



1111 Franklin Street
Oakland, CA 94607-5200
Phone: (510) 987-9074
Fax: (510) 987-9086
<http://www.ucop.edu>

November 14, 2008

**ACTION UNDER PRESIDENT'S AUTHORITY- AMENDMENT OF THE BUDGET
FOR CAPITAL IMPROVEMENTS AND THE CAPITAL IMPROVEMENT PROGRAM
AND APPROVAL OF EXTERNAL FINANCING, NORTH HALL DATA CENTER,
SANTA BARBARA CAMPUS**

It is recommended that:

Pursuant to Standing Order 100.4(q)

- (1) The President amend the 2008-09 Budget for Capital Improvements and the Capital Improvement Program to include the following project:

Santa Barbara: North Hall Data Center – preliminary planning, working drawings, and construction – \$6,310,000 to be funded from external financing (\$5,310,000) and campus funding (\$1,000,000).

Pursuant to Standing Order 100.4(nn)

- (2) The President be authorized to approve financing not to exceed \$5,310,000 to finance the North Hall Data Center, subject to the following conditions:
 - a. Interest only, based on the amount financed down, shall be paid on the outstanding balance during the construction period;
 - b. Financing documentation shall require that as long as the debt is outstanding, the Santa Barbara campus' share of the University Opportunity Fund shall be maintained in amounts sufficient to pay the debt service and to meet the related requirements of the authorized financing; and
 - c. The general credit of The Regents shall not be pledged.
- (3) The Officers of The Regents be authorized to execute all documents necessary in connection with the above.

A Key to abbreviations and the project description are attached.

KEY
Capital Improvement Program Abbreviations

S	Studies
P	Preliminary Plans
W	Working Drawings
C	Construction
E	Equipment
-	State Funds (no abbreviation)
F	Federal Funds
G	Gifts
HR	Hospital Reserve Funds
I	California Institutes for Science and Innovation
LB	Bank Loans or Bonds (External Financing includes Garamendi, Bonds, Standby, Interim and Bank Loans)
LR	Regents' Loans (Internal Loans)
N	Reserves other than University Registration Fee (Housing and Parking Reserves)
R	University Registration Fee Reserves
U	Regents' Appropriations (President's Funds, Educational Fund)
X	Campus Funds
CCCI	California Construction Cost Index
EPI	Equipment Price Index

Budget for Capital Improvements
and Capital Improvement Program
Scheduled for Regents' Allocation, Loans, Income Reserves,
University Registration Fee Reserves, Gift Funds, and Miscellaneous Funds

Campus and Project Title (Total Cost)	Proposed <u>2008-09</u>		
<u>Santa Barbara</u>			
North Hall Data Center	P	\$185,000	X
	W	\$485,000	X
	C	\$330,000	X
	C	\$5,310,000	LB
(\$6,310,000)			

DESCRIPTION

The campus proposes to renovate the North Hall Data Center (Data Center), which currently houses business computing operations, and convert it into a high-performance computing center to house high-density computing equipment and operations. The total project cost of \$6,310,000 would be funded from campus funds (\$1,000,000) and external financing (\$5,310,000).

Background

Over the past decade, research computing technology has advanced in the area of high-density computing, and the affordability of equipment that utilize this technology have substantially increased. Known as “clusters,” these advanced, high-density information systems are used in the instructional and research programs across academic disciplines, including engineering, sciences and social sciences. The resources required for this technology are significant and costly because clusters: 1) require dedicated space, 2) produce high electrical loads, 3) need dependable environmental controls, 4) require systems redundancy, and 5) need a greater level of security.

The lack of available, dedicated high-performance computing facilities has been detrimental to the pursuit of important and valuable research grants. The longer the campus is without a topnotch computing facility, the greater the risk of losing faculty as well as research that requires these powerful computing tools. Existing facilities lack the space and environmental requirements needed to house clusters. In recent years, faculty have acquired clusters and endeavored to install them in existing facilities, leading to serious problems with existing networks and building operations infrastructure. If the number of clusters continues to increase unabated, the proliferation of these powerful machines would create physical and economic impacts for the campus.

Project Description

The proposed North Hall Data Center project would renovate 4,500 asf (5,500 gsf), creating an integrated, high-performance computing (HPC) facility to house high-density clusters and related computing equipment. The Data Center would support academic, research, and the existing business computing program. The Data Center would be designed to achieve the performance criteria of a “Tier 2+” HPC facility which provides for power and cooling redundancy that enables concurrent maintenance and for unplanned outages without abatement of operations.

The project would utilize, supplement, and expand existing infrastructure in North Hall, making it scalable and robust for future growth. The project would provide: 1) necessary systems redundancy, 2) direct digital controls and monitoring of environmental systems, 3) appropriate security for monitoring and controlling access to the Data Center, 4) fire protection systems comprised of gas suppression and sprinklers, and 5) ample space to house current and future growth of high-density computing equipment and clusters. Improvements also include interior space plans that create architectural barriers for both environmental and security measures, which may include modifications to points of entry, service, exiting and exterior window systems. An exterior enclosure is included for the new emergency generator and chiller as well as scalable mechanical, electrical, and ventilation systems upgrades to provide efficient, continuous cooling and airflow dynamics for year-round, 24-hour operations. The project also includes new energy-efficient lighting systems, raised-floors, and a water detection sensor and alarm system.

In order to maintain campus-wide computing continuity (via the campus backbone hub located in the existing North Hall data center), the project would be constructed in two phases. Construction is scheduled to commence for Phase 1 in October 2009, and Phase 2 would begin in June 2010. Project completion is anticipated November 2010.

Policy on Sustainable Practices


This project will comply with the *University of California Policy on Sustainable Practices*. As required by this policy, the project will adopt the principles of energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

Financial Feasibility


The total project cost of \$6,310,000 would be funded from external financing (\$5,310,000) and campus funds (\$1,000,000). The estimated annual debt service at 5.75 percent for ten years is \$713,000. Repayment for the North Hall Data Center debt would be from Opportunity Funds that represent a portion of the indirect cost recovery generated by federal contracts and grants.

The University Opportunity Fund Debt Repayment Policy requires that campuses meet two financial tests: 1) that the amount of projected maximum annual debt payments payable from the campus' Opportunity Funds shall not exceed 65 percent of the campus's total Opportunity Funds

Approved by:



Mark G. Yudof
President of the University



Date

Attachments

ATTACHMENT 1

**PROJECT STATISTICS
NORTH HALL DATA CENTER
CAPITAL IMPROVEMENT BUDGET
SANTA BARBARA CAMPUS
CCCI 5519**

<u>Cost Category</u>	<u>Amount</u>	<u>% of Total</u>
Site Clearance	\$100,000	2%
Building	\$4,200,000	67%
Exterior Utilities	\$350,000	6%
Site Development	0	0%
A/E Fees	\$450,000	7%
Campus Administration ^(a)	\$395,000	6%
Surveys, Tests	\$140,000	2%
Special Items ^(b)	\$275,000	4%
Contingency	<u>\$400,000</u>	<u>6%</u>
<u>Total</u>	<u>\$6,310,000</u>	<u>100%</u>
Group 2 & 3 Equipment		
Total Project	\$6,310,000	

Statistics

Gross Square Feet (gsf)	5,500
Assignable Square Feet (asf)	4,500
Ratio asf/gsf	82%
Building Cost/gsf ^(c)	\$764

(a) Campus administration includes project management and inspection.

(b) Special items include interest during construction totaling \$235,000 and peer review of \$40,000.

(c) High building cost per gsf is due to intensive and expensive mechanical and electrical equipment and systems work, required systems redundancy, and the need to maintain operations during construction.

ATTACHMENT 2

SUMMARY OF FINANCIAL FEASIBILITY ANALYSIS

Project Title: North Hall Data Center

Total Estimated Project Cost:	\$	6,310,000
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Project Source of Financing:

Campus Funds	\$	1,000,000
External Financing	\$	<u>5,310,000</u>
Total	\$	6,310,000

Project Financing Terms:

Interest Rate:	5.75%
Duration in Years:	10

Estimated Average Debt Service:	\$	713,000
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Proposed Source of Revenue (Pledged):

Opportunity Fund	\$	713,000
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Santa Barbara Opportunity Fund Information (FY 2012-13 *):

Estimated Annual Revenue		
Garamendi Off-the-Top	\$	3,720,000
Opportunity Fund Annual Allocation	\$	<u>7,659,000</u>
Total Revenue Base	\$	11,379,000

Estimated Average Annual Debt Service:

Proposed Project:	\$	713,000
Other Project Yet to be Approved	\$	280,000
Other Approved Projects	\$	<u>6,045,000</u>
Total	\$	7,038,000

% Pledged for Debt		62%
Debt Service Coverage	1.62X	

* First full year of interest and principal payments on the project.