



# NAPA STATE HOSPITAL

Napa County, California



**\$1.63MM**

Verified Annual Savings

**98,025 MMBTU**

Verified Annual Energy Savings

**20.7MM GAL.**

Annual Water Savings

## At a glance

CEG Solutions partnered with California's Department of General Services and Department of State Hospitals to modernize infrastructure for Napa State Hospital, improving comfort, cutting energy use, and reducing emissions.

## Project Highlights

- \$54M ESPC covering 138-acre, 1.5M SF campus
- \$1.63MM verified annual savings
- 98,025 MMBtu energy savings
- 20.7M gallons water savings annually
- 27% site-wide energy reduction
- 5,700 metric tons GHG avoided
- Incentives of \$141K secured

## OVERVIEW



Built in 1875, Napa State Hospital faced major challenges: aging infrastructure, limited records for many of its 100+ buildings, and strict security requirements for its medium-security, controlled-access environment. With over 1.5M SF of administrative offices, inpatient housing, kitchens, libraries, gyms, and activity spaces, the hospital needed cost-neutral solutions that could deliver deep savings while improving patient comfort and staff operations.



## STRATEGIES



Building Performance Compliance, Electrification & Carbon Reduction, Energy & Operational Efficiency, Performance Contracting, Resiliency



## Energy Conservation Measures

- Boiler upgrades & steam system optimization (pressure reduction, traps, insulation)
- Central plant blowdown heat exchanger replacement
- CAV-to-VAV AHU conversion
- HVAC upgrades with new AHUs, VFDs, controls
- Building control strategies & open-source network
- LED lighting retrofits (10,000 fixtures) with advanced controls
- Domestic water fixture upgrades & plumbing retrofits
- Kitchen HVAC upgrades & high-efficiency heat pumps
- Laundry washer/dryer and rack conveyor replacements

## SOLUTIONS



CEG implemented a two-phase project with ten ECMs. Phase I revitalized the steam system by reducing boiler pressure, repairing steam traps, and insulating distribution lines, while upgrading the central plant blowdown heat exchanger. HVAC upgrades converted CAV AHUs to VAV, added new AHUs, VFDs, and controls, and optimized operations with advanced strategies. Lighting was upgraded with 10,000 LED fixtures and controls, while plumbing retrofits cut water use. Phase II added high-efficiency kitchen heat pumps, a new air-source heat pump, and an open-source control network with new thermostats, sensors, and controllers.

## RESULTS



The project reduced annual energy use by 98,025 MMBtu, water use by 20.7M gallons, and GHG emissions by 5,700 metric tons — delivering \$1.63MM in annual savings. Average site EUI dropped 27%, while new HVAC and control strategies improved patient comfort across inpatient spaces. Infrastructure renewal extended asset life, reduced O&M costs, and ensured long-term resilience for one of California's largest and most complex healthcare campuses.

