

2006-2007

Budget for State Capital Improvements



UNIVERSITY OF CALIFORNIA
Office of the President
November 2005

OVERVIEW

UNIVERSITY OF CALIFORNIA STATE CAPITAL IMPROVEMENT PROGRAM

The University of California is designated under the California Master Plan for Higher Education as the State's graduate education and research institution with related responsibilities for public service. It is to serve students from the top 12.5 percent of graduating California high school seniors. This three-fold mission of education, research, and public service determines the character of the institution and the education it provides for both undergraduate and graduate students. The students who receive degrees from the University are prepared to take leadership positions in science, industry, and our community. The University's research is not only an integral part of this educational process but also a vital support to the continued strength of California's economy.

Successfully meeting these responsibilities to students and the State requires that the University maintain its programs at the forefront of knowledge. Periods of rapid enrollment growth have always presented a challenge, but the issues currently facing the University are particularly difficult. University budgeted enrollment is expected to grow approximately 45 percent in the period starting in 1998-99 through 2010-11. The speed with which programs must be expanded, the number of new faculty at the top of their fields who must be hired, and the number of new buildings and related facility and infrastructure improvements to be constructed is daunting.

The challenge has been largely met during the first part of this growth period, although with significant strain, because of the dedicated efforts of the campuses and the support of the State. The California economy deteriorated significantly in 2000, diminishing State finances and private funding resources available to the University. At the national level, federal research funding is under pressure from the problems of Iraq and a widening deficit, now compounded by the need to address hurricane damage to the Gulf Coast. The University has benefited by a compact with the Governor that provided a basic level of support during this period of fiscal constraint, including funding for inflation and enrollment growth consistent with the Master Plan and \$345 million per year for capital needs.

During this period, the voters, State administration, and legislature so far have continued to approve bond measures essential in funding the facilities necessary to accommodate this great expansion of enrollment and new programs. State capital funding—supplemented by University funds and private donors—has supported the most critical facility needs. Constraints on State and federal funds for instruction and research, however, require that the University allocate its own resources primarily to operation of academic programs, leaving little for capital needs.

This reduction is made much more serious by recent changes in the construction market that have resulted in an extraordinary increase in building cost. This was dramatically highlighted when the price of structural steel increased in 2004, due in part to over-heated development of the economy of China and resumption of demand in the US. While steel prices have reduced somewhat in recent months, cement and a number of other construction materials have continued to increase, although at a more moderate rate than earlier. There is great concern, however, that the reconstruction effort required on the Gulf Coast may trigger a new round of increases in materials and labor costs. Contractor bid prices continue to be a substantial problem, reflecting a volume of construction work that has taxed the capacity of the construction industry and allowed bidders to increase prices far above what past experience would predict.

The inflationary problem is compounded by a major increase in the volume of construction in California. There has been a surge in hospital construction because of the State mandate to correct structural life-safety deficiencies by the end of 2007. Public construction in general is strong, and private construction has increased significantly as corporate revenues have revived. This increase in project volume has fully engaged the state's construction industry, resulting in fewer bidders and less competition for University construction contracts, much higher bid proposals, and great volatility in those bids. Contract bids started to exceed budgets in late 2003, and the University is continuing to experience extraordinary overages on particular contracts. The problem is not simply that bids are higher but that they do not correlate to basic materials and labor prices and are thus highly unpredictable.

In response, the University has dramatically increased its emphasis on management of cost and cost risk and the importance of improving the way projects are implemented. Limited State and University resources do not allow us to continue to address projects as in the past. We cannot pay

current higher bid costs without substantially reducing the number of projects completed and thus seriously harming our ability to support projected enrollment growth and essential seismic correction and renewal needs.

The greatest opportunities to control cost occur at the beginning of the design process. During initial project planning, decisions concerning detailed aspects of program and their implications for the facility can optimize what can be achieved within available funds. When design begins, an emphasis on simplicity in the physical design solution can reduce cost and, most important, increase flexibility to manage cost risk. At that time, additional program or physical design elements can be identified and managed as options to be implemented at bid if the necessary funds are available. The quality of a design and the support it provides for a positive campus environment usually are not dependent on complex design features. Long-term flexibility in occupant use, and control of operation and maintenance cost (particularly energy efficiency) must remain a high priority.

For projects already in the final steps of design, it is more difficult to achieve significant cost-saving modifications, but every effort is being made to that end, including addressing contract terms and bid processes in ways that improve contractor response to University projects. At bid, if submitted proposals substantially exceed budgeted funds, additional measures are investigated to further simplify the building and its scope for re-bid. The funds available to the University from State bond measure and campus resources limit the ability to augment project budgets under any but the most critical conditions, and such augmentation relies on demonstration that all measures have been taken from the beginning to reduce costs.

Enrollment

The current cycle of student enrollment growth at the University of California began in the late 1990s, the start of a period that the California Postsecondary Education Commission (CPEC) refers to as “Tidal Wave II,” driven significantly by the children of the post-WW II “Baby Boom.” In 1997-98, the University’s campuses enrolled 145,534 full-time equivalent (FTE) students. UC’s 1999 enrollment plan, based on DOF demographic and student projections data, forecast a general campus enrollment in 2010-11 of 216,500 budgeted FTE students, a cumulative increase of about 49 percent. In fact, the University has experienced far more rapid enrollment growth than the 1999 plan envisioned, averaging closer to 8,000 FTE per year rather

than the projected 5,000 FTE growth. However, the compact with the Governor calls for the University to return to the earlier target for average annual enrollment growth, and it is expected that student enrollment in 2010-11 will be at the level envisioned in the 1999 plan.

Capital Need and Funding Availability

As has been true of past enrollment growth cycles, the expansion of facilities has lagged significantly behind the rapid increase in student population. The current University Space Analysis reports that five University growth campuses have on average 20 percent less space in 2004-2005 than allowed by CPEC space guidelines for their level of enrollment. Moreover, the analysis fully discounts space allowances in accordance with the University's commitment to raise summer term enrollments to a level equivalent to 40 percent of the average fall/winter/spring term. Campus facilities are crowded, the recruitment of essential new faculty is constrained, and important actions to expand and innovate curricula are hindered.

The total capital need for State-supportable functions—including academic programs, academic support, student services and administration, and campus operational support—is estimated at more than \$700 million per year through this growth period. Of the total annual need, over \$400 million is for development of new facilities and expansion of campus infrastructure to accommodate enrollment growth. These figures include the cost of completing development of the first phase of the new Merced campus (for an enrollment of 5,000 FTE students by 2010-11). More than \$300 million is related to the renewal and modernization of existing facilities and correction of seismic hazards. In addition, the University has significant deferred maintenance problems because of funding shortfalls.

Legislation passed in the 2001-02 fiscal year authorized submittal of two new general obligation bond measures to the voters, one in 2002 and the second in 2004. The first was approved by the voters in November 2002 and provided \$1.65 billion for California's public institutions of higher education to fund capital appropriations in the 2002-03 and 2003-04 fiscal years. The University of California received \$90 million from this bond measure in 2002-03, with additional funding provided from lease revenue bond sources, and approximately \$311.7 million in 2003-04. The second bond measure was approved by the voters on the March 2004 ballot and provided the University with \$345 million per year for the 2004-05 and 2005-06 budget years. State costs for bond administration and issuance, currently estimated at two

percent, are deducted from these amounts. To support capital appropriations in 2006-07 and subsequent years, a new source of financing will have to be authorized, either a new general obligation bond requiring voter approval in 2006 or lease revenue bonds approved by the State. The compact provides for continued State capital support for the University at a level of \$345 million per year.

It is critical that this additional funding be provided if the University is to address current and projected space deficiencies, make essential seismic life safety corrections, and renew aging and obsolete facilities. Without those funds, campuses will not have the space to support the hiring of new faculty and the expansion of programs necessary to provide a high-quality education to increasing numbers of California students.

Even with annual State funding of \$345 million, there is a financial shortfall of over \$350 million per year. The University remains committed to making every effort to pursue gift and other potential fund sources to supplement State resources for construction; but, as noted above, reductions in State funds for operations severely limit the ability of the University to divert other resources to capital improvement at the level possible in past years. This loss is particularly difficult in the present situation when project budgets set in more stable years are being overtaken by extraordinary increases in construction market costs.

During the growth period of the 1980s, the University also experienced a significant shortfall of capital funds, and the availability of core academic facilities did not keep up with the pace of enrollment growth. This lag has been repeated in the current growth cycle. The period required for design and construction of major new academic buildings is between four and five years, and many projects funded for the start of design in 2006-07 will not be ready for occupancy until perhaps 2010-11.

As noted above, the current problem is particularly acute at the University's heavily impacted growth campuses—Davis, Irvine, Riverside, San Diego, and Santa Cruz—which are already operating at a significant space deficiency. It is essential that the State help the University minimize the shortfall of space and provide continued funding until the remaining deficiencies are corrected. Individual campuses and their faculty can cope with short-term problems if there is confidence that the necessary facilities will be provided within a reasonable period. If adequate funding is not provided, the University's ability to retain or hire faculty, support increased enrollment, and maintain

program quality will be seriously harmed. The financial challenge faced by the State and University at this time is critical.

Capacity for Enrollment Growth

In 1999, the potential enrollment capacity of the existing nine campuses, as defined by their Long Range Development Plans, and of UC Merced was approximately 24,000 FTE less than the enrollment forecast for 2010-11.

All campuses have been actively pursuing programmatic and physical options for accommodating the increase in students. The last three campuses are completing the lengthy process of amending their LRDPs, addressing applicable environmental concerns, and engaging in the necessary public review. Summer term enrollments are rapidly expanding to make more efficient use of existing facilities. Establishment of new off-campus centers is under active consideration by Santa Cruz and other campuses, as is the expansion of off-campus study programs in general. The new campus at Merced opened in October 2005 and is scheduled to reach an enrollment level of 5,000 FTE students in 2010-11.

Maintenance of the quality of University of California academic programs and the education received by the students is critical if the University is to serve the State effectively in its designated mission of education, research, and public service. Modern facilities are an essential part of this effort. This is most clearly seen for science and engineering programs, heavily targeted by students in this surge of enrollment growth. Beginning in 1998-99, the University initiated an eight-year plan to expand enrollment in engineering and computer and information sciences by 50 percent, an increase of about 8,000 students by 2005-06. This plan was so successful that the University met its goal in 2001-02, four years ahead of schedule. Nevertheless, industry demand for these students continues to expand, and the University is continuing to increase enrollments in these economically important disciplines. Science and engineering programs present special demands on facilities because of their dependence on highly sophisticated laboratories and technologies to support the most advanced level of teaching and research.

The most effective learning at institutions of the level of the University of California, for undergraduates as well as graduates, occurs in participatory research settings rather than traditional formal classes. The scholars and researchers who are most effective with students—the first-rank faculty essential to producing the graduates and discoveries that drive the California

economy—will not come to the University of California unless facilities are available to allow them to be successful in their teaching and research efforts. Such facilities include state-of-the-art laboratories for teaching and research and modern computation, information, and communication resources and technologies.

However, the campus must have a balanced array of facilities and services to function effectively and meet education, research, and public service goals. A shortfall in one category reduces the functional success of the campus as a whole. These facilities include not only core academic buildings but also libraries and instructional/research support facilities, student services, housing and auxiliary enterprises, health science centers, utility plants and infrastructure, and off-campus centers for educational outreach, research, and public service.

Renewal and Modernization of Existing Facilities

Unfortunately, the need to expand facilities to support enrollment growth is only one of several categories of issues that must be urgently addressed and balanced in the capital program.

The condition of the University's existing physical plant is in itself a serious problem, resulting from the wear and decline associated with age and intensive use. The importance of facility renewal is obvious at a campus as old as Berkeley or Los Angeles, but even the newer campuses, other than Merced, are nearly four decades old and experiencing most of the same problems. Funding cuts that reduced essential maintenance and repair have magnified the problem. The University's backlog of deferred maintenance grew dramatically during periods of budget reductions in the past three decades, and remains distressingly large. Deficiencies in existing facilities remain a major constraint to academic program quality and innovation. State actions to increase permanent maintenance funding have faltered because of fiscal constraints, and the University's efforts to finance deferred maintenance with its own bonds addressed only a fraction of the problem. Continuing State support for the deferred maintenance program and capital renewal is necessary to preserve the usefulness of the University's physical assets.

Another category of need is that of change and obsolescence. As science, industry, and commerce constantly change in response to new knowledge and opportunities, so also must the academic programs that are responsible for

preparing students and conducting the research that advances knowledge and creates economic opportunity. Instruction and research objectives evolve and change direction, as do the methods and equipment used. Academic programs must be at the frontiers of knowledge, developing and using innovative processes and technologies that support discovery, expand knowledge, and give competitive advantage to California. Unless academic facilities are renovated and updated to meet continually evolving program needs, they become constraints on the capability of the programs and ultimately limit the abilities of the graduates entering the California workforce.

This continued evolution is particularly evident in science and engineering fields. In many cases, boundaries are dissolving between science and engineering disciplines, and in other academic disciplines as well. This is demonstrated by the extraordinary expansion of “bioengineering” where research and education in a single laboratory (for example, development of diagnostic or medicine delivery devices using nanoscale technologies) may involve biology, chemistry, materials science, structures, fluid dynamics, informatics/computer science, imaging technologies, and other once-separate fields of expertise. The proliferation of interdisciplinary programs is remarkable.

The convergence of previously diverse fields is strongly influenced by great advances in laboratory technologies now used across a multitude of disciplines. These often involve sophisticated instrumentation and analysis at a cellular or molecular level that demand equipment and controlled environments once common only in high-level physics and health science research. Many laboratories once satisfactory for engineering—or entomology, botany, agriculture, etc.—are now completely obsolete for work at the forefront of those disciplines.

Such functional obsolescence is exacerbated by the fact that many of the University’s older buildings were designed to meet building, fire, life safety, and accessibility codes written 40 or more years ago. Not only have regulatory and public expectations of appropriate design and essential safety changed; but, as noted above, the activities housed in the buildings (particularly science and engineering laboratory functions) also have become much more complex and demanding. Dramatic changes in laboratory methods and technologies, and particularly the great increase in chemical use, present safety concerns significantly greater than those in the past.

The University's capital program is seriously impacted by issues of life safety, particularly the critical need to ensure the safety of students, faculty, and staff in an earthquake. Devastating earthquakes in California and abroad have amply demonstrated the hazards inherent in buildings designed under earlier structural codes and practices, and the University has pursued an aggressive program of seismic corrections for many years. The Regents have given a high priority to completing the University's program of seismic and other life safety corrections as rapidly as possible.

The Northridge Earthquake of 1994 and the subsequent Kobe earthquake provided substantial new understanding of earthquake forces and building performance and initiated significant changes in structural design codes and practices in 1997. Prior to that date, approximately half of the University's buildings rated seismically "Poor" or "Very Poor" had received or were receiving structural correction. The University anticipated having almost all the pre-1997 deficiencies corrected or underway by the year 2000.

After the code changes resulting from the Northridge and Kobe earthquakes, the University re-evaluated many of its facilities and identified 208 additional structures that required action to protect the lives of occupants. Currently, the seismic hazards of 104 of those added buildings, containing about 67 percent of the space involved, have been addressed or are in progress.

Overall, about 325 facilities—72 percent of a total of about 454 "Poor" or "Very Poor" facilities containing 75 percent of all seismically hazardous space—have been corrected or are being corrected at this time, including all buildings identified as "Very Poor." At eight of the University's campuses, almost all seismically deficient buildings have been addressed. The magnitude of problems at two campuses, however—Berkeley and Los Angeles—presents a continuing challenge.

At Berkeley, the central campus is immediately adjacent to the Hayward Fault. It is now understood that forces experienced near such a perilous fault can behave differently and be much greater than previously thought. Of the 126 buildings that have been identified as seismically "Poor" or "Very Poor" at Berkeley, work on 43 structures with 58 percent of the total space at issue has been completed or is underway now. This includes all the buildings rated seismically "Very Poor." About 20 of the buildings recently added to the list of deficient structures are smaller facilities at the Richmond Field Station, rather than on the campus. Compounding the problem, however, is the fact

that many of Berkeley's buildings are relatively old and badly in need of renewal; the initiation of major structural improvements affects building infrastructure systems and adds significant cost. The campus estimates that another ten to fifteen years will be required before all the remaining seismically "Poor" buildings can be strengthened or replaced. The State funds available to address these needs have been limited. Unfortunately, the current reductions in State operations funding have significantly impacted the ability of the campuses to use non-state funds to supplement project budgets and pay for associated building renewal requirements and related costs.

At UCLA, almost all general campus facilities with seismic deficiencies have been corrected. Only ten of 47 structures remain to be addressed, but with roughly 2.4 million square feet of space at issue. Most of this work involves the Center for Health Sciences, which was damaged by the 1994 Northridge Earthquake. Replacement buildings are being completed for UCLA's hospitals and a number of health sciences buildings, but a large part of the older building complex that constituted the Center for Health Sciences will require several additional years to complete.

At both Los Angeles and Berkeley, the level of necessary additional funding presents a serious challenge that will require a level of campus investment and donor support that, in the current fiscal environment, is very difficult to achieve.

Capital Funding Strategies

Over the past several years, the University has undertaken a number of efforts to assess its level of capital needs and to review funding strategies, assisted by internal task forces and campus management. Starting in 2002, the University has provided data to the State Department of Finance concerning the five-year funding needs for State-supported programs, supporting the Department's legislatively mandated task of developing an annual five-year infrastructure plan for the State. As noted above, the University has documented funding needs currently at more than \$700 million per year.

It is important to note that our five-year need is different from and greater than the five-year capital budget for State funds presented in this document. The five-year budget request is based on our understanding of the level of State capital funding that may be available during this period, and it

presents specific campus projects in priority order based on that estimate of available funding. The budget request does not display or address our total funding need.

The Capital Planning Process

Each campus annually updates its five-year capital program based on a practical assessment of facility needs and on realistic expectations of the amount of capital funding that can be expected. This encourages careful allocation of limited funds to the highest priority campus needs. It also allows planning effort to be focused on those projects which are most important and avoids wasting resources on unproductive funding requests. Campus staff are continually assessing the changing requirements of programs relative to available facilities, identifying serious deficiencies, and analyzing options for addressing those deficiencies. Although many problems are resolved by adjustments within existing buildings, the level of enrollment growth across the University clearly requires a major increase in available space. The critical question at the campus level is how the construction of new buildings can best address the most critical needs—how the investment of limited State and campus funds can be optimized for the benefit of campus academic programs. The campus judgment is reflected in the list of projects scheduled in its five-year State and Non-State capital programs.

Projects proposed for State funding in the current budget year are based on intensive, detailed planning and pre-design analysis that typically occurs in the year before submittal to the State for initial funding. This process supports effective internal decision-making about the specific aspects of the project, works to ensure that scope and budget commitments can be met (barring extraordinary changes in construction market conditions such as currently exist), enables the University to explain the proposed projects effectively during State review, and improves project management during design and construction.

Organization of The Regents Budget for Capital Improvements

This budget document responds to the requirements of the State budget process and focuses on projects for which State funding is requested in 2006-07. In addition, the document includes the five-year capital improvement program for State-funded projects, reflecting anticipated funding requests through 2010-11, and a summary of other unfunded campus capital needs (including both State and non-State-supportable facilities).

As in previous years, the non-State-funded capital improvement program is addressed separately. A capital program document is prepared for The Regents that reflects projects anticipated from both non-State and State resources. However, approval actions on projects funded exclusively from non-State sources are managed as a continuing process, amending the program as required at bi-monthly Regents meetings to include new projects. In contrast, the State-funded capital improvement program reflects the once-per-year funding cycle of the State Budget process.

This State-funded capital budget document is organized as follows:

1. 2006-07 Budget for Capital Improvements: State Funds

The basic request for State capital outlay funds in 2006-07 totals \$340 million. It is anticipated that the State will secure these funds from either a new general obligation bond measure on the 2006 ballot, or legislatively approved lease revenue bonds. The request is presented in summary form for the University as a whole in the following section of this document. That section lists only those projects for which State funding is requested in 2006-07.

2. Campus Five-Year Capital Improvement Programs

The five-year capital improvement program planned for State funding, covering the years 2006-07 through 2010-11, is presented in more detail in individual sections for each campus (including UC Merced), Agriculture and Natural Resources, and universitywide facilities and programs. Each campus section begins with an introduction that outlines the goals and problems which shape the capital program for the campus. It is followed by a table presenting the five-year program for State funding and by a descriptive summary of each project in the five-year program. Each campus section concludes with a review of the capital needs of the campus beyond those addressed in the State-funded five-year program and approved non-State-funded projects; this includes both long-term needs that the University may propose for State funding in the future and needs that will be addressed from other funding sources.

Projects that are listed in the five-year programs for initial funding in the second and subsequent years of the program have already received substantial internal consideration and are expected to continue to be

included in future capital budgets. However, it must be noted that these five-year programs are planning documents and changes will occur as needs, opportunities, and funding decisions unfold.

Regental approval is requested only for projects for which State funding is proposed in 2006-07—summarized in the following section.

2006-07 BUDGET FOR CAPITAL IMPROVEMENTS STATE FUNDS

The 2006-07 Capital Budget requests \$340 million in State funds for the University's capital outlay program. This level of funding is essential to expand and upgrade academic facilities to support enrollment growth and to maintain progress on seismic and other life-safety improvements while also addressing essential infrastructure and building renewal needs.

The attached summary budget table displays the complete 2006-07 State-funded capital budget request. A total of \$336.7 million is requested to support twenty-nine major capital projects for preparation of preliminary plans, working drawings, or construction, presented in campus order. Also requested is \$3.3 million to equip one project for which construction has already been approved and funded by the State.

Summary

Of the twenty-nine major capital improvement projects, State funds are requested to support construction or complete design and undertake construction for eighteen projects, and to begin or continue design on eleven projects.

Nineteen projects are focused on urgent program improvements to accommodate past and projected enrollment growth and the modernization of facilities to address current program needs. Of these, eight will provide new buildings to expand instruction, research, and academic support facilities; and one will replace an obsolete and deteriorated academic facility with a new building. Four will expand and renovate existing academic buildings; four will renovate existing building space for growing academic programs; and two will renew and upgrade the infrastructure of existing laboratory buildings to address current academic program needs.

Life safety continues to be a critical priority for the University, and two of the twenty-nine project funding requests are proposed to address serious seismic life-safety hazards. Essential infrastructure renewal and expansion is the focus of eight other projects, required to provide the services necessary to accommodate the demands of enrollment growth and associated campus development.

New Facilities

The requirements of program improvement and enrollment growth will be supported by funding for construction of a new Social and Behavioral Sciences Building at Irvine, a Student Academic Support Services Building at Riverside, and a Digital Arts Facility at Santa Cruz. A new Life Sciences Replacement Building at Los Angeles will replace an existing facility that cannot be cost-effectively renovated to support laboratory science.

Funds are requested for both design and construction of Veterinary Medicine 3B at Davis and a Structural and Materials Engineering Building at San Diego.

In addition, academic program improvements and enrollment growth will be supported by three new building projects for which funds are requested to begin or conclude design: a Humanities Building at Irvine, a Social Sciences and Management Building at Merced, and a Biomedical Sciences Facility at Santa Cruz.

Expansion and Renovation

Four projects will address the space deficiencies and deterioration of aging buildings to support evolving academic program needs. Construction funding is requested for Mayer Hall Addition and Renovation at San Diego. Design and construction funding is requested for King Hall Renovation and Expansion at Davis and the McHenry Addition and Renovation Project at Santa Cruz. Funding for design of new space and building renovations is requested for the Davidson Library Addition and Renovation at Santa Barbara.

Renovations

Six projects address deficiencies within existing buildings. Construction funding to address deterioration of building infrastructure is requested for Medical Sciences Building Improvements Phase 2 at San Francisco. Funding of both design and construction is requested for Birge Hall Infrastructure Improvements at Berkeley and for Geology Building Renovations Phase 2 and the Culver Center for the Arts at Riverside. Funding for the design of building renovations is requested for Boyce Hall and Webber Hall Renovations at Riverside and Phelps Hall Renovation at Santa Barbara.

Seismic Corrections

Two projects included in the 2006-07 State-funded Capital Budget will correct serious seismic and other life-safety hazards. Funds are requested for construction of Seismic Safety Corrections Giannini Hall at Berkeley and for preliminary plans and working drawings for Arts Building Seismic Correction and Renewal at Santa Barbara.

Infrastructure

Critical infrastructure deficiencies will be addressed with funding requested to complete design or construction of renewal and expansion work in eight projects. These include five new projects at Irvine, San Francisco, Santa Barbara, Santa Cruz, and Agriculture and Natural Resources and three continuing projects at San Diego, Santa Barbara, and Santa Cruz.

Bond Funding

The University's 2006-07 State-funded capital budget request relies on financing to be provided by a new general obligation bond measure that the Governor and legislature would authorize for placement on the 2006 election ballot or by State lease revenue bonds. This financing is essential to the ability of the University to address existing and projected facility deficiencies. University enrollment has increased by approximately 29 percent since the current cycle of growth began in 1998-99, and the expansion of facilities has lagged the increase in enrollment. Student demand is forecast to continue to grow dramatically through 2010-11, for a total enrollment increase of approximately 49 percent. In addition, the existing buildings and infrastructure of the campuses are aging and present serious problems of deterioration, obsolescence, and life safety. The new financing measure is essential if these problems are to be addressed, maintaining the quality of UC academic programs in support of a resurgent economy and the vital demographic demands of the State.

**University of California
2006-07 BUDGET FOR STATE CAPITAL IMPROVEMENTS**

CCCI: 4632
EPI: 2726

<u>Cam- pus</u>	<u>Project</u>	<u>Prefunded</u>		<u>2006-07 Budget</u>			<u>Future Funding Requirements</u>		<u>Total Project Cost</u>	
		(\$000)		(\$000)			(\$000)		(\$000)	
Berk	Seismic Safety Corrections Giannini Hall	P	1,055	WC C	24,616 [2,498]	RB X	----		25,671 [2,498]	
Berk	Birge Hall Infrastructure Improvements			PWC	10,350	*	----		10,350	
Dav	Veterinary Medicine 3B			P	3,100		WC CE	62,400 [24,450]	65,500 [24,450]	
Dav	King Hall Renovation and Expansion			PWC PC	17,925 [3,924]	* G	----		17,925 [3,924]	
Irv	Biological Sciences Unit 3	PWC PWCE	53,712 [17,372]	* LB	E E	3,268 [3,268]	X	----	56,980 [20,640]	
Irv	Social and Behavioral Sciences Building	PW	2,850	*	C	37,582	*	E E	2,780 [2,780]	43,212 [2,780]
Irv	Primary Electrical Improvements Step 3				PWC	2,571	*	----	2,571	
Irv	Humanities Building				PW	1,749	*	CE	24,762	26,511
LA	Life Sciences Replacement Building	PWC PWCE	54,242 [45,500]	LB	C	38,576	*	----	92,818 [45,500]	
Mer	Social Sciences and Management Building				PW	2,667		CE	39,164	41,831
Riv	Student Academic Support Services Building	PW	1,650		C	18,035		E	887	20,572
Riv	Geology Building Renovations Phase 2				PWC	9,025	*	----	9,025	
Riv	Culver Center for the Arts	P	[500]	G	WC C	8,065 [4,300]	G		8,065 [4,800]	
Riv	Boyce Hall and Webber Hall Renovations				P	900		WC	30,100	31,000

Campus	Project	Prefunded		2006-07 Budget		Future Funding Requirements		Total Project Cost
		(\$000)		(\$000)		(\$000)		(\$000)
SD	Mayer Hall Addition and Renovation	PWCE	29,100	C	13,126		----	42,226
SD	Structural and Materials Engineering Building			PWC	75,057 *	E	3,000	78,057
						E	[4,000] X	[4,000]
SD	Chilled Water and Electrical Distribution Improvements	P	[150] X	WC	3,157		----	3,157 [150]
SF	Medical Sciences Building Improvements, Phase 2	PWC	18,351	C	16,379		----	34,730
SF	Electrical Distribution Improvements Phase 2			P	525	WC	12,587	13,112
SB	Electrical Infrastructure Renewal, Phase 2	WC PW	7,305 * [782] X	C C	6,328 * [2,367] X		----	13,633 [3,149]
SB	Arts Building Seismic Correction and Renewal			PW	1,855	C	19,145	21,000
SB	Davidson Library Addition and Renovation			P	1,250	WCE	58,350	59,600
SB	Phelps Hall Renovation			PW	1,100	C	9,300	10,400
SB	Infrastructure Renewal Phase 1			P P	489 [251] X	WC W	9,511 [4,899] X	10,000 [5,150]
SC	McHenry Addition and Renovation Project	PWC	38,845	WC	6,821	CE	36,258	81,924
SC	Digital Arts Facility	PW	2,218	C	19,751	E	1,037	23,006
SC	Infrastructure Improvements Phase 1	P	777	WC	7,833		----	8,610
SC	Biomedical Sciences Facility			PW	6,490	CE	67,710	74,200
SC	Infrastructure Improvements Phase 2			P	367	WC	6,320	6,687
ANR	Kearney REC Pressure Irrigation System			PWC	998 *		----	998
TOTAL				339,955		383,311		

* "Streamlined" State processing during implementation.

**KEY TO SYMBOLS AND COST INDICES
2006-2011 CAPITAL IMPROVEMENT PROGRAM**

Project Phase Symbols

P	=	Preliminary Plans
W	=	Working Drawings
C	=	Construction
E	=	Equipment

Fund Source Symbols

No Symbol	=	State Funds
HR	=	Hospital Reserves
LB	=	Long-Term UC Financing
F	=	Federal Funds
G	=	Gift Funds
GF	=	State General Fund
RB	=	State Lease Revenue Bond Fund
U,X	=	University Funds

Abbreviations

asf	=	assignable square feet
gsf	=	gross square feet
ogsf	=	outside gross square feet
FTE	=	Full Time Equivalent
kV	=	Kilo Volts
MVA	=	Million Volt Amperes
LRDP	=	Long Range Development Plan
DGS	=	State Department of General Services
*	=	“Streamlined” State processing during implementation

All unfunded project costs for State-funded facilities in this Budget are based on California Construction Cost Index (CCCI) 4632 and moveable equipment costs on Equipment Price Index (EPI) 2726, as projected for **July 2006**. Since these indices are associated with the 2006-07 Budget, individual project costs estimated for years beyond 2006-07 do not include an adjustment for inflationary increases.

SAN FRANCISCO CAMPUS

State Capital Improvement Program

ESTABLISHED	1873
ENROLLMENT 2004-2005 (ACTUAL)	4,051 FTE health science students
LIBRARY COLLECTION	820,362 volumes
CAMPUS LAND AREA	180 acres
CAMPUS BUILDINGS	3.0 million assignable square feet
HOSPITAL AND CLINICS	1.2 million assignable square feet

SAN FRANCISCO CAMPUS 2006-2011 STATE PROGRAM

INTRODUCTION

The University of California, San Francisco is a graduate health sciences campus with a 2004-05 enrollment of 4,051 students. It is a multiple-site campus with four teaching hospital sites, two UC-owned (at UCSF/Parnassus Heights and UCSF/Mount Zion) and two with which UCSF has longstanding affiliation agreements (Veterans Affairs Medical Center and San Francisco General Hospital). Parnassus Heights has been the principal center for teaching, research, and clinical programs; but, with the growth of academic and support programs at other sites, the role of the Parnassus Heights campus site is changing. UCSF's approved LRDP, which will guide campus development for another 8 years, calls for continued investment in existing sites and the development of a single major new site to consolidate some of the presently scattered locations and allow program decompression and expansion. The Mission Bay property was selected as the new site; the first parcel of land was acquired in July 1999, and the first project was completed and occupied in 2002-03. Development at Mission Bay is continuing with the planning and construction of several major projects.

As one of the nation's preeminent health sciences institutions, UCSF's mission is fourfold: teaching, research, clinical care, and public service. UCSF's success in carrying out its mission has led to growth across a wide spectrum of programs such as: molecular, cell, and systems biology research and clinical applications; structural biology and the design of antiviral drugs; pharmacology; retroviral research, especially on the AIDS virus (HIV); cancer; children's health and disease; aging; neuroscience; cardiovascular research; and epidemiology. These areas of growth are generating a tremendous demand for new space for research and clinical care activities and related teaching and administrative functions. Development of new facilities at Mission Bay will be of great importance in helping to meet these needs.

At the same time, ongoing problems in existing facilities must be addressed. These problems include the need to correct obsolescence in campus building infrastructures to meet seismic, fire, and laboratory safety requirements and to upgrade central utility, laboratory, and academic support facilities to meet the demands of modern biomedical research and teaching programs.

SAN FRANCISCO CAMPUS INTRODUCTION (continued)

UCSF faces a number of planning challenges at the central Parnassus Heights campus site. First, a serious program space deficit exists. Second, aging buildings exacerbate this space shortage. Several buildings at Parnassus are physically obsolete and/or seismically hazardous and require replacement. Many building infrastructure systems are obsolete, requiring renewal or replacement to meet utility and equipment demands as well as increasingly stringent building and fire-code requirements. Third, because the Parnassus site is so intensively developed with complex laboratory and clinical facilities, the collective demands on the central utility system for steam, electricity, and laboratory utilities require extensive upgrade and expansion. Finally, support facilities at Parnassus, such as for environmental health and safety, are aged and deteriorated and require replacement.

The campus is addressing these challenges in the following ways:

- To address the space deficit, initial development at the UCSF Mission Bay campus site is providing substantial new program space in the near term, with significant additional development capacity planned in the long-term. Programs relocating from Parnassus to Mission Bay will release space at Parnassus, which can help meet needs for program expansions.
- To address building obsolescence, UCSF has instituted a plan of ongoing replacement and upgrade of building systems to correct fire and life safety deficiencies, toxic hazards, code deficiencies, and infrastructure needs at its Parnassus buildings. The campus is substantially upgrading the mechanical systems of its core academic research buildings as well as emergency and standby power systems so that research space can meet current code and research requirements. UCSF also is renovating obsolete laboratory, clinical, and support space to meet the needs of program occupants more effectively.
- To remedy central campus utility system obsolescence at Parnassus, the campus is implementing an integrated program that began with construction of a new central utilities plant and the installation of new chillers and a cooling tower.
- To meet the concerns about seismic life safety and deteriorated support facilities, UCSF is proceeding with a program to replace or upgrade the facilities at issue.

SAN FRANCISCO CAMPUS INTRODUCTION (continued)

- To address structural seismic deficiencies in its teaching hospitals at the Parnassus and Mount Zion sites, UCSF has developed a plan that will achieve compliance with seismic requirements.
- To address deficiencies in buildings occupied by UCSF at San Francisco General Hospital, UCSF is working with the City and County of San Francisco on a plan to correct or replace deficient facilities.

2006-2011 STATE CAPITAL IMPROVEMENT PROGRAM

CCCI 4632
EPI 2726

SAN FRANCISCO CAMPUS

PROJECT NAME	PREFUNDED	PROPOSED 2006-07	FUTURE FUNDING REQUIREMENTS				TOTAL PROJECT COST
			2007-08	2008-09	2009-10	2010-11	
	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)	(000s)
Medical Sciences Building Improvements, Phase 2 (922880)	P 1,400 W 1,632 C 15,319	C 16,379					34,730
Electrical Distribution Improvements Phase 2 (940540)		P 525	W 845	C 11,742			13,112
Medical Sciences Building Improvements Phase 3				P 600	W 1,100	C 15,300	17,000
Electrical Distribution Improvements Phase 3						P 600	15,500
CAMPUS TOTAL		16,904	845	12,342	1,100	15,900	

**SAN FRANCISCO CAMPUS
2006-2011 STATE CAPITAL IMPROVEMENT
PROGRAM**

**Medical Sciences Building
Improvements, Phase 2..... C \$ 16,379,000**

State funds are requested for the second stage of construction for an upgrade to the infrastructure of the Medical Sciences Building, a 15-story building of 224,308 asf connected to four adjacent high-rises in the UCSF megastructure. The Medical Sciences Building has been used for health sciences instruction and research programs since its construction during the 1950s. The building heating and ventilation equipment has never been renovated, now operates poorly, and requires renewal. This project will correct existing HVAC deficiencies, convert an existing steam heat system to a more efficient hot water system, improve air distribution and cooling throughout the facility, and add capacity to the chilled water plant to serve building needs. The work scope will also correct a structural deficiency to meet required seismic standards.

**Electrical Distribution
Improvements Phase 2..... PWC \$ 13,112,000**

This project covers the second step in the implementation of the electrical system master plan for the Parnassus campus. It will improve flexibility for central plant operators to control individual electrical loads on the system in the event of a power outage and reduce the time required to restore power. The project will consist of a series of major equipment, generator, and control system upgrades as well as extension of emergency and standby power distribution from the Central Plant to core Parnassus research buildings. This will improve emergency and standby power and distribution systems and enable the campus to meet more stringent life-safety requirements.

**Medical Sciences Building
Improvements Phase 3..... PWC \$ 17,000,000**

This project will build upon the work completed through Phases 1 and 2 of the Medical Sciences Building Improvements project, completing the upgrade of the building's mechanical systems (heating, ventilation, and air conditioning) begun in the earlier projects. The project will include chilled

SAN FRANCISCO CAMPUS CAPITAL PROGRAM (continued)

water distribution, air-handling units, the heating hot water system, building management controls, and other mechanical and electrical systems.

Electrical Distribution

Improvements Phase 3..... PWC \$ 15,500,000

This is the third in a series of projects that are implementing the electrical system master plan for the Parnassus campus. The project will improve emergency and standby power sources and distribution systems and enable the campus to meet more stringent life-safety requirements. It will continue the upgrade of major equipment, generators, and control systems and also extend emergency and standby power distribution to academic and research buildings on the west side of the Parnassus campus.

SAN FRANCISCO CAMPUS OTHER CAPITAL NEEDS

In accordance with its LRDP, the San Francisco campus has embarked on a multi-track major capital improvement program to solve a number of longstanding capital needs. In addition to projects presented in the current five-year State-funded capital improvement program, over the next decade UCSF will pursue solutions to the most important facility improvement objectives described below:

1. Core Academic Facilities

Mission Bay Site Development: As proposed in the UCSF LRDP, a total of 43 acres of land in the Mission Bay area of San Francisco is being donated and transferred in phases to The Regents to create a new campus site for UCSF research and instruction. An initial phase of 26 acres is being developed with the planning and construction of major new buildings, landscaping, infrastructure, and parking. The new campus will, over the next two decades, accommodate 2.65 million sq ft of development, plus parking. Toward this goal, UCSF has now constructed three biomedical research buildings, a new campus community center, new housing, and structured parking.

Parnassus Site Research Laboratory Building Improvements: The campus research capabilities at the Parnassus site are constrained by obsolete facilities which have not been able to keep up with current and projected requirements of a rapidly evolving research enterprise. In spite of significant progress made in upgrading buildings, many laboratory buildings on the Parnassus site have aging infrastructure that requires substantial upgrade to meet capacity and performance requirements of modern research. Capital needs for research facilities include major improvements of such essential elements as fire and life safety, fume hood and building air supply, electrical capacity and distribution, heat reduction, and environmental controls for equipment and occupants. Projects must be carefully planned to optimize investment, coordinate work across multiple buildings, and limit disruption for faculty and students. Space released at Parnassus from the move of biomedical research to the Mission Bay campus will be renovated and re-assigned to existing and new programs.

SAN FRANCISCO CAMPUS OTHER CAPITAL NEEDS (cont'd)

2. Health Sciences Clinical Facilities

Medical Center Renovations at Parnassus: Clinical care space requires improvements to house new imaging equipment, expand surgery and recovery areas, accommodate new interventional therapeutic procedures, and meet code requirements. Future projects will continue the renovation program for patient care and other units at Moffitt and Long Hospitals in response to rapid changes in managed care and their impact on traditional clinical in-patient facilities. Special attention is being given to increasing the numbers of beds devoted to intensive and acute care units and expanding the quantity of operating rooms. To create the space to do this within existing hospital buildings, the Medical Center has been relocating some of its diagnostic and lab support functions to various off-site locations. The expansion of academic and acute care programs related to increased in-patient activity will permit wider training opportunities for UCSF students and increase the effectiveness of the UCSF Medical Center in the managed care market.

Medical Center Renovations at Mount Zion: Since the integration with Mount Zion in 1990, much of the short-range development program for the UCSF Medical Center at Mount Zion has been accomplished with the completion of a research building, two medical office buildings, and a five-story Outpatient Cancer Center (into which existing outpatient clinics have been relocated). The campus will also add a new Osher Center for Integrative Medicine, a School of Medicine academic research center that will provide alternative care services. Improvements to existing inpatient buildings are pending completion of extensive review of needs, financial issues, and seismic-safety requirements for acute care hospitals mandated by the Alquist Hospital Facilities Seismic Safety Act (SB 1953—see Section 5 below) that significantly affect program plans at Mount Zion.

3. Auxiliary Enterprise Facilities

Campus Housing at Parnassus: UCSF faces a critical housing shortage for students, junior faculty, clinical residents, and staff which has been difficult to satisfy because of the high cost of housing construction and limited campus site capacity. In the past several

SAN FRANCISCO CAMPUS OTHER CAPITAL NEEDS (cont'd)

years, UCSF has converted more than 30 houses along Third and Fifth Avenues and Kirkham Street from administrative and academic offices to residential use. Several remaining houses near the Parnassus site will either be converted to faculty family housing or demolished and the sites used to build new studio apartments for students, residents, and post-doctoral scholars.

Campus Housing at Mission Bay: To meet the LRDP target of providing housing for 40 percent of its future student enrollment, UCSF has built new housing at Mission Bay. UCSF will also investigate development of affordable housing for junior faculty, clinical residents, and staff.

Campus Child Care at Parnassus and Mission Bay: UCSF presently has two child care facilities with a total licensed capacity for 132 children and a waiting list of approximately 300 families. New child care facilities are being developed at both campus sites to support recruitment and retention of faculty, staff, and students.

4. Utilities, Site Development, Life Safety, Open Space, Transportation, and Parking

Site and Infrastructure Improvements at Parnassus: Many of the campus utility distribution systems and building infrastructure systems are aged beyond their useful life and unable to meet current needs. While construction of the Central Utility Plant has added significant electrical and steam capacity, the Parnassus campus needs other improvements to its utility systems—including electrical, voice/data communications, steam, water, chilled water, and other service systems—in order to renew and supply sufficient capacity.

Site and Infrastructure Improvements at Mission Bay: As a long-range goal, UCSF plans to construct a new central utilities plant at Mission Bay to support proposed and future development. The plant will allow UCSF to produce 12 kV electrical power that will increase fuel efficiency, reduce energy costs, and minimize environmental pollution. The centralized utility system will be constructed in three phases: (1) an interim utility plant with boilers and chillers and distribution piping to three future research buildings, (2) a utility

SAN FRANCISCO CAMPUS OTHER CAPITAL NEEDS (cont'd)

distribution loop to all major buildings at the Mission Bay campus, and (3) the permanent central utility plant.

Fire Protection and Life Safety: In response to fire and life safety code requirements, a program of building improvements will upgrade general safety for faculty, students, and staff in laboratories and teaching spaces at the Parnassus campus.

Transportation and Parking Improvements: The dispersed facilities of the UCSF multi-site campus and their urban setting result in significant access and circulation problems. Improvements to parking and transportation systems will provide better movement to and between several key campus sites. With few (if any) opportunities for expansion at Parnassus and Mount Zion, UCSF experiences substantial deficits in parking at these sites. On the other hand, UCSF has completed one new parking structure and is constructing a second at Mission Bay, in addition to new surface parking lots.

5. Corrections for Seismic Safety

Seismic Upgrade of Facilities: The correction or removal of all remaining seismic hazards is a high priority for UCSF. The demolition of seismically unsound buildings at Parnassus will provide sites for some new construction, but it will also reduce overall campus built space.

UCSF is implementing its plans to address the identified seismic life safety hazards in academic facilities at Parnassus.

UCSF Medical Center clinical facilities at both the Parnassus and Mount Zion sites need structural and nonstructural seismic improvements to comply with seismic requirements. Improvements to comply with the 2002 Senate Bill 1953 seismic requirements have been completed at both sites, and State funds have been provided to address 2008 requirements at the Parnassus site.

Further improvements required to comply with SB 1953 requirements for 2030 are being evaluated and are expected to be significant in scope and cost. UCSF's existing hospitals at Parnassus and Mount Zion sites

SAN FRANCISCO CAMPUS OTHER CAPITAL NEEDS (cont'd)

not only do not meet seismic standards for 2030 but also are functionally obsolete, have inefficient space layouts not easily adapted to changing practices in patient care, and lack the space to meet the growing demand for highly specialized patient care.

UCSF leases several older masonry buildings at San Francisco General Hospital (SFGH) that are used for research laboratories and offices but are seismically unsound. The campus is developing plans in coordination with SFGH to correct the seismic deficiencies or provide alternative facility solutions.