



CHAPTER 4

CAPITAL PLAN AND CAPITAL BUDGET

Stanford's 2015/16–2017/18 Capital Plan and 2015/16 Capital Budget are based on projections of the major capital projects that the university will pursue in support of its academic mission. The rolling Capital Plan includes projects that are in progress or are expected to commence during the three years it covers. The Capital Budget represents the anticipated capital expenditures in the first of these years. Both the Capital Plan and the Capital Budget are subject to change based on funding availability, budget affordability, and university priorities.

At \$2.9 billion, the Capital Plan reflects the significant investment Stanford continues to make in its facilities, driven by the academic priorities for teaching, research, and related activities, described in Chapter 2, and the initiatives of the administrative and auxiliary units that support the academic mission, described in Chapter 3.

With the 2014/15 project completions, Stanford will have invested \$5.6 billion in its facilities, infrastructure, and commercial real estate since 2000. Across the campus, aging facilities have been replaced with new and renovated buildings capable of supporting cutting-edge science, engineering, medicine, and the collaborative research among them, as well as with new facilities for business, athletics, law, and the arts. Off-campus commercial development projects, such as the recently completed 1701 Page Mill Road, provide additional income to the university.

In addition to the many projects currently under way and previously forecasted, the Capital Plan now includes the following new projects and programs: the Clinical Excellence Center 1 (CEC 1) and associated projects (\$230.1 million), the Housing Acquisition Initiative (\$200 million), Frost Amphitheater Improvements (\$25 million), the Kingscote Renovation (\$16.6 million), Roble Dining Hall Refurbishment (\$12 million), the Campus Drive Roundabouts Program (\$7 million), the New Child Care Facility (\$6.3 million), the Geballe Laboratory for Advanced Materials Infill Building

(\$5.6 million), and the Building 60 Physics Teaching Lab (\$4.6 million).

The following eight significant projects make up 64% of Stanford's Capital Plan: Stanford in Redwood City Phase 1 (\$543.7 million), the Stanford ChEM-H (Chemistry, Engineering & Medicine for Human Health) and Stanford Neurosciences (Neuro) Institutes Building (\$252.6 million), the CEC 1 (\$230.1 million), the Biomedical Innovation Building and Tunnel (\$200.8 million), the Housing Acquisition Initiative (\$200 million), the California Avenue Faculty Homes (\$162 million), the Anne T. and Robert M. Bass Biology Research Building (Bass Biology Building) and associated projects (\$132.6 million), and the new Earth, Energy & Environmental Sciences Building (\$128.1 million). The remaining 36% of the Capital Plan comprises 28 projects and 10 infrastructure programs. For a detailed listing of all Capital Plan projects and programs, see the tables on pages 80–82.

The Capital Plan accounts for the long-term budget impacts on operations, maintenance, and utilities (O&M) and debt service. These obligations are included in the university's long-range budget planning and are detailed on page 74.

This chapter provides an overview of the capital planning process, describes current strategic initiatives, presents the 2015/16–2017/18 Capital Plan and related constraints, and discusses the 2015/16 Capital Budget.

CAPITAL PLANNING OVERVIEW

Capital Planning at Stanford

Stanford's Capital Plan is a three-year rolling plan with commitments made for projects with fully identified and approved funding. Cash flow expenditure forecasts for these projects extend beyond the three-year period, and budget impacts for O&M and debt service will commence at construction completion. The plan includes forecasts of both cash flow and budget impacts by year, as well as the impacts of projects beyond the three-year period (see tables on 74).

The Capital Plan is set in the context of a longer-term capital forecast. The details of this forecast, particularly funding sources and schedules, are less clear than those of the three-year plan, as the needs and funding sources that may emerge over the long-term horizon are difficult to anticipate. Plans tend to evolve as some projects prove more feasible than others based upon shifting funding realities and academic priorities.

Strategic Initiatives

The following university strategic initiatives are integral to this year's Capital Plan:

- Stanford in Redwood City
- Biology/Chemistry/Computer Science Precinct
- New housing
- Growth and transportation alternatives
- Parking and circulation
- Water conservation

STANFORD IN REDWOOD CITY

Stanford's plans for an off-site administrative campus in Redwood City have moved forward. Consistent with the strategic development envisioned with the 2005 acquisition of the Redwood City property, select administrative staff will relocate to this site in order to preserve core campus space for the university's highest academic priorities. Plans have commenced to implement a comprehensive Phase 1 development of 634,600 square feet (sf)—560,250 sf of office buildings, 65,000 sf of amenity buildings, and 9,350 sf of utility and IT infrastructure—as well as parking for 1,461 vehicles. The Phase I development is anticipated to be completed in 2018/19. Approximately 250,000 sf will remain undeveloped, allowing for future university

expansion. Two remaining areas—totaling 640,000 sf of development potential and related parking—may be marketed to third-party tenants and the hospitals (Stanford Health Care [SHC] and Lucile Packard Children's Hospital [LPCH]) concurrent with the development of Phase 1. Third-party leasing will only move forward if market rents meet targeted returns on Stanford's investment. Any third-party lease will allow for Stanford to retain design and operating control and eventually to occupy the space. Full build-out of the 35-acre parcel is capped at 1,518,000 sf, as detailed in the Stanford in Redwood City Precise Plan.

The prospective Phase 1 tenants include approximately 2,125 staff from Business Affairs (800), the School of Medicine (SoM) (700), Land, Buildings and Real Estate (LBRE) (200), the Office of Development (150), University Human Resources (100), the Graduate School of Business (GSB) (100), and Libraries (75). The development and subsequent move will free up almost 150,000 sf on campus as well as in the Stanford Research Park; space in the latter will then be re-leased to third-party tenants at market rates, increasing revenues to Stanford.

The new buildings on the Redwood City campus are envisioned to be Class A office buildings with significant sustainable features incorporated throughout the project. Creating usable outdoor space is a key priority.

BIOLOGY/CHEMISTRY/COMPUTER SCIENCE PRECINCT

The long-term vision of a science quad in the Biology/Chemistry/Computer Science Precinct has begun to materialize with the implementation of two key components. A major rehabilitation of the Old Chemistry Building (\$66.7 million) will provide facilities for the new Science Teaching and Learning Center (STLC) when it is completed in early 2016. Design refinements to the proposed Bass Biology Building (\$107 million) are progressing with the objective of presenting the final design to the Board of Trustees later this year.

Joining Gilbert Biology and Gates Computer Science to the south, together with the Lokey Laboratory and Keck Science buildings to the north, the STLC and the Bass Biology Building will anchor the new science precinct. Underground service for the majority of the precinct will be provided through expansion of the existing Gilbert Biology central loading area. This will enhance operational efficiency for

science deliveries and improve safety for pedestrians and bikers, while also preserving land for future development.

Over the longer term, the demolition of the Stauffer I and II buildings will enable the introduction of a central green area that will provide highly valued space for student interactions and departmental collaborations. The site is being carefully planned to allow for the construction of three to four future buildings within the precinct.

Bass Biology Building

The Bass Biology Building will provide laboratory space for approximately half of the department's faculty, staff, and technicians in approximately 123,500 sf of space dedicated to wet-lab biochemistry research and computational research. It will allow the relocation of multiple faculty research programs from various buildings and demolition of the existing Herrin Hall and Herrin Laboratory buildings. The new building will have four stories above grade and one below.

The project includes the central loading dock and demolition of Stauffer III (\$21.1 million) as well as connective elements (\$4.5 million). Construction is anticipated to commence in summer 2016 and be completed in fall 2019.

Science Teaching and Learning Center

The STLC will house teaching laboratories and support spaces available to both students and faculty. In order to develop an activity hub for undergraduate students, the STLC will combine the three existing science libraries and will integrate replacement classrooms and lecture halls within new collaborative study spaces. The new facility will encourage a sense of community for undergraduate students, primarily in the Biology and Chemistry departments.

As part of the project, a 12,700-sf, partially underground addition to the historic Old Chemistry Building will be constructed to house a 300-person auditorium and a 126-person lecture hall. The primary ceremonial east façade on Lomita Mall will be maintained as the main entrance of the building. The west side will feature an events terrace on the roof of the new addition. The terrace will serve as a gathering place for undergraduate interaction as well as a venue for departments to host events.

NEW HOUSING

Although Stanford provides a diverse selection of housing for its students, faculty, and staff, in recent years the

university's need for housing has outpaced its ability to provide new residences on university-owned land. This supply gap impacts Stanford's ability to recruit and retain faculty, and it is expected to widen in the future as potential plans emerge for the expansion of the undergraduate student population. Addressing Stanford's housing needs will necessarily require a multipronged strategy.

Under the Housing Acquisition Initiative (\$200 million), the university will acquire both rental and "for sale" units in strategic locations outside of Stanford's lands. The "for sale" units will be resold to eligible faculty under the university's new restricted ground lease. The rental units will house faculty as they transition to home ownership. Significant demand from Stanford staff is expected to fill any vacant units. The university will benefit from the initiative by controlling units for its own population, moderating rents and faculty purchase prices, creating community, and offering immediate access to vacant units.

As part of the initiative, the university is proceeding with the purchase of the Colonnade (\$130.5 million), a 167-unit complex in Los Altos. Currently under construction, it will offer 100 one-bedroom/one-bath and 67 two-bedroom/two-bath rental apartments only three and a half miles from campus. Stanford will also acquire individual single-family homes as opportunities permit.

The construction of the new California Avenue Faculty Homes (\$162 million), consisting of 68 single-family detached homes and 112 condominium flats, will also help to increase the supply of high-quality affordable housing for Stanford faculty. These housing units will be made available to faculty for purchase at below-market prices through the use of Stanford's restricted ground lease, a model that proved successful when it was introduced with the sale of the Olmsted Terrace Faculty Homes. To facilitate broader lifestyle opportunities and a sense of community, the housing units will be organized around a central park and also offer other gathering and respite areas, children's play equipment, and common fitness and community buildings to residents. Delivery of the first homes is planned for the first quarter of 2017, while the remaining homes will be completed over the following year.

Together with the Manzanita Undergraduate Dorm (128 new beds), which will be completed in midsummer 2015, the undergraduate population will gain two residences as part of the historic Lagunita Court expansion (\$42.8 million). Each of the two four-class residences will provide

108 beds, accommodating undergraduate students and two new resident fellows, as well as necessary program spaces. Occupancy is anticipated in fall 2016.

The construction of Highland Hall (\$75 million), now under way, will add a net 200 beds to the GSB's housing stock when it is completed in summer 2016. The new residence complex, adjacent to the Schwab Residential Center and across Serra Street from the Knight Management Center, will accommodate all first-year single students who desire to live on campus. Highland Hall supports the university's overall need for additional graduate housing.

GROWTH AND TRANSPORTATION ALTERNATIVES

Local and regional traffic congestion is one of the greatest challenges that Stanford, as well as other major employers in our area, faces in terms of growth and change. A "Big Ideas" study for Stanford pointed strongly to a need for continued award-winning transportation demand management (TDM) programs, not only for the campus but also for other Stanford lands, such as the Stanford Research Park and the Stanford Shopping Center. A number of land use planning efforts focused on future growth are now under way. These include a strong emphasis on major circulation patterns and transit system types and on how land use choices can optimize transportation and TDM options.

PARKING AND CIRCULATION

As the core campus grows more dense and the availability of surface parking decreases, campus planners are considering a variety of options for parking and circulation. Measures will be implemented that will respond to the demand for parking, as well as improving traffic and safety for vehicles, bicyclists, and pedestrians. Several projects have commenced or will be under way in the short term that will ultimately transform the campus landscape and roadways. They include the installation of campus roundabouts, the construction of new parking structures, and the extension of Panama Mall.

Roundabouts

With the continued development and expansion of the core campus, it has become critical to develop vehicular circulation, pedestrian safety, and bicycle safety strategies at various intersections. After comparing metrics for four-way

stop signs, traffic signals, and roundabouts, Stanford has developed a plan for a system of roundabouts at intersections along Campus Drive. These roundabouts will enable more efficient vehicular circulation, reduce confusion for both drivers and pedestrians, and transform large asphalt intersections into welcoming landscape features at various campus entrances. The first roundabout conversion, at Escondido Road and Campus Drive, is now complete. Given its success, Stanford is moving forward with three more roundabouts at Campus Drive intersections at Bowdoin, Santa Teresa, and Galvez, with completions planned over the next two years.

Parking Structures

The university's newest parking structure is being constructed under the existing Roble Field. The Roble Field Garage (formerly Parking Structure 10) will provide 1,165 parking stalls. To meet parking demand in this region of campus and to maximize capacity in the structure, it will have five levels rather than the four originally planned. The entrance and exit will be on Via Ortega, and the exit will be right-turn only to minimize traffic on Santa Teresa. A trellis system and associated landscaping will be integrated into three small structures at the corners of the site that will house the elevators, mechanical support, and egress stairs. Roble Field will return to recreational use at grade after the new facility is completed in July 2016.

Future structures will generally be sited along the outer perimeter of the core campus or in the vicinity of the Campus Drive loop. Campus planners are continuing to investigate innovative and efficient strategies for pedestrian circulation within that loop.

Panama Mall and Other Circulation Improvements

As part of the Roble Field Garage project, the Godzilla Modular has been removed, enabling the adjacent extension of Panama Mall. This new segment, consistent with the Campus Long-Range Planning Vision, will link Samuel Morris Way and Governor's Avenue and provide a safer pedestrian and bicycle pathway. This initiative will also close Samuel Morris Way to vehicular traffic, extend Via Ortega between the new Arrillaga Outdoor Education and Recreation Center and the future Roble Field Garage, and result in a future academic building site south of the Yang and Yamazaki Environment and Energy Building.

WATER CONSERVATION

Years before Californians entered into one of the state's worst droughts on record, water conservation has been an essential component of Stanford's sustainability program. Despite continued campus growth, Stanford's award-winning conservation program has reduced potable water use by 21% over the last decade through implementation of a comprehensive set of water saving measures. To reach this result, Stanford implemented hundreds of water conservation projects, including retrofitting plumbing fixtures with low-flow equipment, converting water usage from potable to non-potable where possible (e.g., irrigation and toilet flushing), and incorporating smarter irrigation meters and controllers to improve efficiency in outdoor water use. With the activation of Stanford Energy System Innovations (SESI) on March 24, 2015, Stanford's potable water use will further decrease by 15%, increasing Stanford's total water reduction to 36% over the past 15 years.

While the university already planned and invested in achieving this reduction, Stanford launched a campaign to achieve an additional voluntary 5% overall water reduction. Since January 2014, when Governor Jerry Brown issued a Declaration of Emergency for the State of California due to the prolonged drought, Stanford has completed a detailed analysis of its water consumption to develop a set of measures to voluntarily further reduce water use. The campus water department prepared a Drought Management Plan and launched outreach campaigns to achieve efficiency and additional voluntary measures in recognition that technical fixes can only take the university so far. Raising awareness of water conservation and promoting water-efficient habits are essential. Additionally, on April 1, 2015 the Governor issued an executive order mandating additional water use reduction and regulations from the State Water Resources Control Board that Stanford will incorporate as appropriate into its plan.

THE CAPITAL PLAN, 2015/16-2017/18

Stanford's academic campus, including SoM but excluding the hospitals, has approximately 700 facilities providing nearly 18 million sf of space (including parking structures and housing units). The physical plant has a historical cost of \$8.2 billion and an estimated replacement cost of \$11.4 billion.

The Capital Plan includes a forecast of Stanford's annual programs to restore, maintain, and improve campus facilities for teaching, research, housing, and related activities and outlines Stanford's needs for new facilities. The Capital Plan is compiled, reviewed, and approved in a coordinated manner across the university. The plan carefully balances institutional needs for new and renovated facilities with the challenging constraints of limited development entitlements, available funding, and budget affordability.

Projects listed in the Capital Plan are those approved by the provost. Many are under the purview of the Board of Trustees. Board-level approval is required for any of the following:

- Projects with a total cost of \$10 million and above
- New building construction
- Projects that use 5,000 or more new square feet within the academic growth boundary
- Changes in land use
- Projects with major exterior design changes

Expenditures in the 2015/16-2017/18 Capital Plan, which includes major construction projects in various stages of development and numerous infrastructure projects and programs, total \$2.9 billion. The table below provides a comparison of the current and the last two Capital Plans.

COMPARATIVE CAPITAL PLANS

[IN MILLIONS OF DOLLARS]

	2013/14	2014/15	2015/16
Design/Construction	1,200.9	1,144.1	1,521.9
Forecasted	1,096.4	1,402.0	862.0
Infrastructure and Other	249.4	290.0	514.3
Total	2,546.7	2,836.1	2,898.2

This year's plan is consistent in value with last year's, even with the completion (and therefore exclusion) of SESI, at \$485 million. New projects and scope and corresponding budget increases for existing projects have more than offset this large project activation. Large contributors to the offset include a scope and budget increase for the Stanford in Redwood City project (\$150 million), the addition of the CEC 1 and associated projects (\$230.1 million) and the Housing Acquisition Initiative (\$200 million).

Projects in Design and Construction

Projects in design and construction total \$1.5 billion (52% of the plan). Construction of these projects is contingent upon fundraising of \$150.4 million (10%). This category comprises 13 projects, as shown in the table on page 80.

The cost of projects in design and construction went up by \$377.8 million from 2014/15 as a result of projects advancing from the forecasted category and budget increases, partially offset by project completions. Projects moving from the forecasted to the design and construction stage include Stanford in Redwood City Phase 1 (\$543.7 million), the ChEM-H and Neuro Building (\$252.6 million), the Bass Biology Building and associated projects (\$132.6 million), the Hoover Institution Conference Center Building and connective elements (\$65 million), and the 1651 Page Mill Road Renovation (\$43.3 million). Projects scheduled to be completed in 2014/15 and therefore excluded from the plan include SESI (\$485 million), the McMurtry Building (\$87 million), the Manzanita Undergraduate Dorm (\$23.8 million), the C.J. Huang Building (\$23.2 million), the RAF 1 and RAF 2 Rehabilitation and Retrofit (\$20.6 million), Buildings 520 and 524 Renovation (\$20.5 million), the Stadium Field House (\$14 million), and the Stanford House in Oxford (\$5.2 million).

Forecasted Construction Projects

Forecasted projects are those anticipated to receive Board of Trustees approval over the next three years. These projects total \$862.0 million (30% of the plan) and are listed on page 81. Like those in design and construction, these projects are contingent upon funding. For this group, \$203.7 million (24%) remains to be fundraised and \$154.6 million (18%) has yet to be identified.

Project costs within this category have decreased by \$540 million from 2014/15 as a number of projects have moved into the design and construction category. The decrease was partially offset by the addition of new projects to the Capital Plan. These include the CEC 1 and associated projects (\$230.1 million), Frost Amphitheater Improvements (\$25 million), the Kingscote Renovation (\$16.6 million), Roble Dining Hall Refurbishment (\$12 million), and several smaller projects.

Infrastructure and Other Programs

Stanford's ongoing efforts to renew its infrastructure are reflected in a budget of \$514.3 million (18% of the plan)

and are listed on page 82. New to the Capital Plan is the Housing Acquisition Initiative (\$200 million), which accounts for 89% of the \$224.3 million increase in infrastructure and other program costs from last year's Capital Plan. Infrastructure programs include the Investment in Plant Program (planned maintenance), the Residential & Dining Enterprises (R&DE) Major Renovation Plan, improvements to the High-Voltage (HV) Transmission System, the Capital Utilities Program (CUP), the Stanford Infrastructure Program (SIP), Whole Building Energy Retrofit Program Group 2, upgrades to information technology and communications systems, three Campus Drive roundabouts, storm drainage projects, and General Use Permit (GUP) mitigation. GUP mitigation and SIP projects are funded through construction project surcharges. The other projects are funded by central funds or debt.

INVESTMENT IN PLANT (PLANNED MAINTENANCE) PROGRAM

Annual Investment in Plant assets represent the maintenance funds planned to be invested to preserve and optimize Stanford's existing facilities and infrastructure (e.g., pathways, outdoor structures, and grounds). These projects are based on life cycle planning, the key concept being that life expectancies of facility subsystems are known and, as a result, maintenance schedules can be predicted. The three-year estimated program cost is \$140.7 million.

R&DE MAJOR RENOVATION PLAN

R&DE's program addresses health and safety issues, seismic upgrades, code compliance, energy conservation and sustainability, and major programmatic improvements in the student housing and dining physical plant. Projects anticipated over the next three years total \$41.3 million and include continuation of the code compliance upgrades of various Row Houses, repairs to the Escondido Village slab heating system and infrastructure, life safety upgrades, and bathroom renovations. Completed projects will be maintained through the Stanford Housing, Dining, and Hospitality Asset Renewal Programs.

HIGH-VOLTAGE TRANSMISSION SYSTEM IMPROVEMENTS

The regional HV transmission grid serving Stanford, which is owned and operated by the Pacific Gas & Electric Company (PG&E), has become overloaded over time and is insufficient to serve Stanford's electricity loads under high grid demand conditions. The university's share of the cost to

construct an HV bridge that would provide fully redundant transmission service to Stanford, SLAC, and the City of Palo Alto is \$40.3 million. The new bridge has the potential to save over \$5 million per year in transmission costs.

CAPITAL UTILITIES PROGRAM

The \$33.7 million three-year CUP plan will improve electrical, hot water, water, chilled water, and wastewater utility systems. The CUP covers expansion of systems as required by campus growth (\$19 million) and replacement of systems that are near the end of their useful life (\$14.7 million).

STANFORD INFRASTRUCTURE PROGRAM

SIP consists of campus and transportation projects and programs for the improvement and general support of the university's academic community, hospitals, and physical plant. SIP expenditures are expected to total \$16.8 million over the next three years (excluding funding for replacement parking spaces). SIP projects include campus transit, parking lot infrastructure, and site improvements; landscape design and enhancements; bicycle, cart, and pedestrian

path construction; and lighting, signage, and outdoor art installations.

WHOLE BUILDING ENERGY RETROFIT PROGRAM GROUP 2

This retrofit program seeks to reduce energy consumption in Stanford's largest energy-intensive buildings. The program began in 2003/04 with studies of the top 12 energy-consuming buildings, representing \$15.9 million of energy expenses per year, or nearly 36% of the campus total. It has since been expanded to offer cost-effective, capital-intensive energy retrofit opportunities to additional large energy-consuming buildings. The retrofits completed thus far have delivered annual energy cost savings of \$4.7 million, a discounted payback of less than four years, and PG&E rebates of \$2.3 million.

INFORMATION TECHNOLOGY AND COMMUNICATIONS SYSTEMS

The university's computing and communications systems provide comprehensive data, voice, and video services to

WHOLE BUILDING ENERGY RETROFIT PROGRAM

PROJECT	RETROFIT STATUS	ESTIMATED ANNUAL CONSUMPTION SAVINGS	ACTUAL SAVINGS
Stauffer I - Chemistry	Complete	38%	46%
Gordon & Betty Moore Materials Research ¹	Complete	32%	10%
Paul Allen Center for Integrated Systems (CIS)	Complete	15%	14%
Forsythe (George) Hall	Complete	8%	8%
Stauffer II - Physical Chemistry	Complete	38%	43%
Gates Computer Science	Complete	29%	27%
Beckman Center for Molecular and Genetic Medicine	Complete	46%	32%
Gilbert Biological Sciences	Complete	35%	32%
Cantor Center for Visual Arts	Complete	13%	14%
Bing Wing (Green Library West)	Complete	16%	50%
Packard Electrical Engineering	Complete	26%	37%
Arrillaga Alumni Center	Complete	27%	31%
RAF I	Complete	11%	11%
RAF II ²	Complete	30%	TBD
CIS Distributed Digital Control	Commissioning	5%	
Clark Center	Commissioning	11%	
Mitchell Earth Sciences	Design	50%	
Green Earth Sciences	Design	15%	
Varian Physics Laboratory	Design	24%	
Mechanical Engineering Laboratory	Design	24%	
Lucas Center	Study complete	17%	
Keck Science	Study complete	20%	
Durand	Study complete	10%	
Center for Clinical Sciences Research (CCSR)	Study complete	13%	
Herrin Hall - Biology	Cancelled		

¹ Construction scope reduced from original survey.

² Actual savings to be verified.

the campus community. Over time, these systems must be improved and/or replaced to maintain a consistently high level of service. Additionally, new technologies provide more efficient, faster, and/or more cost-effective solutions. Planned upgrades to these critical university systems total \$13.1 million, including \$2.8 million to upgrade the network backbone and \$1.6 million for a departmental firewall refresh that is required every five years.

CAMPUS DRIVE ROUNDABOUTS

As discussed in more detail on page 68, Stanford plans to construct three additional Campus Drive roundabouts at a cost of \$7 million.

STORM DRAINAGE

The ongoing storm drainage program includes projects for improving and expanding the capacity of the campus storm drainage system, building storm water detention facilities, replacing deteriorated pipes, and improving drainage around buildings. In addition, recently adopted storm water quality regulations necessitate new storm water treatment approaches, such as bioswales and bioretention facilities, to minimize conveyance of contamination from common storms to natural water bodies. These approaches will be incorporated on new building sites, where feasible. The Capital Plan also includes improvements to the storm drainage system in the faculty/staff housing area of campus, adding storm drainage infrastructure where none exists and upgrading existing drainage infrastructure to conventional levels of protection. The three-year estimated program cost is \$5.4 million.

GENERAL USE PERMIT MITIGATION

An internal fee levied on capital projects that increase school/department campus space allocations funds the implementation of Santa Clara County GUP requirements and recommendations, including trails, storm water management, TDM, protection of biological resources, new parking spaces, and other programs. GUP fees also fund projects related to water conservation, water allocation (alternative supplies), and wastewater collection expansion (estimated to cost \$2.2 million over three years).

Other Stanford Entities

In an effort to present a comprehensive view of university-planned construction, the capital planning process has included Stanford Real Estate, Stanford Health Care (SHC),

and Lucile Packard Children's Hospital (LPCH), and SLAC National Accelerator Laboratory. Although the tables at the end of this chapter do not include these entities (with the exception of academic projects managed by Stanford Real Estate), brief descriptions of the Real Estate, SHC, and LPCH capital programs follow. The SLAC capital programs are addressed in Chapter 2, page 50

STANFORD REAL ESTATE

Stanford Real Estate is managing ten projects totaling \$1.2 billion in various stages of planning and development on Stanford lands. Seven of these are commercial real estate investments: the expansion of Stanford Shopping Center (\$29.3 million) with the newly opened Bloomingdale's store; the development of 500 El Camino Real in Menlo Park, a mixed-use project of approximately 440,000 sf, including rental housing and office and retail space (\$258 million); the redevelopment of 1450 Page Mill Road and 3170 Porter Drive, a new Sand Hill Road office project, and the renovation of Stanford Barn, totaling \$138.8 million; and the acquisition of 70 affordable residential rental units in Palo Alto as part of the Mayfield Development Agreement (\$16 million).

The academic projects currently managed by the Real Estate are Stanford in Redwood City Phase 1 (\$543.7 million), discussed in detail on page 66; the California Avenue Faculty Homes (\$162 million) (also part of the Mayfield Development Agreement); and the Kingscote Renovation on the main campus (\$16.6 million).

STANFORD HEALTH CARE AND LUCILE PACKARD CHILDREN'S HOSPITAL

The Stanford University Medical Center (SUMC) Renewal Project includes the development of approximately 1.3 million sf of net new hospital, clinic, and medical office space on the main medical campus and the Hoover Pavilion site. The project received development entitlements from the City of Palo Alto nearly four years ago. Construction of Pavilions 1-4 is well under way, and significant project milestones have been achieved. Major utility upgrades to serve the new medical facilities have been completed along Welch and Quarry Roads, and steel erection is complete for both the new SHC and the LPCH expansion, which are estimated to cost \$2 billion and \$1.1 billion, respectively. Meanwhile, due diligence for a fifth pavilion for SHC is currently under way. On the Hoover Medical Campus, the historic Hoover Pavilion has been fully renovated and upgraded to accommodate modern medicine, a new 1,080-car parking

structure has been completed, and a new 92,500-sf medical office and clinic building just northwest of the original pavilion is scheduled for completion in fall 2015.

Overall Summary

A table summarizing the 2015/16–2017/18 three-year Capital Plan appears on the next page. It includes projects and programs in the design and construction, forecasted, and infrastructure and other categories that are currently active or are anticipated to commence in the next three years.

The expenditures necessary to complete the three-year Capital Plan are anticipated to extend beyond 2017/18. To differentiate between the estimated costs of the plan and the forecasted spending to complete projects and programs, an additional table (Capital Plan Cash Flows) forecasts the Capital Plan expenditure cash flow based on project and program schedules.

O&M and debt service costs for each project will impact the university's operating budget once construction is substantially complete. Although the Capital Plan Summary shows the full budget impacts of all completed projects, it is important to note that these impacts align with the project completion schedule and will therefore be absorbed by the university budget over a period beyond the three-year plan. The Capital Plan Impact on Budget table forecasts these budget impacts by area of responsibility (general funds, formula schools, etc.).

The tables at the end of this chapter provide a detailed list of the projects included in the Capital Plan.

The following sections address Capital Plan funding sources and uses, along with resource constraints.

Capital Plan Funding Sources

As the top chart on page 75 shows, Stanford's Capital Plan relies on several funding sources, including current funds, gifts, and debt. Depending upon fundraising realities and time frames, some projects will prove more difficult than others to undertake. As a result, it is possible that projects in the Capital Plan will have to be cancelled, delayed, or scaled back in scope.

For any projects relying on gifts to be raised, the Office of Development has determined that fundraising plans are feasible, although the time frames for the receipt of gifts

are subject to change. "Resources to be identified" are expected to come from a combination of school, department, and university reserves, as well as other sources.

Uses of Funds by Program Category and Project Type

The middle chart on page 75 divides Capital Plan activity into program categories—academic/research, infrastructure and other, academic support, housing, and athletics/student activities—with the largest categories being academic/research, academic support, and housing at 39%, 24%, and 20% of the plan, respectively. The bottom chart breaks out the same activity into project types, including new construction, infrastructure, and renovations.

Capital Plan Constraints

AFFORDABILITY

The incremental internal debt service expected at the completion of all projects commencing in the three-year plan period (completion dates range from 2015/16 to 2019/20) totals \$63.8 million annually (excluding debt service for bridge financing the receipt of gifts and operating lease payments). Of this amount, \$34.4 million will be serviced by general funds, \$17.2 million directly by formula schools (the GSB and the SoM), and \$12.2 million by auxiliary and other operations. Service center debt is funded through rates paid by customers and has been allocated and included in the totals for general funds, formula schools, auxiliary operations, and other operations.

The additional O&M costs expected at the completion of all projects commencing in the three-year period total \$39 million per year. Of this amount, \$18 million will be serviced by general funds, \$19.5 million by the formula schools, and \$1.5 million by auxiliary and other operations. O&M and debt service on capital projects compete directly with other academic program initiatives.

DEBT CAPACITY

As of May 1, 2015, debt available to finance capital projects and faculty mortgages is estimated at \$1.2 billion, including \$392 million of taxable commercial paper, \$271 million of tax-exempt commercial paper, \$223 million of unexpended tax-exempt bond proceeds, and \$301 million of unexpended taxable bond proceeds. In addition, through fiscal year-end 2014/15 and 2015/16, \$96 million in internal amortization proceeds on debt-funded projects will become available to

SUMMARY OF THREE-YEAR CAPITAL PLAN 2015/16-2017/18

[IN MILLIONS OF DOLLARS]

	ESTIMATED PROJECT COST	CAPITAL BUDGET 2015/16	CURRENT FUNDS ¹	PROJECT FUNDING SOURCE						ANNUAL CONTINUING COSTS	
				GIFTS		UNIVERSITY DEBT		RESOURCES TO BE IDENTIFIED ²		DEBT SERVICE	OPERATIONS & MAINTENANCE ³
				IN HAND OR PLEDGED	TO BE RAISED	SERVICE CENTER/ AUXILIARY DEBT	ACADEMIC DEBT	OTHER			
Projects in Design & Construction	1,521.9	529.1	317.3	197.9	150.4	208.1	648.2			42.2	32.9
Forecasted Projects	862.0	57.6	90.1	19.2	203.7	97.7	87.2	209.5	154.6	11.2	6.0
Total Construction Plan	2,383.9	586.7	407.4	217.1	354.1	305.8	735.4	209.5	154.6	53.4	38.9
Infrastructure and Other	514.3	187.3	266.7			118.3	129.3			10.4	0.1
Total Three-Year Capital Plan 2015/16-2017/18	2,898.2	774.0	674.1	217.1	354.1	424.1	864.7	209.5	154.6	63.8	39.0

¹ Includes funds from university and school reserves and the GUP and SIP programs.

² Anticipated funding for this category is through a combination of school, department and university reserves and other sources.

³ Operations & Maintenance includes planned and reactive/preventative maintenance, zone management, utilities, contracts, grounds and outdoor lighting.

CAPITAL PLAN CASH FLOWS

[IN MILLIONS OF DOLLARS]

	2014/15 & PRIOR	2015/16	2016/17	2017/18	2018/19 & THEREAFTER	TOTAL
Projects in Design & Construction	229.1	529.1	523.1	206.4	34.1	1,521.9
Forecasted Projects	13.1	57.6	153.1	202.9	435.4	862.0
Total Construction Plan	242.2	586.7	676.2	409.3	469.5	2,383.9
Infrastructure and Other	43.1	187.3	209.8	74.2		514.3
Total Capital Plan Cash Flows	285.3	774.0	886.0	483.5	469.5	2,898.2

CAPITAL PLAN IMPACT ON BUDGET

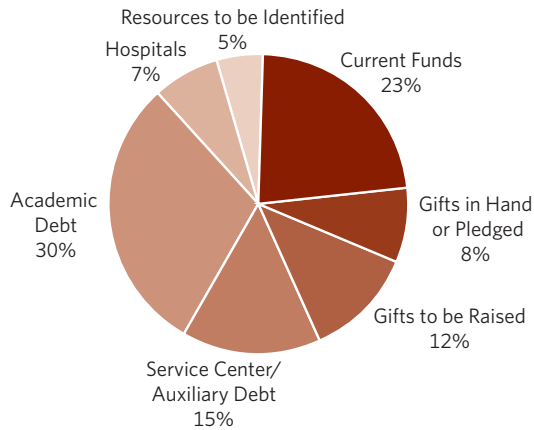
[IN MILLIONS OF DOLLARS]

	2016/17	2017/18	2018/19 & THEREAFTER	TOTAL
Debt Service				
General Funds	3.6	2.2	28.5	34.4
Formula and Other Schools	4.2	0.7	12.3	17.2
Auxiliary	3.5	1.8	5.7	10.9
Other ¹	0.4	0.6	0.3	1.3
Total Debt Service	11.7	5.3	46.8	63.8
Operations and Maintenance				
General Funds	3.3		14.7	18.0
Formula and Other Schools	2.6	1.2	15.7	19.5
Auxiliary	0.3		0.1	0.4
Other ¹	1.1			1.1
Total Operations and Maintenance	7.3	1.2	30.5	39.0

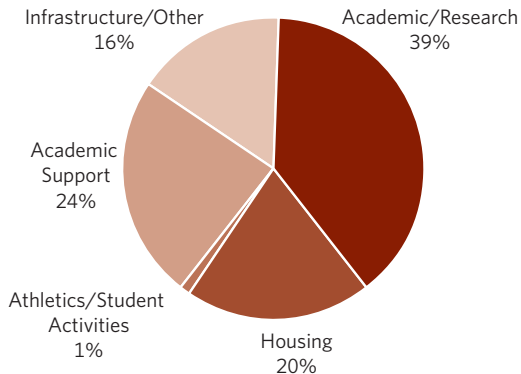
¹ Primarily the hospitals along with Forsythe facility, Faculty Staff Housing, and outside entities.

**THE CAPITAL PLAN
2015/16–2017/18:
\$2.9 BILLION**

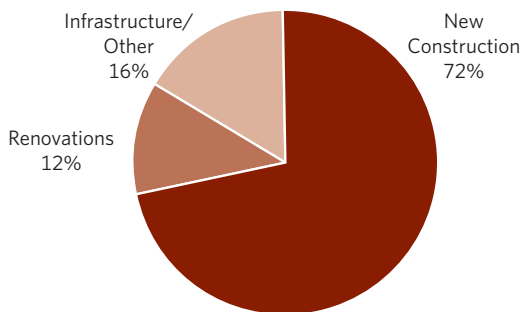
Sources of Funds



Uses of Funds by Program Category



Uses of Funds by Project Type



lend to projects, and \$210 million in forecasted pledge and other payments will retire debt issued to bridge finance the receipt of gifts and cost of construction.

The three-year Capital Plan will require a total of \$1.5 billion of debt for projects under construction or for projects to be approved in or before 2015/16:

- \$559 million to complete projects already approved or under construction;
- \$690 million for projects to be approved in 2015/16; and
- \$248 million to bridge finance the receipt of gift pledges for projects approved or under construction.

Additional debt may be required to finance the Faculty Staff Housing program. As of May 1, 2015, the portfolio of debt-subsidized mortgages had increased by \$9 million to \$420 million.

Projects identified in the three-year Capital Plan and to be approved after 2015/16 will require an additional \$312 million in debt. Debt for these projects has not been committed, and allocations will be evaluated in the context of debt capacity, affordability, viability of the funding plan, and GUP limitations.

ENTITLEMENTS

The Stanford campus encompasses 8,180 acres in six jurisdictions. Of this total, 4,017 acres, including most of the central campus, are within unincorporated Santa Clara County.

In December 2000, Santa Clara County approved a GUP that allows Stanford to construct up to 2,035,000 additional gross sf of academic-related buildings on the core campus, up to 2,372 new student housing units, and 646 housing units for postdoctoral fellows, medical residents, faculty, and staff.

Conditions of approval included the following:

- Creation of an academic growth boundary to limit the buildable area to the core campus for a minimum of 25 years;
- Approval of a sustainable development study (SDS) before new construction exceeds 1 million gross sf (Santa Clara County approved the SDS in April 2009); and
- Construction of 605 units of housing for each 500,000 gross sf of new academic building.

Given the stringent requirements imposed by the GUP and the increasingly difficult entitlement environment, Stanford carefully manages the allocation of new growth. Construction through 2013/14 accounted for 1.44 million GUP sf. This year's Capital Plan forecasts utilization of 370,179 GUP sf, net of demolitions. With the completion of planned housing projects, including the Highland Hall graduate residences and the Lagunita and Manzanita undergraduate housing, Stanford will have added 2,437 net new housing linkage units since approval of the GUP. This will enable the total new academic and academic support space allowed under the GUP to reach nearly 2 million gross sf.

THE CAPITAL BUDGET, 2015/16

At \$774 million, the 2015/16 Capital Budget reflects only a portion of the costs of the projects in the Capital Plan, as most of them span more than one year. The table below

MAJOR CAPITAL PROJECTS - PERCENT OF COMPLETION 2015/16¹

[IN MILLIONS OF DOLLARS]

	CAPITAL BUDGET 2015/16	ESTIMATED PROJECT COST	ESTIMATED PERCENT COMPLETE 2015/16
Stanford in Redwood City Phase 1	170.0	543.7	31%
Stanford ChEM-H and the Stanford Neurosciences (Neuro) Institutes	43.5	252.6	24%
California Avenue Faculty Homes (180 units)	103.5	162.0	67%
Anne T. and Robert M. Bass Biology Research Building	13.3	132.6	13%
Highland Hall (200 net new beds)	52.7	75.0	100%
Science Teaching and Learning Center (Old Chemistry)	28.6	66.7	100%
Hoover Institution Conference Center and Office Building	24.2	65.0	56%
Roble Field Garage (1165 spaces)	19.1	50.5	100%
408 Panama Mall Office Building	20.4	49.7	100%
1651 Page Mill Road Renovation	18.8	43.3	100%
New Residences at Lagunita Court (216 new beds)	19.7	42.8	100%
Roble Gymnasium Renovation	11.1	28.0	100%
Total	525.1	1,511.9	

¹ Includes projects scheduled to be in construction and with forecasted expenditures greater than \$10 million in 2015/16.

highlights the major capital projects for which expenditures under the 2015/16 Capital Budget will be significant, as well as the percentage of each project expected to be complete by the end of 2015/16. The map on page 79 shows visually where these projects will take place.

In 2015/16, LBRE anticipates substantial completion of seven projects with total budgets of \$356 million and estimated 2015/16 expenditures of \$170.4 million. Highland Hall is a new residential complex that will provide 200 additional beds for GSB students. The rehabilitation of and addition to the Old Chemistry Building will house teaching laboratories and support spaces for the STLC. The Roble Field Garage will provide 1,165 stalls to address parking needs in the west campus area. The 408 Panama Mall Office Building will consolidate a number of smaller administrative and academic units into permanent space and enable the demolition or repurposing of several modular buildings. The renovation of a Stanford Research Park building at 1651 Page Mill Road will be for use by the SoM. The addition of two new residences at Lagunita Court will add 216 new beds for undergraduate students. Finally, the Roble Gymnasium will be renovated for the drama and dance programs.

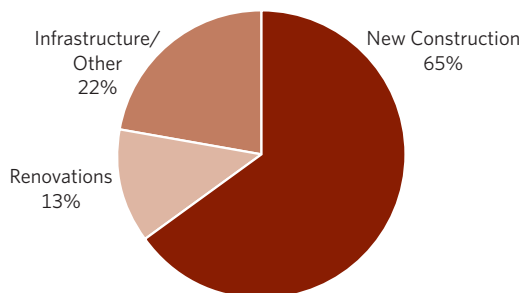
Sources and Uses

The Capital Budget is supported by multiple funding sources: current funds (which include the Capital Facilities Fund [CFF], funds from university and school reserves, and GUP and SIP fees), gifts, and debt. The university typically allocates CFF or debt funding to projects in the absence of other available funding. The timing of gift receipts, which may be bridge financed, will affect the mix of project funding.

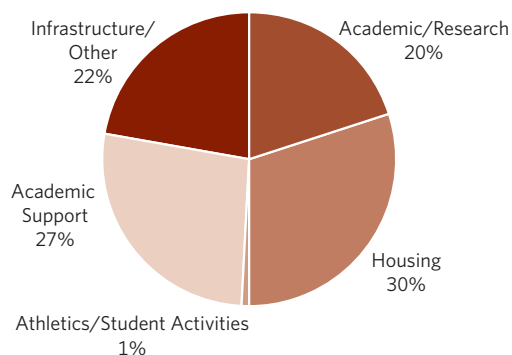
The pie charts on the next page show the uses of funds under the \$774 million Capital Budget by project type and program category. Anticipated expenditures of \$236.3 million (30%) for housing projects include the California Avenue Faculty Homes, Highland Hall, the new residences at Lagunita Court, and the Housing Acquisition Initiative. Academic/Support projects, forecasted at \$209.1 million (27%), include Stanford in Redwood City and the 408 Panama Mall Office Building. Infrastructure and other program investment of \$167.1 million (22%) includes the Roble Field Garage, Investment in Plant (planned maintenance), R&DE Major Renovation Plan projects, HV transmission system improvements, and CUP. Academic/Research projects, forecasted at \$155.6 million (20%) include the ChEM-H

THE CAPITAL BUDGET 2015/16
\$774.0 MILLION

Uses of Funds by Project Type



Uses of Funds by Program Category



and Neuro Building, the Bass Biology Building, the STLC, the Hoover Institution Conference Center Building, and the renovations of 1651 Page Mill Road and Roble Gymnasium. Lastly, expenditures for Athletics/Student Activities projects are forecasted at \$5.9 million (1%).

In June 2007, the Board of Trustees approved an increase in the target endowment payout rate from 5.0% to 5.5%. The additional payout releases unrestricted funds, which are held in the CFF to support major facilities projects.

Annual transfers to the CFF are projected to be \$108.8 million in 2014/15 and \$114.5 million in 2015/16, with corresponding commitments of \$90.3 million and \$85.1 million for these two years. The table above lists

CAPITAL FACILITIES FUND (CFF)

Funding Sources and Committed Uses of Funding

[IN MILLIONS OF DOLLARS]

	2014/15	2015/16
Sources of Funding		
Formula Units		
School of Medicine	15.1	16.2
Hoover Institution	4.2	4.4
President's Funds	10.1	10.4
Non-Formula	79.4	83.5
Total Funding	108.8	114.5
Committed Uses of Funding		
Biomedical Innovation I Building	5.0	
Stone Complex Seismic Bracing	4.5	5.0
School of Medicine Building Maintenance	3.7	3.9
Bioengineering/Chemical Engineering Building	1.9	
855 California Ave TI		2.4
3145 Porter Drive PD2		2.2
Other School of Medicine Strategic Projects		2.8
Hoover Institution Project	4.2	4.4
Projects Funded by President's Funds	10.1	10.4
Formula Units and President's Funds Project Subtotal	29.4	31.0
Bass Biology Research Building	14.0	
Stanford ChEM-H and Neuro Building	10.4	47.4
SLAC Photon Sciences Lab Building	10.0	
Meyer Library Demolition	8.0	
Stanford in Redwood City Phase 1	3.0	
Other Non-Formula Units Projects	15.5	6.6
Total Commitments	90.3	85.1
Annual Funding less Commitments	18.5	29.5
Balance at Beginning of Year	28.0	46.5
Uncommitted Balance	46.5	76.0

projects anticipated to receive CFF funding in 2014/15 and 2015/16.

In general, non-formula CFF funds are allocated to projects that are difficult to support through restricted sources; these allocations thus reduce the call for debt serviced by general funds. Since the beginning of the program in 2007/08, non-formula CFF funds have provided \$336.8 million in funding support for over 60 projects and programs. The formula units determine uses of their CFF funds according to their highest priorities.

CAPITAL BUDGET IMPACT ON 2015/16 OPERATIONS

The 2015/16 Consolidated Budget for Operations includes incremental debt service and O&M expenses for projects to be completed in 2015/16 or in 2014/15 but operational for less than 12 months that year.

Capital projects requiring debt are funded from internal loans that are amortized over the asset life in equal installments (principal and interest). The budgeted interest rate (BIR) used to calculate the internal debt service is a blended rate of interest expense on debt issued for capital projects, bond issuance, and administrative costs. The BIR is expected to remain at 4.25% for 2015/16.

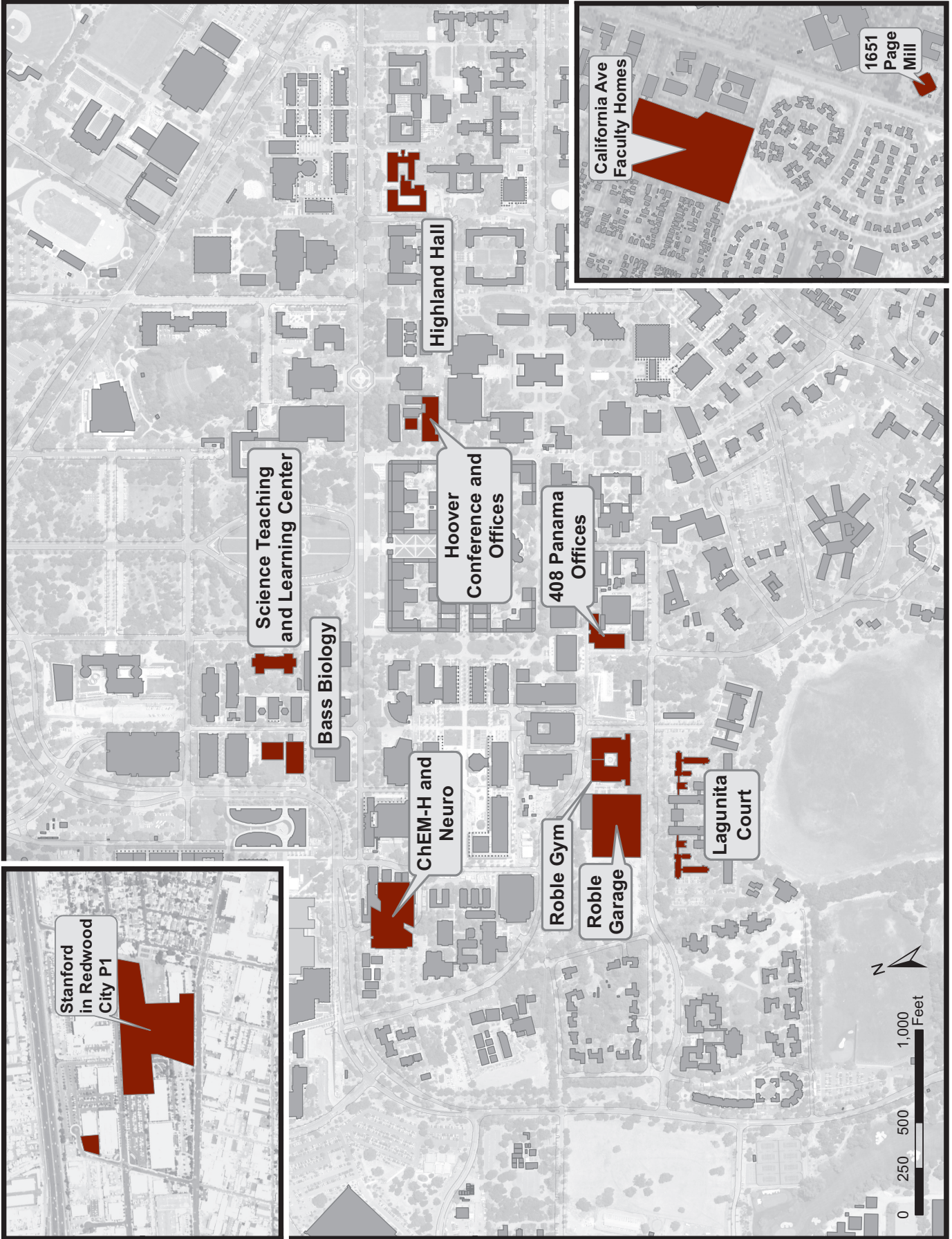
The projected incremental internal debt service funded by unrestricted funds, including formula unit funds, in 2015/16 is \$5.1 million. This amount includes additional debt service on the 1651 Page Mill Road Renovation, the 408 Panama Mall Office Building, and smaller capital projects and programs. It is offset by decreases in bridge financing as scheduled payments or gift pledges are made for several university buildings. This additional debt service brings the total annual internal debt service borne by the unrestricted budget to \$60.3 million.

Consolidated internal debt service, including that borne by formula units, auxiliaries, service centers, Faculty Staff Housing, and real estate investment, is projected to decrease from \$203.4 million to \$193.0 million. Additional debt service related to the Rosewood Hotel and Office Complex is not included in the Consolidated Budget for Operations. In addition, annual lease payments for rental properties, largely occupied by the SoM, are projected to be \$27.2 million in 2015/16.

In 2015/16, the university will incur about \$3 million of incremental O&M costs related to a number of new academic and administrative facilities. They include \$1.2 million for the Lathrop Library, \$979,000 for the McMurtry Building, \$730,000 for the Science Teaching and Learning Center, \$360,000 for the C.J. Huang Building, \$260,000 for the 408 Panama Mall Office Building, \$164,000 for the Roble Field Garage, \$120,000 for the Manzanita Undergraduate Dorm, and \$105,000 for the Stock Farm Childcare Facility. These costs will be partially offset by planned demolitions of Meyer Library, Cummings Art Building, and Stauffer III Building.

CAPITAL PLAN PROJECT DETAIL

The tables on the following three pages show capital projects in three categories: projects in design and construction, forecasted construction projects, and infrastructure projects and programs.



**2015/16-2017/18 CAPITAL PLAN
PROJECTS IN DESIGN & CONSTRUCTION**

[IN MILLIONS OF DOLLARS]

	SCHOOL/ DEPARTMENT	FISCAL YEAR PROJECT SCHEDULE	ESTIMATED PROJECT COST	CAPITAL BUDGET 2015/16	CURRENT FUNDS ¹	PROJECT FUNDING SOURCE				ANNUAL CONTINUING COSTS		
						GIFTS		UNIVERSITY DEBT		RESOURCES TO BE IDENTIFIED ²	DEBT SERVICE	OPERATIONS & MAINTENANCE ³
						IN-HAND OR PLEGDED	TO BE RAISED	SERVICE CENTER/ AUXILIARY DEBT	ACADEMIC DEBT			
Stanford in Redwood City Phase 1	PRES/PROV	2015-19	543.7	170.0	5.9			18.3	519.5		32.7	14.1
Stanford ChEM-H and the Stanford Neurosciences (Neuro) Institutes	DOR	2015-18	252.6	43.5	127.6		125.0					7.1
California Avenue Faculty Homes (180 units) ⁴	LBRE	2013-18	162.0	103.5				162.0				
Anne T. and Robert M. Bass Biology Research Building	H&S	2014-19	107.0	9.7	39.5		7.9		10.7		0.7	3.5
Bass Biology Building	H&S	2014-19	4.5	0.4								
Connective Elements	H&S	2015-18	21.1	3.2	1.1				20.0		1.2	(0.2)
Central Loading Dock and Stauffer III Demolition	GSB	2014-16	75.0	52.7	15.0		14.0		30.0		1.8	2.1
Highland Hall (200 net new beds)	H&S	2013-16	66.7	28.6	28.9		3.5		4.3		0.3	2.0
Science Teaching and Learning Center (Old Chemistry)												
Hoover Institution Conference Center and Office Building	HOOVER	2015-17	57.5	21.4				57.5				1.2
Conference Center Building	HOOVER	2015-17	7.5	2.8				7.5				
Connective Elements	LBRE	2014-16	50.5	19.1	50.5							1.1
Roble Field Garage (1165 spaces)								18.5	31.2		1.9	1.2
408 Panama Mall Office Building	PRES/PROV	2013-16	49.7	20.4	10.8				32.5		2.0	0.5
1651 Page Mill Road Renovation	SOM	2014-16	43.3	18.8				15.0	27.8		1.7	0.3
New Residences at Lagunita Court (216 new beds)	R&DE	2013-16	42.8	19.7	28.0							
Roble Gymnasium Renovation	H&S	2014-16	28.0	11.1								
Durand Renovation - Phase 4	SOE	2008-17	10.0	4.1	10.0							
Subtotal - Projects in Design & Construction			1,521.9	529.1	317.3		150.4	197.9	208.1	648.2	42.2	32.9

¹ Includes funds from university and school reserves and the GUP and SIP programs.

² Anticipated funding for this category is through a combination of school, department and university reserves and other sources.

³ Operations & Maintenance includes planned and reactive/preventive maintenance, zone management, utilities, contracts, grounds and outdoor lighting.

⁴ California Avenue Faculty Homes debt will be paid off by sales proceeds.

**2015/16-2017/18 CAPITAL PLAN
FORECASTED CONSTRUCTION PROJECTS**

[IN MILLIONS OF DOLLARS]

	SCHOOL/ DEPARTMENT	FISCAL YEAR PROJECT SCHEDULE	ESTIMATED PROJECT COST	CAPITAL BUDGET 2015/16	CURRENT FUNDS ¹	GIFTS			PROJECT FUNDING SOURCE			ANNUAL CONTINUING COSTS		
						IN HAND OR PLEGDED	TO BE RAISED	SERVICE CENTER/ AUXILIARY DEBT	UNIVERSITY DEBT	ACADEMIC DEBT	OTHER	RESOURCES TO BE IDENTIFIED ²	DEBT SERVICE	OPERATIONS & MAINTENANCE ³
Clinical Excellence Center 1 (CEC1) ⁴	SOM	2016-20	166.0	6.2							166.0			2.0
Building	SOM	2016-20	56.6	2.1	20.6						36.0			1.2
Underground Parking (1058 spaces)	SOM	2016-20	7.5	0.3							7.5			0.2
Replacement Child Care Facility	SOM	2016-20	200.8	2.2	25.4	150.0								4.2
Biomedical Innovation Building and Tunnel (on former FIM 1 site)	SE3	2017-20	128.1	1.3								25.4	1.5	4.2
Earth, Energy & Environmental Sciences Building	R&DE	2015-18	54.7	8.5				54.7				40.0	2.4	3.7
Rains Houses Renovations (Phases 1B, 1C, 2A - 2F)	HOOVER	2016-18	35.0	1.9									3.3	
Hoover Campus Renovations	R&DE	2017-18	31.0	2.3				31.0					1.9	
Governor's Corner Renovation - Sterling Quad (Phases 1&2)	PRES/PROV	2015-17	25.0	1.8		25.0								
Frost Amphitheater Improvements	DOR	2016-19	17.6	1.0								17.6	1.1	0.4
Environmental Health & Safety Facility Expansion	DOR	2016-18	17.0	0.7	3.0	8.5	5.5							0.4
Encina Renovation (FSI International Initiative)	DOR	2016-19	17.0	0.4	17.0									0.4
Public Safety Building	PRES/PROV	2016-17	16.6	7.4										
Kingscote Renovation	LBRE	2016-17	13.1	0.7	8.9	4.2					16.6			(6.6)
Demolition of Herrin Lab/Herrin Hall/Organic Chem/Mudd	H&S	2016-20	12.0	5.5									0.7	
Roble Dining Hall Refurbishment	R&DE	2016-17	10.0	4.6	10.0			12.0						
Schwab Residential Center Renovations	GSB	2016-17	9.0	3.9										
Home of Champions and Hall of Fame Area Relocation	DAPER	2016-17	8.6	0.5	2.2	6.4	9.0							
Cubberley Building Seismic Renovation Phase 2	GSE	2016-18	7.8	2.0		0.1	7.7							0.1
Golf Course Redesign and Program Improvements	DAPER	2014-19	6.5	0.2			6.5							
Crown Quadrangle Renovation-Second Floor and Basement	SLS	2016-18	6.3	0.3										0.1
New Child Care Facility	UHR	2016-18	5.6	1.4	1.4							4.2	0.3	0.1
Forsythe Data Center Phase 4 Power and Cooling Upgrade	BA	2013-17	5.6	1.4										
Geballe Laboratory for Advanced Materials (GLAM)	DOR	2016-18	5.6	0.2	1.6									0.3
Infill Building	H&S	2016-17	4.6	2.1										
Building 60 Physics Teaching Lab	H&S	2016-17	4.6	2.1										
Subtotal - Forecasted Projects			862.0	57.6	90.1	19.2	203.7	97.7	87.2	209.5	154.6	11.2	6.0	
SUBTOTAL - CONSTRUCTION PLAN			2,383.9	586.7	407.4	217.1	354.1	305.8	735.4	209.5	154.6	53.4	38.9	

¹ Includes funds from university and school reserves and the GUP and SIP programs.

² Anticipated funding for this category is through a combination of school, department and university reserves and other sources.

³ Operations & Maintenance includes planned and reactive/preventive maintenance, zone management, utilities, contracts, grounds and outdoor lighting.

⁴ Anticipated funding from SHC and LPCH.

**2015/16-2017/18 CAPITAL PLAN
INFRASTRUCTURE AND OTHER**

[IN MILLIONS OF DOLLARS]

	SCHOOL/ DEPARTMENT	FISCAL YEAR PROJECT SCHEDULE	ESTIMATED PROJECT COST	CAPITAL BUDGET 2015/16	CURRENT FUNDS ¹	PROJECT FUNDING SOURCE				ANNUAL CONTINUING COSTS			
						IN-HAND OR PLEGDED	GIFTS TO BE RAISED	SERVICE CENTER/ AUXILIARY DEBT	UNIVERSITY DEBT ACADEMIC DEBT	OTHER	RESOURCES TO BE IDENTIFIED ²	DEBT SERVICE	OPERATIONS & MAINTENANCE ³
Housing Acquisition Initiative	LBRE	2015-17	200.0	44.1	100.0				100.0				
Investment in Plant (Planned Maintenance)													
Non-Formula/Admin	LBRE	2016-18	57.8	20.7	57.8								
Formula	SOM	2016-18	19.8	6.4	19.8								
R&DE (SHARP/DARP/HARP) ⁴	R&DE	2016-18	53.3	15.7	53.3								
DAPER	DAPER	2016-18	9.8	9.8	9.8								
Subtotal-Investment in Plant (Planned Maintenance)			140.7	52.6	140.7								
R&DE Major Renovation Plan ⁴	R&DE	2016-18	41.3	26.9		41.3						2.5	
High Voltage Transmission System Improvements	LBRE	2015-17	40.3	25.0		40.3						2.5	
Capital Utilities Program (CUP)													
System Expansion	LBRE	2016-18	19.0	7.5		19.0						1.2	
System Replacement	LBRE	2016-18	14.7	6.4		14.7						0.9	
Subtotal-CUP			33.7	13.9		33.7						2.1	
Stanford Infrastructure Program (SIP)	LBRE	2016-18	16.8	5.7	16.8								
Whole Building Energy Retrofit Program Group 2	Various	2016-18	13.8	7.2					13.8			1.0	
Information Technology and Communications Systems	BA	2016-18	13.1	5.5				3.0	10.1			1.8	
Campus Drive Roundabouts													
Bowdoin	LBRE	2015-16	2.0	1.0	2.0								
Santa Teresa	LBRE	2015-16	2.0	1.0	2.0								
Galvez	LBRE	2016-17	3.0	2.0	3.0								
Storm Drainage	LBRE	2016-18	5.4	1.9					5.4			0.5	0.1
GUP Mitigation Water-Related Programs	LBRE	2016-18	2.2	0.5	2.2								
Subtotal - Infrastructure and Other			514.3	187.3	266.7			118.3	129.3			10.4	0.1
TOTAL CAPITAL PLAN			2,898.2	774.0	674.1	217.1	354.1	424.1	864.7	209.5	154.6	63.8	39.0

¹ Includes funds from university and school reserves and the GUP and SIP programs. Also includes Tier II contribution for the Housing Acquisition Initiative.

² Anticipated funding for this category is through a combination of school, department and university reserves and other sources.

³ Operations & Maintenance includes planned and reactive/preventive maintenance, zone management, utilities, contracts, grounds and outdoor lighting.

⁴ R&DE Major Renovation Plan projects generally includes program and code upgrades vs. Planned Maintenance which includes subsystem replacement.