



OFFICE OF THE PRESIDENT

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December 19, 2005

**CHAIRMAN OF THE BOARD  
CHAIRMAN OF THE COMMITTEE ON GROUNDS AND BUILDINGS  
PRESIDENT OF THE UNIVERSITY**

**ACTION BY CONCURRENCE--AMENDMENT OF THE BUDGET FOR CAPITAL  
IMPROVEMENTS AND THE CAPITAL IMPROVEMENT PROGRAM AND APPROVAL  
OF EXTERNAL FINANCING FOR MISSION BAY UTILITIES AND DISTRIBUTION  
PHASE 1, SAN FRANCISCO CAMPUS**

It is recommended that:

**Pursuant to Standing Order 100.4(q)**

- (1) The President, subject to the concurrence of the Chairman of the Board and the Chairman of the Committee on Grounds and Buildings, authorize that the 2005-06 Budget for Capital Improvements and the Capital Improvement Program be amended to include the following project:

San Francisco:	<u>Mission Bay Utilities and Distribution Phase 1</u> - preliminary plans, working drawings, construction, and equipment - \$16,400,000, to be funded from external financing (\$10,000,000) and campus funds (\$6,400,000).
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- (2) The President approve and authorize external financing not to exceed \$10,000,000 to finance the project listed in (1) above, subject to the following conditions:
  - a. Interest only, based on the amount drawn down, shall be paid on the outstanding balance during the construction period;
  - b. Repayment of any financing shall be from the San Francisco campus share of Federal Indirect Cost Recovery deposited to Fund 19933, which shall be in amounts sufficient to pay debt service and to meet the related financing requirements; and

- c. The general credit of The Regents shall not be pledged.
- (3) The Officers of The Regents provide certification that interest paid by The Regents is excluded from gross income for purposes of federal income taxation under existing law.
- (4) 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

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



Budget for Capital Improvements and  
Capital Improvement Program  
Scheduled for  
Regent's Allocations, Loans, Income Reserves,  
University Registration Fee Reserves, Gift Funds, and Miscellaneous Funds

Campus and Project Title (Total Cost)	Proposed 2005-06		
<u>San Francisco</u>			
Mission Bay Utilities and Distribution			
Phase 1	P	\$800,000	X
	W	\$800,000	LB
	C	\$9,200,000	LB
	C	\$5,600,000	X
(\$16,400,000)			

**DESCRIPTION**

The proposed project of \$16,400,000 to be funded from external financing (\$10,000,000) and campus funds (\$6,400,000) would be located on Block 16 at the new UCSF Mission Bay site. This project is the first phase of a large Utility Plant that is comprised of outdoor-rated boilers and chillers mounted on a concrete pad and would provide high-temperature hot water, chilled water, and processed steam that would be piped through a new utility distribution system connecting to three future research laboratory buildings on Blocks 17 A/B, 17C, and 19A.

***Background***

In 1997, the 43-acre UCSF campus site at Mission Bay was donated and transferred to The Regents to create a new campus site for academic research and instruction. Three biomedical research buildings, a new campus community center, student housing, and two parking structures have recently been built or are currently under construction. Three more biomedical research buildings are being proposed for development at Mission Bay. Development of new buildings at Mission Bay would ultimately serve to accommodate new as well as expanding research programs. The UCSF Mission Bay campus would, over the next two decades, ultimately provide 2.65 million gross square feet of development plus parking. Initial campus development did not justify construction of a Central Utility Plant; therefore, each new building was designed with its own boilers and chillers operated and monitored by engineers on a 24/7 basis.

As a long-range intention, UCSF now plans to construct a new Central Utilities Plant at Mission Bay to support current, proposed, and future development. The future new plant would allow UCSF to produce 12-kv electrical power that would increase fuel use efficiency, provide a stable source of emergency and back-up power, reduce energy costs, and minimize environmental pollution. The proposed centralized utility plant would be constructed in three phases: (1) construction of a first phase, small Utility Plant with boilers and chillers and distribution piping to three new research buildings currently in various stages of

planning. This project also proposes connecting the first phase Utility Plant with Building 19B (Arthur and Toni Rembe Rock Hall) to obtain process steam. Since the Utility Plant would not contain steam boilers, 24-hour boiler watch would not be required, providing significant savings in labor cost and a lower-cost solution.; (2) completion of a utility distribution loop to all major buildings; and finally (3) construction of the larger permanent Central Utility Plant, incorporating the first and second phase distribution systems.

### ***Problem Analysis***

Labor costs of operating stand-alone boilers, chillers, and attendant mechanical systems in buildings now opened at Mission Bay plus the cost of purchased utilities, since the State utility crisis, have proven to be much higher than planned. As a result, UCSF decided to plan a more centralized utility delivery system so that energy and operating costs, as well as new building construction costs, could be reduced significantly.

With a Central Utility Plant, the need for mechanical space in individual buildings would be reduced. However, since three of the proposed research laboratory buildings are planned for completion prior to construction of a new permanent Central Utility Plant, some measures are required to provide utility support to these buildings before they can be connected to the central plant. This project will supply the necessary utility and related infrastructure support.

### ***Alternatives / Cost Benefit Analysis***

Three alternative infrastructure schemes were developed and evaluated to support the three proposed research laboratory buildings before this Utility Plant option was selected:

#### Alternative 1:

Construction of temporary steam and chilled water plants outside of each new research building.

- Capital Cost: \$3.1 million, Labor cost (24-hour boiler watch) and Equipment Rental Cost for 6 years: \$31 million for a **Total Cost of \$34 million.**

This option would provide additional square footage for program use, but would be the most expensive to build and operate.

#### Alternative 2:

Construction of permanent stand-alone steam and chilled water plants inside each of the three new research buildings.

- Capital Cost: \$15.9 million, Labor Cost (24-hour boiler watch) for 6 years: \$11.7 million for a **Total Cost of \$27.6 million**

This option would use square footage in each building at the expense of program space but at a mid-range cost to build and operate.

#### Alternative 3:

Construction of a first phase Utility Plant with distribution to three new research laboratory buildings.



- **Capital Cost: Total Cost of \$16.4 million**, no additional 24-hour boiler watch beyond what already exists in nearby Rock Hall.

This option would provide additional square footage for program use in the new research buildings and would also be the least expensive to build and operate. The permanent underground utility distribution infrastructure constructed as part of this option would be re-used to support the future large Central Utility Plant. This is the preferred option.

### ***Project Description***

This project represents the first phase of the proposed centralized utility system and would consist of constructing the first phase of what will be a large Central Utility Plant and the underground utility distribution pipe system originating from the plant and connecting to three new research laboratory buildings currently in various stages of planning. The new first phase Utility Plant would produce high-temperature hot water, chilled water, and process steam to support these three research buildings. The new first phase plant would consist of outdoor-rated high-temperature hot water boilers and chillers piped together and mounted on an outdoor concrete pad that would be sited on Block 16 in the north central portion of the Mission Bay campus. The plant would also be connected to nearby Building 19B (Arthur and Toni Rembe Rock Hall) where an existing Utility Plant produces steam used for heat processing needs for the Rock Hall building. Conversion of the medium-pressure steam-based heating system in Rock Hall to the pressurized hot water source in the first phase plant is expected to free enough excess medium-pressure steam capacity to meet the needs for process steam of the three new research buildings. Site work would require grading, paving, and fencing as well as water, natural gas, electricity, storm drain, and sanitary sewer connections. The project would also include installation of an underground distribution pipe system originating at the Utility Plant and connecting to future research buildings located on blocks 17A/B, 17C and 19A.

The new boilers and chillers installed in the first phase plant represent approximately 30% of the total cost of the Phase 1 project. This equipment will be rendered obsolete after the Phase 3 permanent Central Utility Plant is completed. The underground utility distribution infrastructure also installed in Phase 1 represents the remaining 70% of the total cost of the Phase 1 project and would continue to be used after the Phase 3 Central Utility Plant is completed.

### ***CEQA Classification***

The 1996 LRDP Environmental Impact Report (EIR) and 2001 SEIR provided the environmental analysis for the Mission Bay site. This project is consistent with the LRDP. Further project-specific environmental analysis will be included in an Addendum to the LRDP EIR in conjunction with project design approval.

### ***Financial Feasibility***

The total project cost of \$16,400,000 including \$240,000 of interest incurred during construction, will be funded from \$6,400,000 of campus funds and \$10,000,000 of external financing.

Assuming financing of \$10,000,000 for 30 years at the rate of 6.125%, the average annual debt service for the project would be \$736,000 (P&I), which would be repaid from the campus share of the

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Federal Indirect Cost Recovery deposited to campus University General Funds. With an allocation of \$17,600,000 in FY 2004-05, the project is well above the debt coverage ratio test of 3 times.

The proposed financing terms for Federal Indirect Cost Recovery of Fund 19933 have been 15 year bonds. A waiver to this practice has been requested by the campus and granted by the Office of the President, the proposed term of financing for this project, based on useful life, would be 30 years.

Additional financial information is shown in Attachment 2.

Approved:



Gerald L. Parsky  
Chairman of the Board

Judith L. Hopkinson  
Chairman of the Committee on Grounds and Buildings

Robert C. Dynes  
President of the University

Attachments



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SAN FRANCISCO MISSION BAY  
UTILITIES AND DISTRIBUTION PHASE I

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Chairman of the Board



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Judith L. Hopkinson  
Chairman of the Committee on Grounds and Buildings

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ATTACHMENT 1

**PROJECT STATISTICS**  
**MISSION BAY UTILITIES AND DISTRIBUTION PHASE 1**  
**CAPITAL IMPROVEMENT BUDGET**  
**SAN FRANCISCO CAMPUS**  
**CCCI 4850**

<u>Cost Category</u>	<u>Amount</u>	<u>% of Total</u>
Site Clearance	\$	
Construction	\$ 13,200,000	80.5 %
Exterior Utilities	\$	
Site Development	\$	
A/E Fees <sup>(a)</sup>	\$ 1,000,000	6.1%
Campus Administration <sup>(b)</sup>	\$ 700,000	4.3%
Surveys, Tests	\$ 250,000	1.5%
Special Items <sup>(c)</sup>	\$ 530,000	3.2%
Contingency	\$ 720,000	4.4%
<b><u>Total</u></b>	<b>\$ 16,400,000</b>	<b>100.0%</b>
Group 2 & 3 Equipment	\$	
<b><u>Total Project</u></b>	<b>\$ 16,400,000</b>	

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Statistics are not included due to the nature of this project.

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- (a) A/E fees include consulting engineer and architect services including "additional" basic services and reimbursables.  
(b) Campus administration includes project management.  
(c) Special items include EH&S services, value engineering, constructability review, plan review/agency review, existing condition survey/site survey, and capitalized interest.

**Project Title:** Mission Bay Utility and Distribution Phase 1

### **Proposed Sources of Funding:**

Campus Funds	\$ 6,400,000
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Total Project Costs	\$ 16,400,000
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Interest Rate: 6.125%      Duration: 30 years

Federal Indirect Cost Recovery	\$ 17,600,000
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Campus Allocation of Fund 19933 (Actual 2004-05)

Existing Annual Debt Service (Fund 19933)	\$ 867,000
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Projected Annual Debt Service (Proposed Project)	\$ 736,000
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Total Projected Annual Debt Service	\$ 1,603,000
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Debt Service Coverage Ratio	11.0x
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