and 4 in the Lincoln Plaza North (LPN) garage. All vehicles parked in a Level 2 charging space must be charging. There is a **four-hour** charging limit per day. Any vehicle parked in a Level 2 EV charging station

longer than four hours will receive a parking violation. Excessive parking [violations](#) will lead to suspension or termination of monthly parking.

## **Pre-Post Electric Vehicle Parking Spaces**

For the convenience of EV owners while waiting to charge their EV at a Level 2 EV charging station, there are pre-post charging parking spaces near the charging stations. There is a four-hour limit for using the pre-post parking space. Any vehicle parked in a pre-post charging space for longer than four hours will receive a parking violation.

Please note: Team members who do not have garage monthly parking must pull a ticket and pay to park in the garage while their EV is charging (for Level 1 and/or Level 2 charging). Driving an EV will not improve your parking waitlist status. All team members must go through the same internal [parking waitlist](#) process to obtain monthly parking in the Lincoln Plaza garages, with the exception of team members in specified positions and/or classifications.

# APPENDIX I

## Building Resilience Assessment Report

### CalPERS Lincoln Plaza Headquarters

**B-READY Index: 63 (LPN), 66 (LPEW)**



#### **North Building    East-West Building**

Address:      400 P Street,  
Sacramento, CA 95814      400 Q Street,  
Sacramento, CA 95811

Property Manager:      Colliers International

### Report Overview

The resilience assessment of Lincoln Plaza is based on a review of the building's exposure to various climate related hazards, an on-site assessment, and interviews with the Property Managers and Facilities Engineers. Findings were determined through an analysis of the hazard and survey data, as well as the presence, condition and location of individual building systems.

The B-READY Index shown above is intended to provide an indication of the overall resilience of the building relative to risks from extreme weather events. The higher the score, the more resilient the building. LPN scored a **63 out of 100** and LPEW scored a **66 out of 100** on the B-READY Index, indicating that the building is more resilient than the average building, but there are many opportunities to improve building systems and protect the health and well-being of occupants during difficult circumstances.

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## EXECUTIVE SUMMARY

This B-READY Building Resilience Assessment was conducted for the California Public Employee Retirement System (CalPERS) Lincoln Plaza headquarters, which includes the North (LPN) and East-West (LPEW) buildings. This preliminary report is based on information collected by DNV GL during a site visit and information provided by the building manager, Colliers International, and provides an assessment of local climatic hazards, their likeliness to occur, and an assessment of the structure and building systems in place and their ability to withstand extreme weather events.

The management can use this report to inform decisions on potential investments aimed at mitigating the risk of damage or disruption and enhancing the well-being of the tenants. Adversely impacted building systems or energy supply can affect business continuity and lead to occupant displacement, and higher insurance premiums and operating costs.

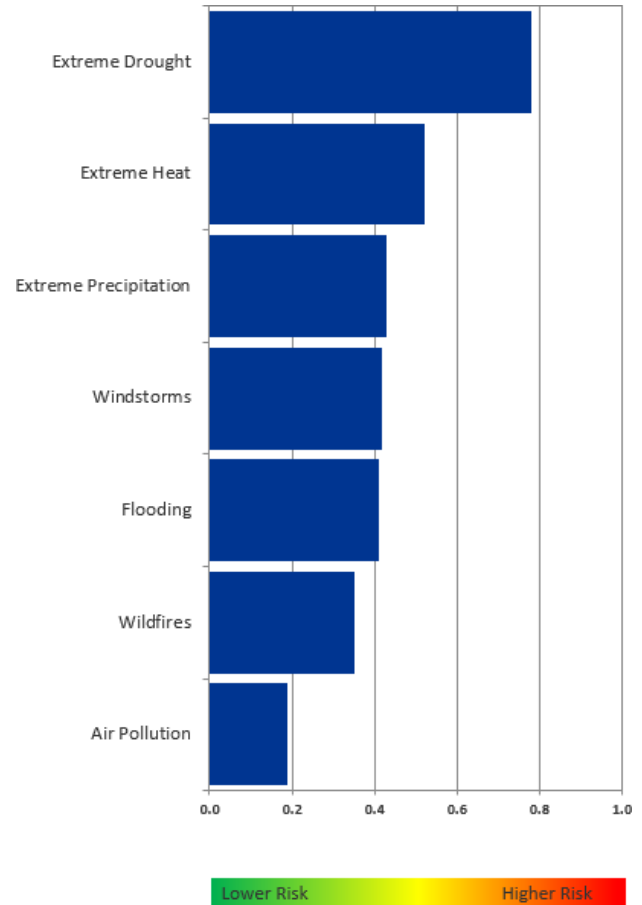
Information about the current level of resilience of these buildings and suggestions for improvements are provided on page 8 and Appendix A. The assessment is based on various climatic events that the building may experience and the impacts of those events across 10 building system categories. The charts and graphs indicate the strengths and potential weaknesses of the buildings through various lenses. Prioritization of improvements are made according to the potential for risk mitigation by the recommended improvements. Of the seven extreme events assessed for the property, the primary events that should be of most concern are **Extreme Drought and Extreme Heat**. Further findings and recommendations are provided below.

**Table 1: Coarse Risk Analysis Summary of Potential Impacts from Relevant Climatic Events**

Event	Potential Areas of Impact		
	Health	\$\$	Occupancy
Air Pollution	•	-	-
Extreme Heat	•	-	•
Extreme Drought	•	-	-
Extreme Precipitation	-	•	•
Flooding	•	•	•
Earthquake	•	•	•
Wildfires	•	•	•
Windstorms	-	•	-

**Figure 1: Level of Exposure to Climatic Events**

(note: geologic events are excluded from the figure below)



**Table 2: Coarse Risk Analysis Summary of Threshold and Occurrence of Relevant Climatic Events**

Event	Threshold	Likelihood of Occurrence
Air Pollution	Air Quality Index >100	High
Extreme Heat	6-9 days >103.5 °F	High
Extreme Drought	Below normal precip	High
Extreme Precip	Storm Intensity	Medium
Flooding	Flood gauge >34 ft	Medium
Earthquake	Magnitude >6.7	Low-Medium
Wildfires	Mod. – High Risk	Low
Windstorms	Peak wind > 57+ mph	Low

## **BUILDING ASSESSMENT**

This section provides a summary of the information that was collected on the building through the previous energy audit, site visit, and interview with the Property Manager (PM) and Facility Engineer. This information was used to inform the resilience assessment.

CalPERS' Lincoln Plaza Headquarters consists of two buildings: Lincoln Plaza North (LPN) and Lincoln Plaza East-West (LPEW). LPN is a five-story commercial building Sacramento, CA, and built in 1986. Lincoln Plaza East-West is a four- and six-story commercial building built in 2005. Both buildings are certified using the LEED for Operations and Maintenance: Existing Buildings rating system: LPEW achieved Platinum and LPN achieved Gold. Prior to its construction in 2005, Lincoln Plaza East-West achieved Gold certification using the LEED for Building Design + Construction rating system.

Lincoln Plaza North is concrete with insulated interior walls. The glazing is a high performance tinted dual pane at most wall surfaces and tinted single pane store front glazing and the building entrances. Overhangs are used at all orientations of the building and are used for shading. A green roof with large mass of plantings is used to reduce building heating and cooling loads. The building consists of five floors and mechanical penthouse and one floor of underground parking. The building is used primarily as office space and includes a kitchen, cafeteria, auditorium, data center and parking garage. The building typically operates from 7:00 am to 5:30 pm Monday through Friday with an average number of 1,600 occupants during the normal occupied period (typically 8 AM - 6 PM).

The Lincoln Plaza East-West are essentially two building towers connected by a breezeway with shared mechanical systems. LPEW is a steel and concrete structure with an insulated cool roof and dual pane, tinted windows. The buildings are also equipped with overhangs and automated interior blinds to minimize solar heat gain. The east tower is four floors, and the west tower is six floors and both towers have a mechanical penthouse and two floors of underground parking. The building is used primarily as office space and includes a daycare, data center, fitness center, and a two-level underground parking garage. The building typically operates from 7:00 am to 5:30 pm Monday through Friday with an average number of 1,700 occupants during the normal occupied period.

Details of the mechanical, electrical and plumbing systems in LPN and LPEW are provided in

## Appendix C.

### *Key Resiliency Measures Currently in Place*

The Lincoln Plaza campus is equipped with backup generators that can power critical loads for approximately 16 hours. LPEW has two generators (one for fire and life safety and one for critical loads) and LPN has one generator for both fire and life safety as well as critical loads. All but one elevator is equipped with backup power ensuring evacuation is possible even in the event of a power outage.

LPEW has flood weirs along with a compressed air billow system to protect the building against flooding. LPN utilizes wooden weirs and sandbags to protect against flooding. The sandbags are kept on site and the PM is responsible for checking and changing sandbags in the summer to prepare for flood season.

Colliers has agreements with fuel and restoration companies to provide post-emergency services, however, availability of fuel resources may be limited by FEMA during a regional disaster.

## RISK ANALYSIS

The overall risk assessment is based on an analysis of each building's potential vulnerabilities, the frequency of a hazardous condition occurring, and the likely impacts on the building and occupants based on current conditions. The level of risk to the building is determined by the frequency of different events and the potential impacts of those events. These are rated on a scale of 1-5 with 5 being the most frequent, or most severe. The ratings are determined through a review of local climate or geologic data and an estimation of potential losses due to structural damage, human health and power disruption. Table 3 and Table 4 define the scales used for the risk assessment.

**Table 3: Event Frequency Scale**

1	2	3	4	5
Not likely to occur	One event in 100 years	Likely to occur once every 10 years	Likely to occur 1 time per year	Likely to occur 1-10 times per year

**Table 4: Consequence Scale**

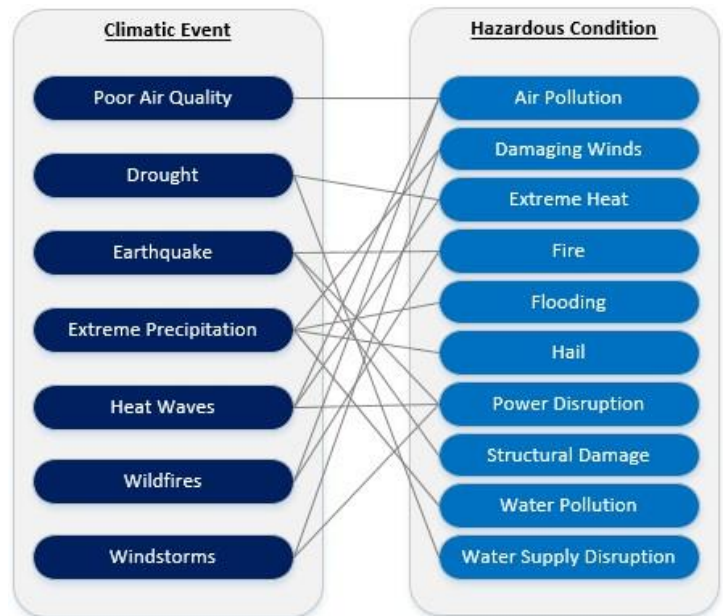
Scale	Scale Descriptor	Human health	Monetary Losses	Occupancy
0	None	Discomfort (physical impediment)	<\$100	>1 day of disruption/inconvenience
1	Minor	Bruises/minor injuries	\$100 - \$1,000	Disruption/inconvenience < 1 week
2	Significant	Minor injuries (1-week absence)	\$1,000 - \$10,000	Closed for 1-5 business days
3	Serious	Serious injuries (+1 month in hospital)	\$10,000 - \$100,000	Closed for > 1 week
4	Critical	Several injuries (require hospitalization)	\$100,000 - \$1,000,000	Closed for > 1 month
5	Catastrophic	1-2 fatalities	>\$1,000,000	Permanent loss of occupancy

*Note: Consequences may be based on loss of life, monetary losses, or occupancy related. Monetary losses consider both losses due to structural damage and losses due to power failure. The greatest impact in any of these categories determines the consequence classification.*

The B-READY assessment relates individual climatic or geologic events to hazardous conditions that results from those events. It is these hazardous conditions which lead to health or monetary losses or disruptions to occupancy. Figure 2 shows how the climatic events are mapped to hazardous conditions.

This shows that the hazardous conditions that are of concern are structural damage from seismic activity, power disruption, extreme heat. Fires, flooding and water supply disruption are also higher risk conditions.

**Figure 2: Selected Climatic Events links to Hazardous Conditions**

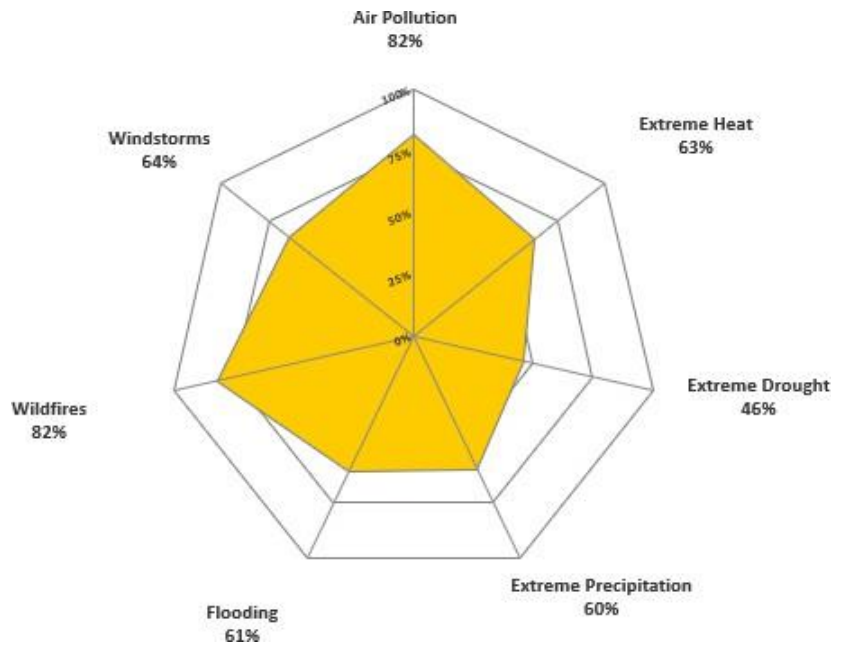


## Lincoln Plaza North

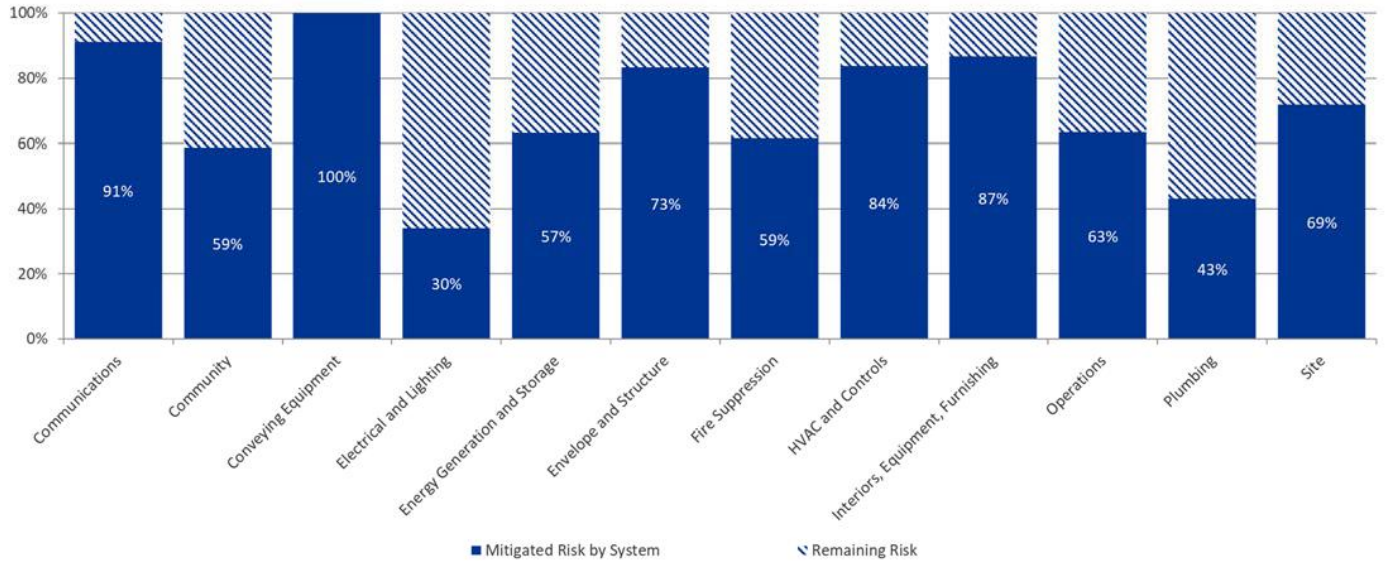
The B-READY tool matches individual climatic events with the hazardous conditions that result from those events to assess risks and resilience. It is these conditions that lead to health or monetary losses and/or disruptions to occupancy. The level of resilience is based on DNV GL's assessment of the capacity of systems currently in-place in the building to respond to those hazards.

Figure 3 illustrates the building's resilience to each of the climatic events assessed. The higher the percentage, the better equipped the building is to handle such events. Figure 4 displays the relative level of exposure to various hazardous conditions that could result from extreme weather events (e.g., hurricanes cause damaging winds, flooding, power loss, and loss of water supply).

**Figure 3: B-READY Indices of Risk Mitigation to Climatic Events for LPN**



**Figure 4: B-READY Evaluation of Existing Mitigation Measure Effectiveness by Hazard for LPN**



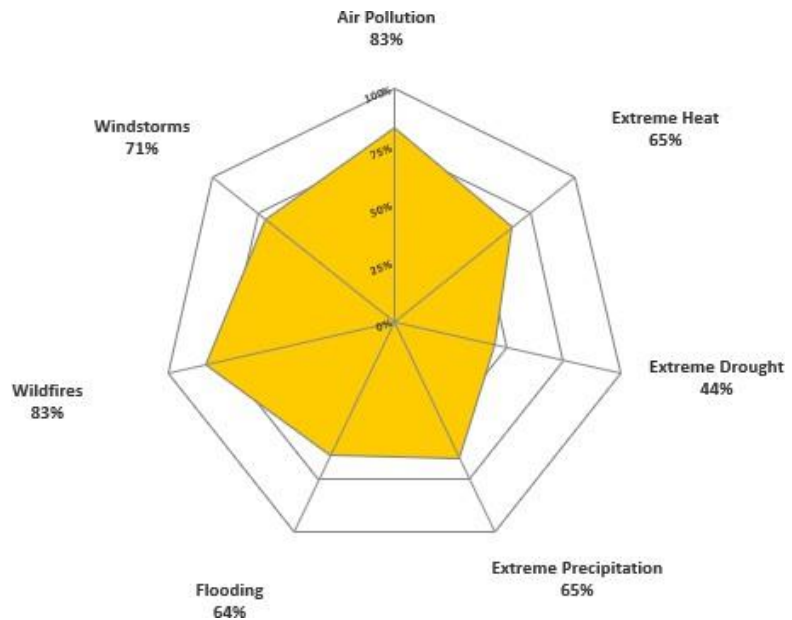
## Lincoln Plaza East-West

The B-READY tool matches individual climatic events with the hazardous conditions that result from those events to assess risks and resilience. It is these conditions that lead to health or monetary losses and/or disruptions to occupancy. The level of resilience is based on DNV GL's assessment of the capacity of systems currently in-place in the building to respond to those hazards.

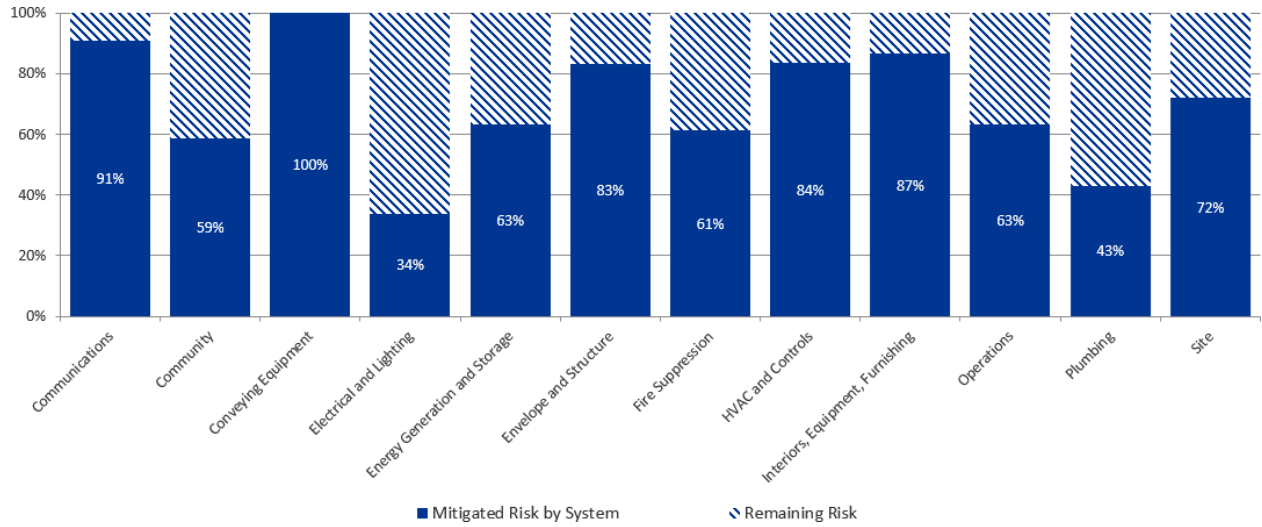
Figure 5 illustrates the building's resilience to each of the climatic events assessed. The higher the percentage, the better equipped the building is to handle such events.

Figure 6 displays the relative level of exposure to various hazardous conditions that could result from extreme weather events (e.g., hurricanes cause damaging winds, flooding, power loss, and loss of water supply).

**Figure 5: B-READY Indices of Risk Mitigation to Climatic Events for LPEW**



**Figure 6: B-READY Evaluation of Existing Mitigation Measure Effectiveness by Hazard for LPEW**



## FINDINGS AND RECOMMENDATIONS

The findings and recommendations provided here are based on an assessment of individual building systems and their contribution to the overall resilience of each building during extreme climatic events or other natural hazards. This was completed using DNV GL's proprietary B-READY Resilience Tool. The assessment uses the results of our climatic hazard assessment (Appendix B) and considers the following:

- Likely impacts of various hazardous conditions
- The equipment or strategies currently in-place and their capacity to reduce impacts
- The amount of risk mitigated by making certain improvements.

Of the recommended strategies, based on the preliminary B-READY assessment, the top four recommendations are:

1. **Relocate electrical systems:** Electric appliances and equipment should be relocated to areas that are unlikely to flood and electrical shutoff points and circuit breakers should be protected from potential flooding.
2. **Backflow Prevention:** Install backflow valves on building sewage lines to prevent reverse-flow flood damage.
3. **Surge Protection:** Ensure electrical services are protected with a minimum of 80KA surge protection installed in accordance with NFPA 70 and the manufacturers installation instructions. Check the functionality of existing surge protection systems and consider upgrading if necessary.
4. **Chemical safety:** Confirm that toxic materials are not stored in areas vulnerable to flooding (such as the garage and shop).

These top recommendations may not correlate directly to the primary climatic hazards for the site, as the analysis considers the level of exposure of the building, the consequence threshold for climatic events, and the amount of risk mitigated by the resilience improvements. Further, the analysis considers the use of the building in prioritizing resilience recommendations. As building occupants will be sent home if building conditions are unsuitable to remain, minimizing damages to the building would be prioritized over preserving the building as a place of refuge for the duration of an emergency.

**Appendix A provides a complete listing of additional resilience improvement recommendations that should be considered in the near and long-term for Lincoln Plaza North and Lincoln Plaza East-West.**

These findings and recommendations are provided as information only and meant to give guidance to CalPERS and Colliers on where resilience improvements can be made. Prior to making major changes, DNV GL recommends that the conducting a full cost/benefit analysis and engineering study to confirm the feasibility of these strategies.

The B-READY index serves as a benchmark, so as improvements are made, the index for each building should improve. Future B-READY re-assessments may be conducted relatively easily since this first one is now complete.

## Appendix A – Complete List of Recommendations

Table 5: Recommendations

Building	System Type	Resilience Improvement	Hazard Addressed	Risk Addressed	Recommendation
LPN and LPEW	Site	Sea Level Rise Protection Strategies	Flooding	<p>Existing structures, infrastructure, and critical facilities can be protected from sea level rise through the following:</p> <ul style="list-style-type: none"> <li>▪ Retrofitting structures to elevate them above potential sea level rise levels.</li> <li>▪ Retrofitting critical facilities to be 1 foot above the 500-year flood elevation (considering wave action) or the predicted sea level rise level, whichever is higher.</li> </ul>	For long term planning, consider retrofitting the building so that critical elements are located at least 1 foot above the 50-year flood elevation. This is a long-term planning item rather than an immediate item to be addressed.
LPN and LPEW	Operations	Chemical Safety	Flooding	Toxic materials in flood zones should be stored in a floodproof area. Toxic materials are defined as those having a State of California Prop 65 label requirement, see Appendix D for more information.	Confirm that toxic materials are not stored in areas vulnerable to flooding (such as the garage and shop).

Building	System Type	Resilience Improvement	Hazard Addressed	Risk Addressed	Recommendation
LPN and LPEW	Operations	Relocate Vulnerable Elements	Flooding	Elevating or protecting critical equipment, which includes mechanical systems such as HVAC units, electrical equipment, telecommunications services, and other essential equipment to building operations can avoid major replacement or repair costs from structural damage.	Evaluate the cost of relocating critical equipment and materials out of the garage, which may be vulnerable to flooding.
LPN and LPEW	Electrical and Lighting	Surge Protection	Power Disruption	Electrical services shall be protected with a minimum of 80KA surge protection installed in accordance with NFPA 70 and the manufacturers installation instructions	Evaluate existing surge protection for efficacy and consider upgrading.
LPN and LPEW	Electrical and Lighting	Electrical Safety	Flooding	Electrical systems are typically located in basements below grade where water intrusion can cause safety hazards. Damage to electrical equipment can also result from exposure to flood waters contaminated with chemicals, sewage, oil, and other debris. No matter what caused the flood, electrical appliances should be examined	Confirm whether electrical shutoff points and circuit breakers are located in areas that may flood (i.e. the garage). In addition, relocate electrical appliances and machinery out of potential flood areas.
LPN	Plumbing	Backflow Prevention	Flooding	Backflow is the reversal of flow of drainage or sewage caused by a downstream pressure reversal.	Install backflow valves on building sewage lines to prevent reverse-flow flood damage.

Building	System Type	Resilience Improvement	Hazard Addressed	Risk Addressed	Recommendation
LPN	Envelope and Structure	Wind Resistance Roof	Damaging Winds	Wind velocity can cause major damage to structures and other items. Roofing systems must be designed for their local wind patterns.	Inspect the roof for its ability to withstand extreme wind conditions.
LPN	Energy Generation and Storage	Energy Generation Resiliency	Power Disruption	Backup power systems support a buildings' operations during power outages, but must be designed such that they are not susceptible to the cause of the hazard as well.	Confirm whether all electrical components and fuel supply for the backup power is located above the base flood elevation (BFE) and protected from water intrusion.

## Appendix B – Climatic Conditions

The campus is located in Sacramento east of the Sacramento River. The most frequent climate events that occur at this location are heat waves, poor air quality, drought, extreme precipitation (i.e., excessive rainfall and associated flooding), and earthquakes.

The vulnerability of the building to climate-related events is determined based on CalAdapt, geospatial data, weather models, and on-site observations of the physical conditions at the site. The frequency of these events is based on historical data or forecasted climate change models, as detailed in the table below. The categorization methodology of this assessment is provided below, including a description of the weather events or climatic conditions that could occur at the site and the data sources used. For those frequencies that are based on historical data, best professional judgement is used to determine if the categorization should be adjusted to better match probable future conditions in a changing climate.

**Table 6: Hazardous Condition and Climatic Event Frequencies with Data Sources**

Item	Information
<b>Air Pollution</b>	<b>High Frequency Event</b>
<b>Description</b>	Ambient air quality monitoring is used to determine whether areas are meeting the National Ambient Air Quality Standards for pollution linked to cancer, asthma, allergies, impaired lung development in children, and other health impacts that negatively affect the human respiratory and cardiovascular system.
<b>Site Vulnerability</b>	Sacramento has on average at least 1 day/year with Unhealthy AQI (151-200). The median AQI in Sacramento is 54, which is considered Moderate.
<b>Source</b>	EPA Air Quality Index Report
<b>Data Type</b>	Historical Records
<b>Impacts of Climate Change</b>	Projections for various pollutants are varied. Particulate Matter levels are likely to decrease, while ground-level ozone and allergens will increase. Further, the increase in drought and wildfires may cause more days with diminished air quality.
<b>Extreme Heat</b>	<b>High Frequency Event</b>
<b>Description</b>	Heat waves are often exacerbated in urban areas, where a lack of vegetation and excess of concrete cause an urban heat island effect. Certain populations, including the elderly, children, economically disadvantaged, and people with some chronic health conditions. Increased power demand for cooling can put a strain on the grid.
<b>Site Vulnerability</b>	Annual mean maximum temperatures will increase for Sacramento along with average numbers of days above the extreme heat threshold (103.5 oF). By 2031, the average number of days above the EHT is projected to reach 21 days annually.

Item	Information
<b>Source</b>	CalAdapt
<b>Data Type</b>	Modeled Data based on current conditions
<b>Impacts of Climate Change</b>	Climate change will increase the number of days of hazardous temperatures. These changes will directly affect urban public health through increased risk of heat stress, and urban infrastructure through increased risk of disruptions to electric power generation. Rising temperatures also have direct impacts on crop yields and productivity of key regional crops, such as fruit trees; potentially causing long term impacts on food production.
<b>Extreme Drought</b>	<b>High Frequency Event</b>
<b>Description</b>	Drought conditions include low precipitation, the timing of water availability, or decreased access to water supply. The US Seasonal Drought Outlook bases future climate outlooks on current patterns in the ocean and atmosphere.
<b>Site Vulnerability</b>	California is very susceptible to prolonged drought. Coupled with more heat waves and less frequent precipitation, drought is projected to become more frequent, intense, and longer lasting than in the historical record. Drought conditions present a huge challenge for regional management of water resources and natural hazards such as wildfire and landslides.
<b>Source</b>	U.S. Drought Monitor, CalAdapt
<b>Data Type</b>	Modeled Data
<b>Impacts of Climate Change</b>	As average temperatures increase, drought periods are projected to become longer and more frequent. In addition to becoming more frequent, droughts will become more severe, leading to stricter water restrictions during drought periods.
<b>Flooding (including Coastal Storm Surge, Sea Level Rise, and Riverine)</b>	<b>Medium Frequency Event</b>
<b>Description</b>	Storm surges cause damage to coastal areas by an abnormal rise of seawater caused mainly by the forces of a storm's winds and wave action, resulting in large, flooded areas. This event is assessed based on projected Sea Level Rise (SLR) conditions. Further, flooding due to heavy rainfall is considered.
<b>Site Vulnerability</b>	The sea level along the California coast has risen between 6.7 to 7.9 inches over the past 100 years. The region is susceptible to flooding from both coastal surges as well as riverine flooding due to intense rainfall events. The Sacramento River, which is currently at peak capacity, is likely to be impacted by extreme precipitation in the future. An increase in winter flood hazard risk in rivers is projected due to the increase in flows of atmospheric precipitation into California's coastal ranges and the Sierra Nevada.

Item	Information
<b>Source</b>	NPCC2 Climate Risk Information 2013 Projection Dataset, CalAdapt, Sacramento Climate Action Plan
<b>Data Type</b>	Modeled Data
<b>Impacts of Climate Change</b>	Sea Level Rise will cause storm surge and flooding events to be more frequent and severe with the greatest impacts occurring during high tides and storm events. A shift in winter precipitation from snow to rain, coupled with shifts in early snowpack melt will lead to higher runoff volumes causing a potential increase in riverine flooding.
<b>Extreme Precipitation</b>	<b>Medium Frequency Event</b>
<b>Description</b>	Rainfall intensity is classified according to the rate of precipitation. Heavy rainfall can lead to flash flooding, building drainage damage, sewer overflow, landslides, and disrupt transport and communications. Decreased rainfall can lead to water shortages and drought.
<b>Site Vulnerability</b>	Sacramento typically experiences great variation in precipitation year to year. During El Niño years, Sacramento typically experiences heavy precipitation. Changes in snowfall and the timing of snowmelt also cause challenges in managing Sacramento's water supply as well as protecting against flooding from runoff.
<b>Source</b>	NOAA.gov, National Climate Assessment, CalAdapt, Sacramento Multi-Hazard Mitigation Plan
<b>Data Type</b>	Historical Records
<b>Impacts of Climate Change</b>	Slight increases in precipitation are indicated for Sacramento, though while predictions agree on drying in the south, they vary about the sign of the changes in the northern part of the region. Generally, there has been less late-winter precipitation falling as snow, earlier snowmelt, and earlier arrival of most of the year's streamflow in California.
<b>Earthquakes</b>	<b>Low-Medium Frequency Event</b>
<b>Description</b>	Earthquakes are a natural hazard that cause similar disaster responses to climate hazards. Shaking is measured in units of gravity (g) that express the horizontal acceleration caused by an earthquake relative to the acceleration of a falling object caused by Earth's gravity.
<b>Regional Vulnerability</b>	According the USGS, almost everyone in the state of California lives within 15 miles of an active fault, though large earthquakes many miles away can cause significant damage. The largest fault, San Andreas, runs up the entirety of California from North to South.  Sacramento is located in the San Joaquin fault zone near the Cleveland Hills and Sierra Nevada faults. Smaller earthquakes are frequent; however, there is a

Item	Information
	greater than 75% chance of a M6.0+ earthquake occurring in the next 30 years, which poses the greatest risk.
<b>Source</b>	USGS, Earthquake Authority
<b>Data Type</b>	Historical Records
<b>Impacts of Climate Change</b>	None. While climate change does not affect earthquakes directly, they can exacerbate other issues like wildfires and air quality.
<b>Wildfires</b>	<b>Low Frequency Event</b>
<b>Description</b>	Extended dry climate conditions may result in heavily vegetated areas to be susceptible to combustion. The U.S. Forest Service's Wildfire Hazard Potential map defines areas of wildfire risk.
<b>Regional Vulnerability</b>	California is very susceptible to wildfires. Although wildfires are less likely to occur in large cities, due to a lack of fuel, nearby wildfires can still pose a threat to these cities, in particular by impacting air quality. Sacramento is not located in a high fire hazard severity zone (FHSZ) as designated by state or local jurisdictions, but proximity to high FHSVs may cause local air quality impacts as noted above.
<b>Source</b>	Fire Modeling Institute (FMI), National Climate Assessment, CalFire, CalAdapt
<b>Data Type</b>	Modeled Data
<b>Impacts of Climate Change</b>	Hotter, drier conditions and changing precipitation patterns will increase the likelihood of wildfires. Climate outweighed other factors in determining burned area in the western U.S. from 1916 to 2003, a finding confirmed by 300-year long reconstructions of southwestern fire history. Between 1970 and 2003, warmer and drier conditions increased burned area in western U.S. mid-elevation conifer forests by 650%.
<b>Windstorms</b>	<b>Low Frequency Event</b>
<b>Description</b>	Sacramento experiences a variety of windstorms, which include straight-line storms that blow in one direction, thunderstorms, and seasonal winds. Damage results from debris, rooftop uplift, and exposed electrical systems. Thunderstorms for Sacramento are considered severe with winds gusting in excess of 50 knots (57.5 miles per hour)
<b>Regional Vulnerability</b>	Sacramento experiences severe storms/thunderstorms which include heavy rains and are often accompanied by strong winds, lightning, and hail. These windstorms can result in debris, rooftop uplift, and downed trees, causing power outages.
<b>Source</b>	Sacramento Multi-Hazard Mitigation Plan
<b>Data type</b>	Historical Records
<b>Impacts of Climate Change</b>	Extreme wind events are not expected to change in frequency or severity due to climate change.

Item	Information
<b>Extreme Winter Storms</b>	<b>Low Frequency Event</b>
<b>Description</b>	Winter weather including snowfall accumulation, blizzards, freezes, wind chill, sleet, hail, and extreme cold.
<b>Regional Vulnerability</b>	Extreme winter weather is unlikely to occur in Sacramento; however, there have been occurrences of freezing temperatures and hail which have a greater impact on the area as it is not typically exposed to these events. Although Sacramento is not particularly susceptible to extreme winter weather, changes in snowfall have been noted as changes in snowmelt patterns affect the rest of the state. As the climate warms, less precipitation falls as snow, and more snow melts during the winter. That decreases snowpack (the amount of snow that accumulates over the winter) and decreases the water supply.
<b>Source</b>	NESIS, City of Sacramento General Plan
<b>Data Type</b>	Historical Records
<b>Impacts of Climate Change</b>	Diminishing snowpack can shorten the season for skiing and other forms of winter tourism recreation. The tree line may shift, as mountain hemlock and other high-altitude trees become able to grow at higher elevations. A higher tree line would decrease the extent of alpine tundra ecosystems, which could threaten some species.

## Appendix C – Mechanical, Electrical and Plumbing Systems

Table 7: LPN Mechanical, Electrical and Plumbing System Descriptions

MEP Building System	Equipment Type	System Description and Condition
<b>Heating</b>	Forced air	Primary air system: 4 variable flow supply fans, 8 variable flow return fans, and 6 constant volume return fans with a chilled water coil bank. Secondary air system: constant volume fan terminal units, VAV terminals, and fan powered mixing terminals 8 AHUs serve dedicated spaces throughout the building, not connected to the primary air system.
<b>Cooling</b>	Chilled water plant	Misc.: 5 computer room air conditioning units (CRAC) that serve the data center. Each CRAC is constant volume, has redundant cooling capability, and humidification. The primary cooling uses chilled water from the chilled water plant and the secondary cooling is mechanical refrigeration with a water-cooled condenser that uses condenser water from the chilled water plant and is used to provide additional cooling or dehumidification. There are also two CRAC units (100% redundancy) with the same configuration that serves the UPS room.
<b>Ventilation and Fans</b>	Ventilation and fans	Return and exhaust dampers for 100% economizer operation.
<b>Lighting &amp; Electrical</b>	Simple Power Distribution	The lighting is wired for bi-level switching and is controlled from the master lighting control center / schedule. Fluorescent lighting.
<b>Domestic Hot Water</b>	Boiler plant	4 hot water condensing boilers.
<b>Plumbing and Sewer</b>	Standard piping	N/A

**Table 8: LPEW Mechanical, Electrical and Plumbing System Descriptions**

<b>MEP Building System</b>	<b>Equipment Type</b>	<b>System Description and Condition</b>
<b>Heating</b>	Underfloor air with reheat	<p>Primary air system: 8 rooftop VAV AHUs, which include separate supply and return fans, chilled water coil, heating hot water coil with chilled water switch over capability, minimum outside air damper, outside air damper, exhaust damper, and mixed air damper for 100% economizer operation.</p> <p>Secondary air system: underfloor air distribution system that includes fan terminal units with a variable speed supply fan motor and heating hot water coil.</p>
<b>Cooling</b>	Chilled water plant	<p>The data center is equipped with fifteen computer room air conditioning units (CRAC). Each CRAC is constant volume, has redundant cooling capability, and humidification. The primary cooling uses chilled water from the chilled water plant and the secondary cooling is mechanical refrigeration with a water-cooled condenser that uses condenser water from the chilled water plant and is used to provide additional cooling or dehumidification.</p> <p>In addition, there are forty constant fan coil units that serve electrical rooms, data rooms, and miscellaneous equipment rooms throughout the building in both towers. These units all utilize chilled water from the chilled water plant and are controlled and monitored by the BMCS. One cooling only ductless split systems is used to control to provide supplemental cooling.</p>
<b>Ventilation and Fans</b>	Ventilation and fans	<p>The mixed air damper and exhaust damper are controlled a positive pressure in the return air discharge section of the air handling unit.</p>
<b>Lighting &amp; Electrical</b>	Simple Power Distribution	<p>The lighting is wired for bi-level switching and is controlled from the master lighting control center / schedule. Fluorescent lighting.</p>
<b>Domestic Hot Water</b>	Gas-fired water heater plants	<p>Each plant is located in at parking level 1 of each tower and consists of two gas fired water heaters (LPW: (1) 125 gallon and (1) 90 gallon, LPE: (2) 90 gallon) with 83% AFUE and includes a demand-controlled combustion exhaust system.</p>
<b>Plumbing and Sewer</b>	Standard Piping, Sanitary pumps with check valves	N/A

## Appendix D – Hazardous Materials

B-READY references Occupational Safety and Health Administration (OSHA) for its definition of toxic materials. OSHA defines chemical hazards and toxic substances as those that pose a wide range of health hazards (such as irritation, sensitization, and carcinogenicity) and physical hazards (such as flammability, corrosion, and volatility). OSHA's Hazard Communication Standard (HCS) intent is to ensure that information about chemical and toxic substance hazards in the workplace and associated protective measures is disseminated to workers. OSHA defines permissible exposure limits (PELs) to protect workers against the health effects of exposure to hazardous substances, including limits on the airborne concentrations of hazardous chemicals in the air. Most OSHA PELs are 8-hour time-weighted averages (TWA), although there are also Ceiling and Peak limits, and many chemicals include a skin designation to warn against skin contact. There are many substances that OSHA does not have established exposure limits.

As a complement, the California Division of Occupational Safety and Health (Cal/OSHA) has established its own, extensive Permissible Exposure Limits (PELs) that are enforced in workplaces under its jurisdiction. Of all the states that have OSHA-approved State Plans, California has the most extensive list of PELs. California also has established labeling requirements from known carcinogens and reproductive harm. Proposition 65, officially known as the Safe Drinking Water and Toxic Enforcement Act of 1986. The proposition protects the state's drinking water sources from being contaminated with chemicals known to cause cancer, birth defects or other reproductive harm, and requires businesses to inform Californians about exposures to such chemicals.

In the event of a disaster the limits and exposures may differ widely from the intended application of a chemical or substance. A good proxy for understanding areas of the facility where hazardous materials may be present in the compliance with OSHA requirements and the tracking of Material Safety Data Sheets, and/or the presence of required California Prop 65 warning signs. An extensive review of the materials present on site was not included in this scope of work. We have developed a practical guide to managing hazardous materials for more resilient buildings.

## Common hazardous chemicals may include:

- Cleaning products
- Automotive and equipment maintenance products like antifreeze, coolant, or motor oil
- Miscellaneous building materials items like batteries, mercury thermometers and florescent light bulbs
- Flammable products like kerosene, diesel, propane tanks and lighter fluid
- Workshop or painting supplies such as paint thinners, turpentine, and adhesives
- Lawn and garden products like herbicides and insecticides, pesticides
- Additional hazardous materials commonly occurring or used on a construction/renovation sites include mold, mercury, adhesives and sealants, sewage overflows, paints and specialty coatings, pesticides and herbicides, motor oil and fuel, solvents, acids, pressure impregnated wood, septic systems, hydrocarbon plumes, and fugitive dust and storm water runoff.

The CalPERS Headquarters Buildings Lincoln Plaza North, East-West, (and South) Buildings implement a Green Cleaning Plan, which states a goal of:

*"...to reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particulate contaminants, which adversely affect air quality, human health, building finishes, building systems and the environment, by implementing, managing and auditing cleaning procedures and processes..." and, "minimizing or eliminating any potential health risks related to indoor air quality, chemical exposure, particulates and/or biological contaminates."*

The Green Cleaning Plan states that "Safety training is part of all product and procedure training including Hazard Communication, prevention, response, and reporting." As is common with Green Cleaning Plans recommendations are made about the application of chemicals from concentrate (this is done for many environmental reasons and is part of a sound green cleaning plan). The areas where chemicals are stored in bulk can be an issue affecting building resiliency if the concentrates are stored in areas prone to flooding or water intrusion in a climatic or geologic event.

## The following are guidelines for buying and storing chemicals safely:

- Always use appropriate Personal Protection Equipment as directed by the manufacturer MSDS
- Keep products containing hazardous materials in their original containers and never remove the labels unless the container is corroding. Corroding containers should be repackaged and clearly labeled.
- Never store hazardous products in food containers.
- Never mix hazardous chemicals or waste with other products. Incompatibles, such as chlorine bleach and ammonia, may react, ignite or explode.
- Clean up any chemical spill immediately. Allow the fumes in the rags to evaporate outdoors, then dispose of the rags by wrapping them in a newspaper and placing them in a sealed plastic bag in your trash can.

- Dispose of hazardous materials correctly and follow notification protocols. Both the federal government and the state have stringent notification requirements for spills of hazardous materials. Typically, the first reporting should be to the local Fire Department. If an uncontained spill moves into a secondary transport system (e.g., storm drain, creek, estuary), other state and federal agencies (e.g., Coast Guard, Fish and Game, Regional Water Control Board) are notified and may participate in the clean-up.

**Table 9: Selected List of Common Applications of Hazardous Materials in Buildings**

Chemical	Sample Products/ Application	Potential Health/Environmental Effects
Acetaldehyde	Adhesives	Acute Toxin, carcinogen, environmental toxin
Acetone	Varnishes, lacquers, paint thinners, art supplies, adhesives	Chronic toxin, environmental toxin
Ammonia	All-purpose cleaners, glass cleaners, dyes	Acute Toxin, chronic toxin, environmental toxin
Chlorine	Bleach, disinfectants	Acute Toxin, chronic toxin, environmental toxin
Hydrochloric Acid	Heavy-duty cleaners	Acute Toxin, chronic toxin
Mercury	Batteries, electronics, fluorescent lamps	Chronic toxin, environmental toxin, neurotoxin, reproductive effects
Xylenes	Paints, adhesives, pesticides	Chronic toxin, environmental toxin, development effects, reproductive effects

Data Sources:

1. INFORM, Inc., 'Tackling Toxics in Everyday Products: A Directory of Organizations' (New York, 1992)
2. Health effects data are from the U.S. Environmental Protection Agency's (EPA's) toxicity matrix for right-to-know chemicals.

*Note: The information in Table 9 is not intended to be a complete or comprehensive list of chemicals or hazards, but merely a representative list of common chemicals that may be present in commercial buildings.*