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Office of the President

TO MEMBERS OF THE FINANCE AND CAPITAL STRATEGIES COMMITTEE:

ACTION ITEM

For Meeting on January 19, 2023

PRELIMINARY PLANS FUNDING, CENTRAL UTILITY PLANT EXPANSION, DAVIS HEALTH CAMPUS

EXECUTIVE SUMMARY

UC Davis Health proposes the Central Utility Plant (CUP) Expansion project to accommodate future planned growth on the UC Davis Medical Center, Sacramento campus. The project would construct an approximately 40,000-gross-square-foot extension to the CUP, providing necessary space for equipment and operations upgrades to improve utility capacity, reliability, and performance. The project would also provide seismic code-required upgrades to the existing structure. The project would position UC Davis Health to decarbonize CUP operations over the long term through a new dedicated connection to the local electricity provider.

The Regents are being asked to approve preliminary plans funding of $15 million, to be funded with hospital reserves. During the preliminary planning phase, the UC Davis Health campus will confirm the project scope and budget, complete the selection of a design-build team, develop preliminary plans, complete site surveys and geotechnical testing, and prepare California Environmental Quality Act (CEQA) documentation. The UC Davis Health campus anticipates returning to the Regents for full budget and design approval following action pursuant to CEQA in the fall of 2024.

RECOMMENDATION

The President of the University recommends that the Finance and Capital Strategies Committee recommend to the Regents that the 2022-23 Budget for Capital Improvements and the Capital Improvement Program be amended to include the following project:

Davis: Central Utility Plant Expansion – preliminary plans – $15 million to be funded with hospital reserves.

BACKGROUND AND PROJECT DRIVERS

The UC Davis Medical Center, located in Sacramento, has a 50-year history of providing high-quality patient care across the greater Sacramento region and the 33 counties it serves. UC Davis Medical Center's 142-acre Sacramento campus (Campus) is served by the Central Utility Plant (CUP), a central heating and cooling plant built in 1998 that is currently operating at near capacity.

The CUP currently provides the Sacramento campus with utilities, including hydronic water, electrical, and emergency power. Based on the 2020 Long Range Development Plan (LRDP) Update, the Sacramento campus will add two million new square feet of space by 2035, including major projects such as the Sacramento Ambulatory Surgery Center (SASC) and the California Hospital Tower. Utility demand from this physical plant growth is anticipated to exceed the current utility capacity.

In 2019, UC Davis Health undertook a comprehensive utilities master planning effort to outline the infrastructure and facilities needed to address future healthcare, education, research, and teaching needs on the Sacramento campus and in the greater Sacramento region. The utility master planning team identified a critical need for UC Davis Health to upgrade utility services and expand the infrastructure to support current and upcoming utility demands and to address its commitment to reduce carbon emissions.

In May 2022, the initial phase of utility expansion and upgrade was approved as a component of the SASC project. This first phase upgraded CUP site infrastructure and connections to provide thermal and electrical utilities to serve the SASC. Future improvements to the CUP are needed to support anticipated growth across the campus and set the stage for future CUP conversion to fossil-fuel-free operations or a fully electrified CUP for the entire campus.

As part of the Utility Master Plan, the team evaluated code compliance with SB 1953 Seismic Compliance requirements, which must be completed by 2030 to allow the campus to continue healthcare operations.

PROJECT DESCRIPTION

The proposed project has three primary objectives:

- Increase the resiliency of utilities in the event of a power outage to maintain clinical care for the community in the Sacramento region.
- Initiate the development of a more efficient operating utility plant to reduce greenhouse gas (GHG) emissions and set the Sacramento campus on a path to carbon-free operations; and
- Address code-required utility upgrades (including seismic upgrades) and expand capacity to ensure continued, reliable support of operations at the Sacramento campus.

To meet these objectives, the project would renovate and seismically upgrade 5,000 gross square feet within the existing CUP and construct an approximately 35,000-gross-square-foot (gsf) three-story building with a basement adjacent to the CUP to provide sufficient space for the proposed upgrades. (See Attachment 3, Location Map.) Proposed space allocations are shown in Table 1. UC Davis Health will finalize the building program during the preliminary planning phase.

Table 1: Major Space Allocations

Proposed Space Use	Approximate gsf
Chiller and Boiler Rooms	9,000
Electrical Rooms	9,000
Emergency Generator Rooms	4,000
Building Support- Utility Yard	4,000
Building Support- Equipment Rooms	4,000
Utility and Material Storage	2,000
Administration and Offices	3,000
Total	**35,000**

Increase Resiliency of Utilities

The local utility agency, Sacramento Municipal Utility District (SMUD), will provide the electrical upgrade, a dedicated electrical connection. This increased electrical connection will allow the campus to be fed from the local utility versus use of the existing cogeneration turbine. In addition, new emergency generators will supply power for critical operations in the event of a power outage with an independent backup. These improvements will increase the resiliency of utilities in an emergency event.

Working Towards Carbon-Free Operations

The project is part of an incremental plan to decarbonize the operations of the CUP. This project is the first step, to move from natural gas co-generation turbine power sources for the campus to utilizing green power via the local utility provider, SMUD. SMUD provides a utility option, Greenergy, for customers to select a utility supply from 100 percent renewable resources. With completion of the proposed project, UC Davis Health will utilize Greenergy for its primary source of power. This will allow UC Davis Health to reduce gas consumption for electrical production by 60 percent. The new emergency power generators will replace existing, less efficient generators and help the campus better meet new air quality standards.

Expand Capacity and Provide Upgrades for Planned Future Growth

The project would provide new chillers, boilers, and electrical power, to increase utility capacity and support anticipated growth. Additionally, the CUP will be renovated to operate more efficiently, implement demand-side load reductions, and provide infrastructure to allow the future installation of energy-efficient heat-recovery chillers and possible thermal energy storage tanks.

The project will also address code-required upgrades and utility requirements for the Hospital and other future projects. These upgrades include fire protection upgrades to the bracing of the fire sprinkler system. Additionally, new water and sewer storage tanks are required for CUP operations to be maintained in the event of a significant water and sewage outage. The current footprint of the CUP is not sufficient to accommodate the needed storage improvements to meet these code requirements. The proposed expansion would provide the necessary space and install the required tanks.

Sustainability

The project will support load-side reductions, allowing the CUP to run more efficiently and reducing GHG emissions and operational costs. Measures include reducing the temperatures of the hydronic utilities with no changes on the building side.

This project lays the groundwork for the campus's long-term decarbonization goals. Future plans include more significant steps toward an electrified campus and decarbonization. Planned next steps include creating a heat recovery plant, installing Thermal Energy Storage tanks, and removing and replacing gas-fired boilers with electrified air-source pumps. Funding for this work is yet to be identified, and these scopes have not been developed into projects in the UC Davis Health Capital Financial Plan.

The project will comply with the University of California Policy on Sustainable Practices. The Sustainable Practices Policy establishes goals in nine areas of sustainable practices: green building, clean energy, transportation, climate protection, sustainable operations, waste reduction and recycling, sustainable procurement, sustainable food service, and sustainable water systems. A full range of sustainability practices for building design and operations are included in the project's budgeting, programming, and design effort.

Financial Feasibility

As of June 30, 2022, UC Davis Health has an 11.56 percent modified operating EBIDA margin, 4.0x modified debt service coverage, and 98.5 days' cash on hand, which meet the requirements of the University's Debt Policy. These numbers exclude non-cash pension and retiree health benefits expenses, as allowed by the University's Debt Policy. Over a five-year projection period, the minimum operating margin is projected to be greater than or equal to zero percent

and debt service coverage is expected to be greater than or equal to 3.0x. Days' cash on hand is projected to be greater than or equal to 60 days, as required by the University's Debt Policy.

Project Funding Plan

The anticipated financial investment required for building out the CUP Expansion and financing options are actively being evaluated and assessed. The project is included in the 2022-28 UC Capital Financial Plan as the Central Utility Plant Expansion, a $200 million project to be funded from external financing and hospital reserves.

Project Delivery

It is anticipated that the CUP Expansion project will implement the progressive design-build method of delivery. Progressive design-build is one application of the design-build delivery method where the process is phased or stepped. Progressive design-build uses a qualification-based selection, followed by a process whereby the Owner then "progresses" towards a design and the guaranteed maximum price with the builder. There are several advantages to the progressive design-build delivery method. It enables planning, design, and construction personnel to work collaboratively, incorporating lean project delivery methods. This collaborative model results in efficient control over design, quality, and cost, maintaining a fair and transparent process.

Community and Regulatory Considerations

Environmental review of the CUP Expansion project will comply with the California Environmental Quality Act with anticipated completion in fall 2024.

UC Davis Health will obtain all necessary licenses and approvals per the Department of Health Care Access and Information requirements, the California Health and Safety Code, and Title 24 of the California Code of Regulations.

Small Business Enterprises (SBE) and Disable Veteran Business Enterprises (DVBE)

The campus is committed to promoting and increasing participation of Small Business Enterprises (SBEs) and Disabled Veteran Business Enterprises (DVBEs) in all purchasing and contract business, subject to any applicable obligations under State and federal law, collective bargaining agreements, and University policies. The campus regularly communicates with interested contractors and consultants to provide information about how to find opportunities to work at the campus and to encourage them to respond to the annual announcement soliciting interest to perform services. Providing qualified SBEs and DVBEs with the maximum opportunity to participate will be encouraged with the selected design professionals and contractors with the goal of meeting 25 percent participation.

Project Schedule

The construction schedule will be developed and evaluated during the preliminary planning phases as impacts to the campus are considered. The overall duration of the project through construction is estimated at 80 months. UC Davis Health plans on returning to the Regents for approval of the budget, scope, and design following action pursuant to the California Environmental Quality Act in fall 2024.

Key to Acronyms

Campus	UC Davis Medical Center, Sacramento Campus
CEQA	California Environmental Quality Act
CUP	Central Utility Plant
GHG	Greenhouse Gas Emissions
gsf	Gross Square Feet
LRDP	Long Range Development Plan
SMUD	Sacramento Municipal Utility District

ATTACHMENTS

Attachment 1:	Preliminary Plans Budget
Attachment 2:	Site Map
Attachment 3:	Project Location
Attachment 4:	Alternatives Considered

ATTACHMENT 1

CENTRAL UTILITY PLANT EXPANSION, UC DAVIS HEALTH CAMPUS
PRELIMINARY PLANS BUDGET

CATEGORY	AMOUNT	PERCENTAGE
A&E Fees[1]	$12,462,000	83.0%
Campus Administration[2]	$260,000	2.0%
Surveys, Test, and Plans[3]	$1,583,000	11.0%
Special Items[4]	$695,000	4.0%
TOTAL PRELIMINARY PLANS BUDGET	**$15,000,000**	**100%**

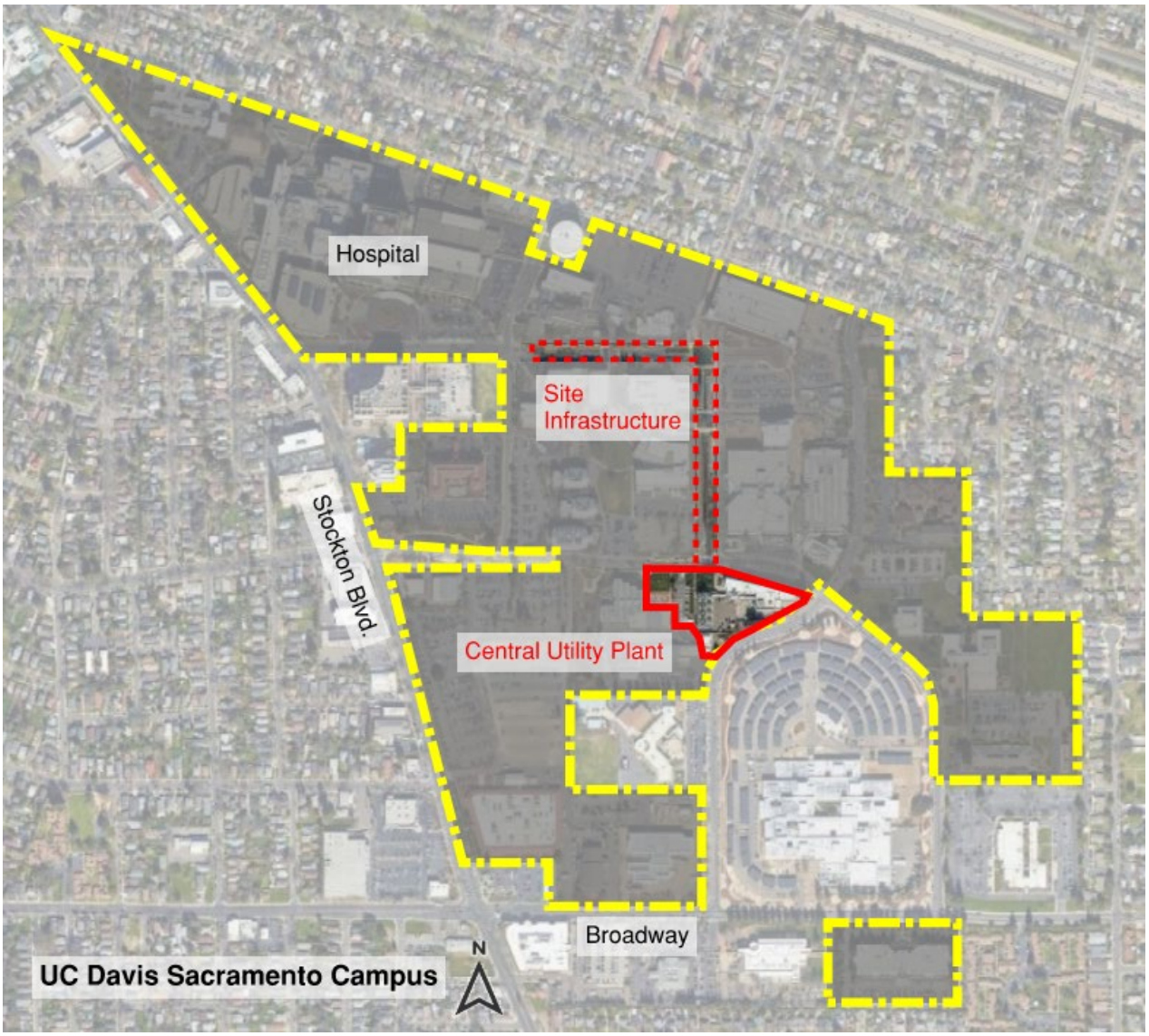
Notes:
(1) A&E Fees include Architect and design professional consultants, and external project/construction management.
(2) Campus Administration includes project management, planning, engineering, and design review through design development.
(3) Surveys, Tests, and Plans include geotechnical soil borings, site surveying, and other design-phase testing as necessary.
(4) Special Items include programming, CEQA documentation, peer reviews, specialty consultants, and agency fees.

Anticipated preliminary plans phase activities include the following:

- The Campus will select a progressive design-build team consisting of a general contractor paired with an architectural design firm, including engineering design consultants.
- The selected team will provide program validation, site master planning, and will complete schematic design and design development documents.
- The team will also provide pre-construction services such as cost estimating, scheduling, constructability, and risk analysis.
- Extensive reviews will be required, including peer reviews and collaborative design-phase reviews by the Department of Health Care Access and Information and the Office of the State Fire Marshal.

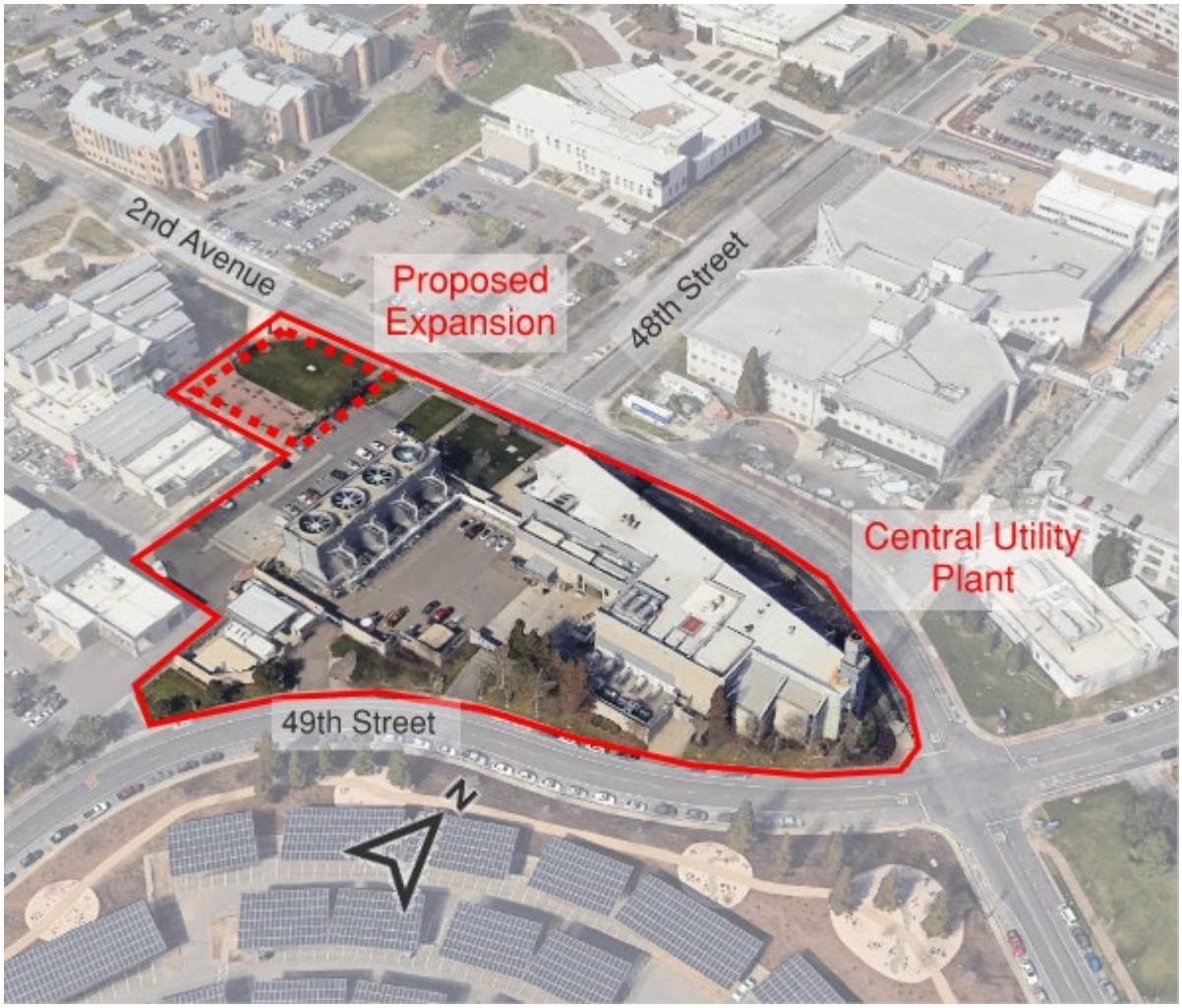
ATTACHMENT 2

SITE MAP



ATTACHMENT 3

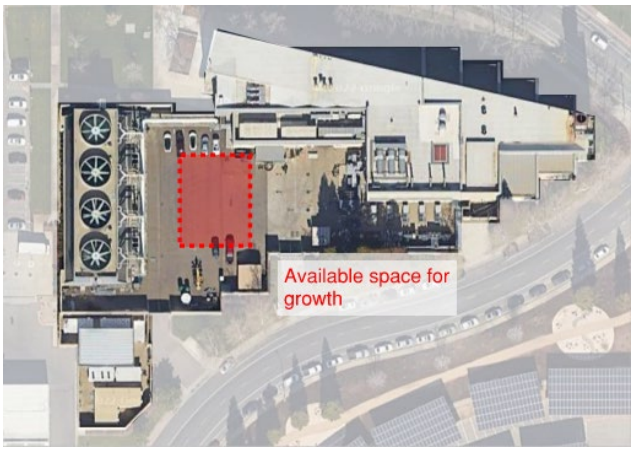
PROJECT LOCATION



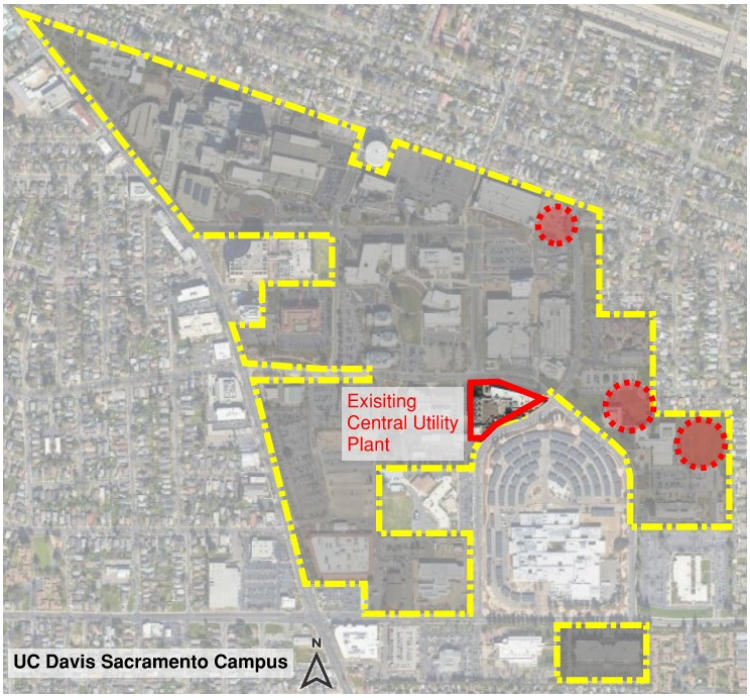
ATTACHMENT 4

ALTERNATIVES CONSIDERED

Other alternatives considered but deemed less favorable included upgrades within the existing plant. In this scenario, new chillers and emergency generators would have to be located in the existing utility yard, limiting access to the yard and hindering future growth.



Another alternative that was studied was the development of a satellite utility plant. This option would have fewer growth possibilities due to limited available land. The de-centralization of plant operations would lead to higher operational costs. Alternate sites were studied but would require duplication of both site infrastructure and operational support spaces.



The preferred option, expanding the existing CUP, would provide an efficient space for ongoing operations and additional opportunities for future growth.