

OVERVIEW

UNIVERSITY OF CALIFORNIA CAPITAL IMPROVEMENT PROGRAM

The University's enrollment was projected in 1998 to increase 43 percent, by 64,000 full-time-equivalent (FTE) students, in the 12-year period between 1998-99 and 2010-11. Based on current estimates, the University expects enrollment to grow by 7,100 students in 2002-03—an increase of about 5,000 students consistent with the University's long-term projections and about 2,000 related to overenrollment in 2001-02. Although subject to review as new data become available, it is expected that enrollment will continue to grow at about 5,000 FTE per year over the remainder of the decade, and by 2010-11 the University will reach its planned target of 211,000 FTE students.

Each campus has a Long Range Development Plan (LRDP) that defines the maximum anticipated enrollment of the campus, reflecting the mandated environmental reviews and approvals necessary for campus development. The existing campus LRDPs were approved between 1989 and 1994, and anticipate a total universitywide increase of 34,000 additional students above the levels in 1998-99. Work is rapidly proceeding on development of a new UC campus at Merced; it is scheduled to open in the Fall of 2004 and reach an enrollment of 6,000 FTE students in six years, by 2010-11. The total enrollment capacity of the existing nine campuses as defined by their current LRDPs, plus UC Merced, is approximately 24,000 FTE less than the current forecast of 2010-11 enrollment demand, a substantial shortfall of University capacity.

All campuses are actively pursuing programmatic and physical options for accommodating the increase in students. At several campuses, this is dependent upon the lengthy process of amending their present LRDPs, addressing applicable environmental concerns and engaging in the necessary public review. 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. Of particular importance is the objective of making more efficient use of existing campus facilities, particularly during the summer.

The University has agreed with the Governor and Legislature to pursue the expansion of instructional programs during the summer with the target of a universitywide summer and off-campus enrollment equivalent to about 40 percent of the average fall/winter/spring quarter academic workload. This

presents a serious challenge, not simply in terms of ingrained student summer work and vacation patterns, but also concerning efficient scheduling of courses, cost-effective class sizes, appropriate staffing to provide the quality essential to a University of California education, and the requisite funding. However, it is clear that the University must exert every effort to make this program succeed and exploit all other opportunities to accommodate increased enrollment if the projected enrollment demand is to be met.

Maintenance of the quality of University of California academic programs and the education received by its students is critical. Under the Master Plan for Higher Education of the State of California, each of the three segments of public higher education has a focused role. The University of California is designated by the Plan as California's graduate and research institution, providing a distinct character of education for both undergraduates and graduate students that prepares them to take leadership positions in industry and the community, and supporting the rapid advance of California's economy through research and public service. However, maintaining the high quality of UC programs requires that the University continue to hire new faculty who are working at the leading edge of their fields, and effectively support their efforts. The rapid growth experienced by the University during the 1980s demonstrated the serious strains created in heavily impacted academic programs; the level of growth being experienced now is even greater.

Appropriate facilities are an essential part of this effort. This is most clearly seen for science and engineering programs, which are 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 has been so successful that the University is expected to meet its goal in 2001-02, four years ahead of schedule. Those programs are of particular concern because of their dependence on highly sophisticated laboratories and technologies to support "cutting-edge" teaching and research.

Much of the student learning process at institutions of the level of UC, for undergraduates as well as graduates, occurs in participatory research and related settings rather than the more traditional didactic classes. The faculty members who are most effective with their students—the first-rank faculty essential to producing the graduates and breakthroughs that drive the California economy—will not come to the University of California unless the 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; modern computation, information, and communication

resources and technologies; and a satisfactory campus utility infrastructure necessary to support these facilities.

However, the campus must have a balanced array of many categories of facilities and services to function effectively and meet its education, research, and public service goals. A shortfall of one impacts the functional success of the campus as a whole. These facilities include core academic buildings, libraries, student services, housing and auxiliary enterprises, health science centers, utility plants and infrastructure, and remote centers for educational outreach, research, and public service.

The ability to develop this system of people and facilities in a timely way, and the availability of funds to make possible the necessary investment, are serious challenges. However, the new tidal wave of students are moving through California's primary and secondary schools and many are already at our door. The University is committed to meeting their needs.

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

The condition of the University's existing physical plant is a separate and serious problem, resulting from the wear and decline associated with the age and intensive use of many of our buildings and infrastructure. The importance of facility renewal is obvious at a campus of the age of Berkeley or Los Angeles, but even the "newest" of the existing campuses are now nearly four decades old and are experiencing many of the same problems. The University's backlog of deferred maintenance grew dramatically during the periods of budget reductions experienced in each of the past three decades. Deficiencies in existing facilities remain a major constraint to academic program quality and innovation. Recent State action to increase permanent maintenance funding and the University-financed bonds for deferred maintenance address an essential first increment of this problem, but an adequate level of continued support through the deferred maintenance program and capital renewal is necessary to preserve the value of the University's physical assets.

A third category of need is that of change and obsolescence. As science, industry and commerce constantly evolve in response to new knowledge and opportunities, so must the academic programs that are responsible for preparing graduates entering those fields and for conducting the research that advances knowledge and creates opportunities. Instruction and research objectives evolve and change direction, as do the methods and equipment used. To prepare students properly, academic programs must themselves 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 changing program needs, they become constraints to the capability of the programs and ultimately limit the abilities of the graduates entering the California economy.

This continued evolution of programs and techniques is strong, particularly in science and engineering fields. In many cases, the boundaries between science and engineering are dissolving (similar changes are occurring in other academic disciplines as well). Witness the extraordinary expansion of “bioengineering” where research and education in a single laboratory (for example, development of an artificial heart or diagnostic/medicine delivery devices using nanoscale technologies) may involve biology, chemistry, materials science, structures, fluid dynamics, and other fields of expertise. The technologies involved today are similar across disciplines and often involve sophisticated instrumentation and analysis at a cellular or molecular level, demanding equipment and controlled environments once common only in high-level physics and health science research. Many laboratories once satisfactory for entomology, botany, agriculture, or engineering are now completely obsolete for work at the forefront of their disciplines.

This has exacerbated the fact that many of the University’s older buildings were designed to meet building, fire, life-safety, and accessibility codes written 30, 50, or more years ago. Not only have regulatory and public understanding and 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. The dramatic changes in laboratory methodologies and technologies, and particularly the great increase in chemical usage, present safety concerns significantly greater than normal in the past.

The University’s capital program also is seriously impacted by the critical need to ensure that students, faculty, and staff are safe in an earthquake. A series of devastating earthquakes in California and abroad has amply demonstrated the hazards inherent in many buildings designed under earlier structural codes and practices. The University has had an aggressive program of seismic corrections over the last two decades, and over 80 percent of University buildings that had been rated before 1994 as being seismically “Poor” or “Very Poor” have now received or are now receiving structural correction. The University anticipated having almost all such corrections completed or at least started by the year 2000 if funding levels were maintained. However, the Northridge Earthquake of 1994 and the

subsequent Kobe earthquake provided substantial new understanding of earthquake forces and building performance, and resulted in significant changes in structural design codes and practices. As a result, the University has re-evaluated many of its facilities, identifying a number of additional buildings that require action to protect the lives of occupants. The problem has been particularly serious at Berkeley, where the campus core is immediately adjacent to the Hayward Fault, because it is now understood that forces experienced close to such a fault can be much greater than previously estimated.

The Regents have continued to give high priority to completing the University's program of seismic and other life-safety corrections as rapidly as possible, and the new seismic projects have been incorporated into the capital program. This problem has had a significant impact on several campuses, which also are anticipating a major increase in student enrollment. The requirement to rebuild the UCLA Center for Health Sciences and many other buildings on the general campus which were damaged in the 1994 Northridge earthquake, and the massive seismic corrections program at the Berkeley campus, present special problems. State funds have been supplemented by major FEMA support at Los Angeles, but even there, and particularly at Berkeley, the level of additional funding necessary presents a serious challenge and will require extraordinary campus investment and donor support, stretching campus resources to their limit for the next two decades.

The University has a Capital Needs and Funding Strategies Task Force at work, comprised of senior management staff from all the campuses. The objectives are to assess long-term capital needs for the next ten years in all categories, including those programs normally not considered State-supportable, and to assess the adequacy of funding sources to meet the University's long-term capital needs and the development of new funding strategies. A preliminary estimate of capital needs for the period 2002-03 through 2006-07 has been shared with the State Department of Finance and the University will continue to work closely with Finance and the Legislature to secure increased support to address the University's most pressing problems.

The definition of funding need is based on the application of common space planning standards across the campuses (avoiding the workload and subjective factors that are involved in development of individual project lists, often challenged as "wish lists"). For core academic facilities, these include the space standards developed by the California Postsecondary Education Commission (CPEC) and legislatively approved utilization standards. The CPEC standards were published in 1990 following an intensive two-year process to review and revise space standards that had been developed in the

1950s, and recognize the major changes in teaching and research methods that had occurred in the previous three decades. It should be noted that such standards estimate the quantity of space required, but do not deal with the quality of available space that continues to be a problem for our older campuses.

This estimate of capital need is based on current enrollment projections reflecting an increase of about 27,500 FTE general campus students during the next five years' period, and recognizes our agreement to expand summer and off-campus academic enrollments to approximately 40 percent of the average F/W/S quarter assuming funding is provided.

It is important to note that the definition of our five-year need is different and greater than the five-year capital budget for State funds that is presented in this document. The five-year budget request is based on reasonable assumptions concerning the level of State capital funding that we estimate will be available during this period, and presents specific projects in priority order based on that estimate of available funding. The budget does not display our total funding need.

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 \$600 million per year over the next five years for the existing nine campuses. Of the total \$600 million annual need, approximately \$350 million is related to development of new facilities and expansion of campus infrastructure to accommodate enrollment growth. The balance of \$250 million is related to the renewal and modernization of existing facilities and correction of seismic hazards.

However, these figures exclude the development costs for the Merced campus; approximately \$110 million of State funds will be needed over the five-year period to complete the first phase of development (6,000 FTE students), supplemented by University funding for student housing and support functions. The State also is scheduled to provide \$230 million to complete its funding commitment for the four Institutes for Science and Innovation; the legislative requirement is that the University match the State funds at a ratio of at least two non-State dollars for every State dollar, but the present expectation is that the actual achievement will be closer to three to one. Funding for deferred maintenance is currently through the support budget, and is proposed at an annual level of approximately \$70 million for the next few years.

In contrast with this estimated need of \$600 million per year for academic programs and essential supporting functions, the 1998 general obligation

bond issue provided approximately \$210 million per year starting in 1998-99 and extending through the 2001-02 budget. Subsequent funding will require action by the Governor and Legislature to place a new bond measure on the 2002 election ballot for voter action. CPEC has suggested that a bond measure of \$1 billion per year is needed to support the State's three segments of public higher education, divided equally between the three segments. The Legislature is considering bond measures at that level that would provide UC with \$330 per year for the needs of the existing nine campuses. Additional funding would be provided through a separate provision of the bond for development of new campuses and off-campus centers. It is also anticipated that the remaining State funding for completion of the Science Institutes would be through State General Funds or lease revenue bond funds.

This would still leave a funding gap of over \$200 million per year. The University has a standing commitment to pursue gift and other potential fund sources to supplement State resources. We can meet possibly as much as half of this shortfall, but not all. The outcome of this shortfall is similar to what was experienced during the growth period of the 1980s—in the short term, the availability of core academic facilities did not keep up with the pace of enrollment growth. Many of the new facilities funded by the State based on enrollment growth in the mid-80s did not come on-line until after enrollment growth had leveled off during the early 1990s. The degree of impact and lag may be greater in the current case because the University's rate of enrollment growth is larger. The current problem is particularly acute at the University's heavily impacted growth campuses—Davis, Irvine, Riverside, San Diego, Santa Barbara, and Santa Cruz—which are currently operating at a significant space deficiency. We expect that the State will help the University minimize a shortfall, and will provide continued funding after 2010-11 to allow correction of the remaining deficiencies. If there is confidence that the necessary State funding will be provided, individual campuses can deal with reasonable levels of short-term deficiencies. If adequate funding is not provided, the University's ability to 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.

Capital Planning

Each campus routinely prepares a five-year capital program based both on a practical assessment of facility needs and on realistic expectations of the amount of capital funding that can be expected. This allows detailed planning efforts to be focused on those projects which are most important for the campuses and thereby avoids wasting resources in preparing unsuccessful funding requests. Projects proposed for State funding in the current capital improvement budget year are based on intensive, detailed planning and pre-

design analysis that typically starts three years before initial State funding. This process supports effective internal decision-making, ensures that the commitments that are made can be met, 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 focuses on projects for which State funding is requested in 2002-03. In addition, the document includes the five-year capital improvement program for State-funded projects, reflecting anticipated funding requests through 2006-07, 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. It is managed as a continuing process amended as required to include new projects when funding is obtained or financing plans are developed. In contrast, the State-funded capital improvement program reflects the once-per-year funding cycle of the State Budget process. More detailed presentations of both State and non-State-funded capital needs and funding strategies are being developed for presentation to The Regents later in the year.

This capital budget document is organized as follows:

1. 2002-03 Budget for Capital Improvements: State Funds

The request for State capital outlay funds in 2002-03 totals \$474.4 million. This includes \$334.5 million from the anticipated 2002 general obligation bond measure for the needs of existing campuses. It also includes \$41.9 million for the next step of site development and infrastructure work and construction of one of the buildings for the new UC Merced campus, expected to be funded from general obligation bond funds designated for new campuses development or lease revenue bonds. The next increment of funding for the California Institutes for Science and Innovation, \$95 million, is expected to be provided from State General Funds or lease revenue bonds. The request is presented in summary form for the University as a whole in the following Overview section of this document. That Overview lists only those projects for which State funding is requested in 2002-03.

2. Campus Five-year Capital Improvement Programs

The five-year capital improvement program planned for State funding,

covering the years 2002-03 through 2006-07, is presented in more detail in individual sections for each campus (including UC Merced), the Division of Agriculture and Natural Resources, and universitywide facilities and programs. Each campus section begins with an introduction that outlines the goals and problems which drive the capital program for the campus. It is followed by a table presenting the five-year program for State funding and 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.

Regental approval is requested only for projects for which State funding is proposed in 2002-03—summarized in the following Overview section.

Projects that are listed in the five-year programs for funding in later years have already received substantial internal consideration and are expected to continue to be reflected 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.

2002-03 BUDGET FOR CAPITAL IMPROVEMENTS STATE FUNDS

The 2002-03 Capital Budget requests \$474.4 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, particularly in the sciences and engineering, and to maintain progress on seismic and other life-safety improvements while also addressing essential infrastructure and building renewal needs.

The attached summary budget schedule displays the 2002-03 State capital budget request in four categories. The first section constitutes a request of \$41.9 million for three projects at the Merced campus. The second category of funding, \$95 million, represents the next increment of funding for the California Institutes for Science and Innovation projects. The third category equips one project for which construction has been approved and funded by the State, requiring \$1.5 million. The fourth category, a total of \$336 million, represents about 70 percent of the funding request and includes 26 major capital projects in universitywide priority order for which preliminary plans, working drawings, or construction funds are requested in 2002-03.

The \$41.9 million requested to continue physical development of the new Merced campus includes the design and construction for the second phase and design of the third phase of site development and infrastructure, as well as construction of and equipment for the third academic buildings (a classroom and office building). This building, as well as others that have already been funded, will serve multiple uses during the initial period of campus development.

The 2000 Budget Act had approved a plan to provide \$300 million in four annual increments for development by the University of California of three interdisciplinary California Institutes for Science and Innovation. The 2001 Budget Act approved the second increment for the original three, plus additional funding for a fourth Institute. The University's current request for 2002-03 includes \$95 million in State funds to continue development of the four Institutes. The enabling legislation requires that funding from non-State sources match the State funding on no less than a two-to-one basis, but the University in fact expects to provide close to a three-to-one match.

Of the 26 major capital improvement projects at existing campuses in this 2002-03 budget, funds are requested to support construction or complete design and undertake construction for 14 projects, and to begin or continue design on 12 projects.

Seven of the 26 project funding requests are to address serious seismic and other life-safety hazards. Because life safety continues to be a critical priority for the University, this funding request includes two projects that will provide facilities to improve emergency response to earthquakes and other disasters.

Fourteen projects are focused on urgent program improvements and enrollment growth. Of these, 12 will provide new buildings to expand instruction, research, and academic support facilities; the other two will expand and renovate existing buildings. One additional project will renew and upgrade the infrastructure of an existing laboratory building to accommodate academic program needs and another will provide a new building to relocate functions from aging and obsolete facilities. Essential infrastructure renewal and expansion is the focus of two additional projects.

The requirements of program improvement and enrollment growth will be supported by funding for construction of engineering buildings at San Diego (priority 1), Santa Cruz (5), and Riverside (6), a Life Sciences building at Santa Barbara (2), a Natural Sciences building at Irvine (9), and the next increment of collection storage space at the Northern Regional Library Facility (18); and for design and construction of a Biological Sciences building at Riverside (10).

Growth needs are also supported by funds requested to begin or complete design for a Pharmaceutical Sciences building at San Diego (11), a Computer Sciences building at Irvine (15), the Robert Mondavi Institute for Wine and Food Science at Davis (16), a Humanities and Social Sciences facility at Santa Cruz (20), and a Student Academic Services facility at San Diego (25). Funds for design of an addition and renovation to the Psychology Building at Santa Barbara (13) and to the Biomedical Library at San Diego (21) also will support growing enrollments.

Two projects address the deficiencies of aging and obsolete buildings and support program needs. Funding is requested to construct a new instructional and research facility that will correct accreditation deficiencies at the School of Veterinary Medicine at Davis (3), and to complete design of a project to renew and upgrade utility systems in the Health Sciences West laboratory building at San Francisco (12).

Several projects will correct serious seismic life-safety hazards. This includes funding to complete design and/or construction work at four projects: mitigation of seismic hazards in Stanley Hall at Berkeley (4) and the Engineering 1 building at Los Angeles (7) through replacement of the existing buildings, and corrections of the structure of Rowland Hall at Irvine (8) and

Hertz Hall at Berkeley (14). Funds are also requested to complete the design of the replacement facility for the seismically hazardous office wing in Snidecor Hall at Santa Barbara (22). Other critical life-safety matters will be addressed through funding of emergency response facilities at San Diego (19) and Santa Cruz (24).

Campus infrastructure deficiencies will be addressed by funding requested for construction of renewal and expansion work on the electrical distribution system at Los Angeles (17) and distribution improvements to the west campus utilities network at San Diego (23).

Finally, funding will be requested for a project to advance important research in watershed sciences at Davis (26).

More than two-thirds of the University's 2002-03 State-funded capital budget request, \$334.5 million, involves major capital projects for the University's nine existing campuses and relies primarily on financing to be provided by a new general obligation bond measure that has yet to be approved by the Legislature and the voters. This bond measure is expected to be placed on the ballot for action by the voters in the Fall 2002 election. The 2002-03 budget request also includes an additional \$41.9 million for establishment of the new Merced campus, expected to be supported by general obligation bond funds designated for new campus development or lease revenue bonds. The next increment of State funds for the California Institutes for Science and Innovation, \$95 million, is anticipated to be provided from State General Funds or lease revenue bonds as well. One small watershed research project, \$3 million, is to be funded from a special provision of the 1998 Water Bond.