DECKER

University of Illinois

BUDGET REQUEST FOR OPERATING AND CAPITAL FUNDS

FISCAL YEAR 1981

PREPARED FOR PRESENTATION TO THE
BOARD OF TRUSTEES
SEPTEMBER 20, 1979

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PREFACE

I am pleased to present to the members of the Board of Trustees for your review and approval the operating and capital budget requests for Fiscal Year 1981. These requests, which will be the last budget documents to be presented to you by me, reflect the results of almost a full year's work, including several discussion sessions in which you participated. It is my view that few boards--be they involved with public agencies or with private corporations--are provided with the amount of budget information and take the time to review and to discuss that information to the extent that you are and do as you approach the approval of an annual budget request. One of the great accomplishments of our years of working together has been the development of a budget review process appropriate to a new era of complexity and of accountability in fiscal affairs. I commend you and our budget planning and development people for the efforts which have gone into the creation of this process.

The operating budget request for FY 1981 is presented in a time of real economic uncertainty. The interrelated problems of energy and of inflation plus persistent indications of a recession create major public finance issues. The request attempts to deal with these issues and with the needs of the University in realistic ways. It is one of our leadership tasks in Illinois to present budget requests which are real working documents rather than public relations materials. The credibility of this Board and of the administration of the University is a crucial factor in the achievement of financial support. This request for FY 1981 continues our efforts to be both vigorous in achieving support and realistic in assessing resources from which that support must come.

The capital budget request for FY 1981 also poses difficult problems--particularly with regard to the emphasis to be given to energy-related projects. Regardless of final decisions for 1981, it is clear that major steps to create savings in energy usage must be taken soon.

I will not review here any further details of these FY 1981 requests. I and my colleagues believe that the requests are appropriate and attainable. I have appreciated your strong support of our budget requests over the years, and I know that President-elect Ikenberry will be the beneficiary of that support during the years ahead.

John E. Corbally
President

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PART I

INTRODUCTION TO THE OPERATING AND CAPITAL BUDGET REQUESTS FISCAL YEAR 1981

Fiscal Year 1980 in Perspective

The introduction to the Budget Request for Fiscal Year 1980--the beginning of a new decade--contained a brief review of major trends affecting the University of Illinois during the preceding two decades. The immense growth of the 1960's in virtually every significant category--more students, more faculty and staff, more facilities, more funds--was followed by reduced growth rates in the 1970's coupled with persistent inflation and a decline in the share of State General Revenue funds available for higher education. The 1970's were seen as ending with several hopeful signs that funding difficulties might be easing:

1. A greater share of General Revenue Funds was made available to higher education.
2. For FY 1979, the salary increase percentage for the University of Illinois was the highest among Big Ten institutions.
3. Deficiencies in library acquisitions and in equipment were recognized, and funds made available to begin the recovery process.
4. In both FY 1978 and 1979 funds began to be available for new or expanded program efforts in areas other than the health professions.
5. Improvement in retirement funding was accomplished.

At the same time, evidence of continuing financial stringency remained, caused most directly by inflation. The most disturbing aspect of this continuing stringency is its impact upon salaries for faculty and staff. The need to improve the University's salary standing has been recognized, but real improvement has been blunted as inflation increases have equaled or exceeded salary increases.

Ironically, the budget results for Fiscal Year 1980 can be viewed as continuing both the hopeful prognosis for improvement and the distressing possibility of further erosion of financial strength. On the positive side are these major accomplishments:

1. For higher education in total, the share of General Revenue Funds available has remained at the same level as in FY 1979, as shown in Figure 1 (13.0% in both years).

FIGURE 1

PERCENT OF GENERAL REVENUE FUNDS ALLOCATED TO HIGHER EDUCATION

SOURCE: GOVERNOR'S BUDGET FOR EACH FISCAL YEAR
FY 1979 ESTIMATED DATA
FY 1980 RECOMMENDED DATA

2. For the University of Illinois, the total incremental appropriation of $31,279,300 for FY 1980 represents 10.8% of the FY 1979 base--an increase greater than that received in FY 1979 and the second highest in the past 10 years, as shown in Table 1. This increment includes a special supplement of $2,561,700 for the Division of Services for Crippled Children, which is considered to be in the "Special Services" category, outside the core operations of the University. Even when this supplement is removed, the increase over FY 1979 is 9.9%.
3. Funds were received to permit the granting of salary increases averaging 7.5%. Although official data for other institutions in the Big Ten are not yet available for comparative purposes, it appears from an informal review of expected average increases at other institutions that the University of Illinois increase will be above the average increase granted within the Big Ten.
4. In addition to continuing efforts begun in 1979 to provide funds for library acquisition needs and to make modest progress in recovery from the equipment deficiency, a significant amount--$1,225,400--was received to begin recovery from deficiencies in the operation and maintenance of the physical plants at all campuses.
5. The University received $6,008,400 for Programmatic and Special Components and $1,467,500 for Health Professions, representing 19.2% and 4.7% of the FY 1980 Increment respectively, as shown in Table 1. These amounts represent significant contributions toward maintaining the overall vitality of the institution.

These facts demonstrate that the State has recognized that some erosion of the base built at the University of Illinois during the 1960's occurred during the budgetary constraints of the 1970's, and has taken direct action to aid in the recovery from that erosion. On the other hand, a rate of inflation higher than expected has retarded the recovery and blunted to some extent the full significance of the deficiency assistance and new program funds which have been provided.

TABLE 1

FY 1971-80 STATE INCREMENTAL FUNDS RECEIVED BY THE UNIVERSITY OF ILLINOIS

(GENERAL REVENUE, INCOME, AND AGRICULTURAL PREMIUM FUNDS
EXCLUDING RETIREMENT, IBA AND CAPITAL GRF)
(DOLLARS IN THOUSANDS)

COMPONENT	FY 1971	FY 1972	FY 1973	FY 1974	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980
PREVIOUS YEAR'S BASE	$159,011.5	$178,901.0	$179,061.1	$188,698.0	$198,381.5	$218,424.5	$235,375.1	$250,019.4	$265,925.8	$290,681.4
NET INCREMENT	19,889.5	160.1	9,233.8	9,683.0	20,043.1	16,950.7	14,644.3	16,140.0	24,755.6	31,279.3
NET INCREMENT AS A PERCENT OF PREVIOUS YEAR'S BASE	12.5%	0.1%	5.2%	5.1%	10.1%	7.8%	6.2%	6.5%	9.3%	10.8%
CONTINUING COMPONENTS	10,818.0	160.1	6,859.8	6,191.3	12,680.0	14,230.7	14,488.0	12,347.1	21,422.9	23,803.4
PERCENT OF TOTAL INCREMENT	54.4%	100.0%	74.3%	63.9%	63.3%	84.0%	98.9%	76.5%	86.5%	76.1%
PROG. & SPEC. COMPONENTS	6,746.0		649.1	352.5	1,586.1	1,220.0	156.3	2001.4	1,859.7	6,008.4
PERCENT OF TOTAL INCREMENT	33.9%		7.0%	3.6%	7.9%	7.2%	1.1%	12.4%	7.5%	19.2%
HEALTH PROFESSIONS	2,325.5		1,724.9	3.139.2	5,777.0	1,500.0		1,791.5	1,473.0	1,467.5
PERCENT OF TOTAL INCREMENT	11.7%		18.7%	32.4%	28.8%	8.8%		11.1%	6.0%	4.7%

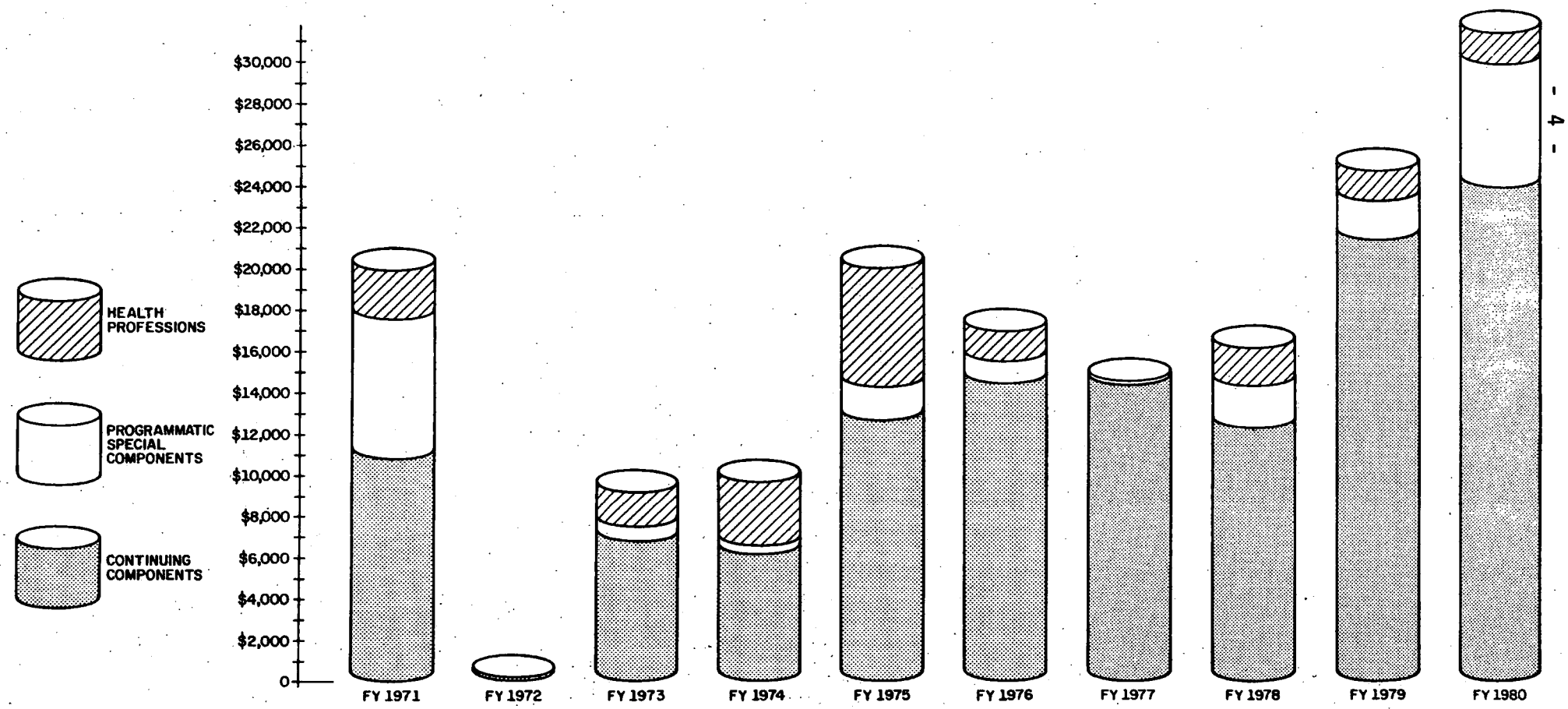

Table 2 provides evidence of the impact of inflation on both personal services and general expense items. Note, for example, that while the Consumer Price Index has risen at a compounded rate of 46.8% for personal services between FY 1975 and FY 1979, the University has been able to grant average salary increases which have risen at a compounded rate of 33.4% for most faculty and staff, and 38.5% for lower paid staff during the same period. Note also that inflation's effects have been equally severe on goods and services. When weighted to reflect the general mix of goods and services the University must purchase, the Consumer Price Index shows a compounded increase of 55.3% in the period between FY 1975 and 1979, while the University's average increase for these items has risen at a compounded rate of 47.8%. Special price increases granted for utilities and library acquisitions in recent years have helped to offset this trend.

Beyond the general impact of increased inflation looms a particular problem which presents potentially severe immediate difficulties: the cost of energy resources. The dimensions of the nation's energy dilemma are well known, and affect every individual and organization in the country. The University's most immediate problem will be to provide sufficient utilities resources to keep the plants in operation within the boundaries of the FY 1980 appropriation. Costs for all utilities have risen, with the sharpest increase in fuel oil. Hardest hit has been the Urbana-Champaign campus, which burns the #2 grade of fuel oil. In the last 12 months, the price of fuel oil at Urbana-Champaign has risen 82%. When budget planning for utilities for FY 1980 was undertaken, it appeared that an average cost of $.60 per gallon for fuel oil would be accurate. Price increases for the #2 fuel oil have now brought the cost to $.66 as of mid-August, 1979, with an average cost of $.80 very likely for the fiscal year.

Given such escalations, the need to find lower cost alternatives is obvious. Efforts are already underway to provide the Urbana physical plant with the option to burn natural gas as an alternative to oil by December. Even this option will by no means insure that the campus' utilities needs can be met by the current appropriation.

Thus, Fiscal Year 1980 presents a perspective similar to that of the preceding year: there are encouraging signs that the State recognizes and

TABLE 2
IMPACT OF INFLATION
ON GENERAL EXPENSE ITEMS AND PERSONAL SERVICES

GENERAL EXPENSE ITEMS

Fiscal Year	% Change in WPI & CPI on Price Increase Objects of Expenditure	vs.	U of I Price Increases (Includes General Items, Utilities, Library)
FY 1970	3.9%		4.2%
FY 1971	1.4		4.7
FY 1972	3.6		0.0
FY 1973	5.3		0.0
FY 1974	12.4		1.6
FY 1975	18.3		9.1
FY 1976	6.3		10.0
FY 1977	6.4		8.4
FY 1978	6.6		5.8
FY 1979	8.9		7.4
Compounded FY 1970-FY 1979	100.7%		63.8%
FY 1975-FY 1979	55.3%		47.8%

PERSONAL SERVICES

Fiscal Year	% Change in CPI	vs.	U of I Average Salary Increase Policy
FY 1970	5.9%		8.1%
FY 1971	2.3		6.6
FY 1972	3.6		5.0
FY 1973	3.9		5.5
FY 1974	9.0		4.5
FY 1975	11.0		5.0
FY 1976	7.1		7.0
FY 1977	5.8		4.7
FY 1978	6.7		5.0/7.0
FY 1979	9.4		8.0/10.0
Compounded FY 1970-FY 1979	86.6%		77.9/84.7%
FY 1975-FY 1979	46.8%		33.4/38.5%

will meet the most pressing budgetary needs of the University. At the same time there is evidence that the rate of inflation may be higher than expected and that energy needs may require a disproportionate share of the budget if conservation efforts and alternative fuel sources are not pursued at once.

Issues for Fiscal Year 1981

In the presentation of Background Information at the May, 1979, meeting which began the Trustees formal consideration of the FY 1981 budget request, three major issues were identified as most significant for the coming year:

--EMPLOYEE COMPENSATION

--ENERGY

--OPERATION AND MAINTENANCE OF THE PHYSICAL PLANT.

The ensuing four months have sharpened the prominence of these issues. Despite the fact that the University achieved the highest percentage increase in cash salaries in the Big Ten for FY 1979 and appears to be among the top three or four for FY 1980, the University's position with respect to total compensation (cash plus fringe benefits) remains at the unacceptably low position of ninth among Big Ten institutions. It is unrealistic to think that significant improvement in total compensation can be achieved solely through increases in salaries, and it has become imperative that steps be taken to place the group of fringe benefits available to University employees at a level more favorably comparable to other institutions within the Big Ten.

The energy dilemma has already been cited. The search for ways to manage the University's energy needs more effectively must extend to both the operating and capital budgets. The capacity to utilize new sources of lower cost energy not presently available must be achieved as soon as possible. Conservation measures over and above those already in force must be implemented immediately. The potential shortfall in the utilities budget for the present year focuses special attention on the amount to be sought as a utilities price increase. At the same time, recent price behavior and obvious uncertainties about weather conditions make accurate projections of needs an imprecise task at best.

Although Fiscal Year 1980 has seen a significant appropriation for the Operation and Maintenance deficiency, the accumulated deficiency for the University is approximately $6.2 million. Clearly, there must be continuing efforts to reduce and ultimately eliminate this deficiency if the integrity of the plant is to be maintained and protected.

Beyond these specific issues, there remains the ever-present need to provide sufficient funds for new or expanded program efforts at each campus. These are the funds which provide the University with a measure of flexibility and the opportunity to be responsive in a timely way to new directions and to changing societal demands. Indeed, these are the funds which enable a major research-oriented institution to embark upon the new efforts which set the stage for future societal changes.

The Fiscal Year 1981 Request

Within this context, Table 3 presents the Fiscal Year 1981 Operating Budget Request. The amounts reflected in this request represent essentially the Median Alternative identified in the July presentation to the Board of Trustees. Table 4 identifies the individual programmatic components included in the request. The overall request totals $40,445,400 and represents a 12.9% increase over the FY 1980 appropriation. Among the most significant aspects of the request are these:

--a Salary Increase and Compensation Improvement request totalling 9.7% which would continue the program to improve employee fringe benefits, while at the same time providing salary increases matching current inflation expectations for 1980-81;

--continuation of the replacement of Federal funds for instructional programs in health fields to maintain present enrollments, thus insuring that no reduction in instructional efforts is required due to declining Federal funding;

--$2.1 million for continuing the reduction of deficiencies in operations and maintenance and equipment;

--price increases of 7.5% for general expense items, 20% for utilities, and 13.5% for library acquisitions;

TABLE 3
Fiscal Year 1981 Operating Budget Request
(Dollars in Thousands)

I.	CONTINUING COMPONENTS		
	A. Salary/Compensation Improvement		$22,245.2
	1. Annualization of FY 1980	$ 2,759.4	
	2. Salary Increase/Compensation Improvement (9.7%)	19,485.8	
	B. Price Increases		7,012.2
	1. General (7.5%)	2,301.7	
	2. Utilities (20.0%)	4,135.1	
	3. Library Acquisitions (13.5%)	575.4	
	C. Operation & Maintenance, New Areas		442.5
	1. Medical Center, including Affiliated Hospitals	303.1	
	2. Urbana-Champaign	139.4	
	D. Workmen's Compensation		250.0
	E. Replacement of Federally Funded Instructional Programs		2,150.0
	1. Medical Center	2,000.0	
	2. Urbana-Champaign	150.0	
	F. Third-Year Enrollment Progression, Dentistry		415.3
	Subtotal, Continuing Components		($32,515.2)
	% of FY 1980 Base[1]		10.39%
II.	PROGRAMMATIC COMPONENTS		
	A. New and Expanded Programs[2]		5,096.3
	1. Chicago Circle	1,280.1	
	2. Medical Center	879.9	
	3. Urbana-Champaign	2,575.4	
	4. General University	360.9	
	B. Base Deficiencies		2,100.0
	1. Operation & Maintenance	1,500.0	
	a. Chicago Circle	(163.5)	
	b. Medical Center	(540.0)	
	c. Urbana-Champaign	(796.5)	
	2. Equipment	600.0	
	a. Chicago Circle	(200.0)	
	b. Urbana-Champaign	(400.0)	
	Subtotal, Programmatic Components		($ 7,196.3)
	% of FY 1980 Base		2.30%
III.	SPECIAL SERVICES/FUNDING COMPONENTS		
	A. County Board Matching (UC)		283.0
	B. Expansion of Cooperative Extension Telenet (UC)		67.2
	C. Cooperative Extension Nonacademic Salary Adjustment and Reclassification (UC)		49.4
	D. Area Extension Advisors (UC)		68.0
	E. Maintenance of Current Size, Cooperative Extension Service (UC)		176.3
	F. Library Computer System		88.0
	Subtotal, Special Services/Funding Components		($ 733.9)
	% of FY 1980 Base		.2%
	Grand Total FY 1981 Request[3]		$40,445.4
	% of FY 1980 Base		12.93%

[1] FY 1980 Base = $312,895.6 excluding retirement and DSCC.

[2] Individual Programs in this section are identified in Table

[3] Excludes Retirement.

TABLE 4
Fiscal Year 1981 Budget Request
New and Expanded Programs
(Dollars in Thousands)

Chicago Circle		$1,280.1
Extended Day/Program PM	$600.0	
MA in Art Therapy	57.0	
Center for Language and Writing	79.6	
Center for Private Enterprise	60.0	
Center for Quantum Electronics	75.0	
Urban Transportation Center	50.0	
Jane Addams Center	50.0	
Institute for the Humanities	58.5	
Library Development	50.0	
Graduate Fellowships	120.0	
Office Training and Staff Development	50.0	
Office Automation	30.0	
Medical Center		879.9
Urban Health Program	$465.0	
Clinical Education in Pharmacy	50.0	
Center for the Study of Patient Care and Community Health	50.0	
Graduate Program in Associated Medical Sciences	50.0	
College of Medicine - Regional Residency Programs	264.9	
Urbana-Champaign		2,575.4
Veterinary Medicine	$850.0	
College of Law	100.0	
Visual Resources Lab	198.0	
Mutagens and Carcinogens	84.0	
Solar Energy	51.0	
Krannert Center	74.3	
Ph.D. Program in Regional Planning	43.5	
Broadcast Journalism	76.0	
Nuclear Physics	69.2	
Pest Management Clinic	34.5	
Computer Science	98.0	
Atmospheric Science	82.0	
Surface Chemistry and Catalysis	175.0	
Soybean Improvement	101.0	
Principal's Scholars	102.5	
Human Factors Engineering	64.0	
Thermal-Hydraulics of Nuclear Reactor Safety	70.4	
Student Realignment	250.0	
Energy Management - Building Audits	52.0	
General University		360.9
Electronic Blackboard	$ 55.6	
Consumer Health	50.0	
Public Service Program Development	25.0	
Gerontology	70.0	
Alumni Career Center	43.0	
Survey Research Laboratory Deficiency	50.0	
S.R.L. Expansion at Medical Center	36.3	
Institute of Government and Public Affairs	31.0	
UNIVERSITY TOTAL		$5,096.3

--programmatic funds of approximately $5.1 million to support the highest priority new or expanded program efforts within the University.

As demonstrated by the budget levels in the "Needs Budget" presented to the Trustees in June, and the "Maximum Alternative" included in the Preliminary Budget Request presented in July, a significant planning effort has already been made to balance the Fiscal Year 1981 budget request with a sense of realism concerning the overall availability of funds within the State of Illinois budget for FY 1981. Clearly, the University has defensible needs over and above those items which have been included in the budget request. Equally clearly, a significant effort has already been made to pare the budget request to include only the highest items among the full list of genuine needs.

The Enrollment Picture

Table 5 presents a review of headcount enrollment data for FY 1978-1980 with projections for the FY 1981-1985 period. For the Medical Center and Urbana-Champaign campuses, Table 5 shows general enrollment stability. The demand for places at both campuses remains high, with qualified applicants being turned away. At Urbana-Champaign the FY 1981 figures indicate planned decline at the undergraduate level of approximately 700 headcount students, and a decline of 200 at the graduate level. These slight declines are planned to relieve continuing budgetary constraints.

The Chicago Circle enrollment picture is less clear due to a number of complex and interactive factors. As described in the Programmatic Components discussion, the Circle campus has experienced success with the Extended Day/Program PM effort. Extended Day has attracted a number of students new to the campus, and has also proven attractive to students already enrolled who have shifted all or a portion of their academic loads to the Extended Day/Program PM. It is clear that the Extended Day/Program PM has appealed to a new clientele as well as to a portion of the prior Chicago Circle student body.

The overall enrollment decline projected for higher education throughout Illinois in the 1980's may eventually prove more applicable to Chicago

TABLE 5
FALL TERM ON-CAMPUS HEADCOUNT ENROLLMENT
UNIVERSITY OF ILLINOIS

Campus and Level	FY78	FY79	FY80	FY81	FY82	FY83	FY84	FY85
Chicago Circle								
Lower Division	10,073	9,644	9,452	9,324	9,226	9,127	9,030	9,030
Upper Division	7,925	7,682	7,426	7,326	7,316	7,273	7,231	7,231
Total Undergrad	17,998	17,326	16,878	16,650	16,542	16,400	16,261	16,261
GI	1,816	2,242	2,342	2,513	2,571	2,677	2,780	2,780
GII	849	773	780	837	887	923	959	959
Total Grad	2,665	3,015	3,122	3,350	3,458	3,600	3,739	3,739
Total - Chicago Circle	20,663	20,341	20,000	20,000	20,000	20,000	20,000	20,000
Δ	(322)	(341)						
Medical Center - Excluding Residents and Interns								
Lower Division	422	353	332	326	320	315	310	310
Upper Division	1,255	1,382	1,408	1,389	1,382	1,373	1,373	1,371
Total Undergrad	1,697	1,735	1,740	1,715	1,702	1,688	1,683	1,681
Professional	1,960	2,031	2,016	2,082	2,128	2,153	2,184	2,220
GI	458	481	546	571	585	602	611	615
GII	204	248	221	221	221	221	223	223
Total Grad	662	729	767	792	806	823	834	838
Total - for External Enrollment Reports Excludes Residents and Interns	4,319	4,495	4,523	4,589	4,636	4,664	4,701	4,739
Δ	176	28	66	47	28	37	38	
Residents and Interns[1]	424	435	435	435	435	435	435	435
Total - Including Residents and Interns	4,743	4,930	4,958	5,024	5,071	5,099	5,136	5,174
Δ	187	28	66	47	28	37	38	
UC - Nursing[2]	(28)							
UC - BMS and Clinical[2]	(101)							
Total - UC[2]	(129)							
Total - for External Enrollment Reports	4,614							
Urbana-Champaign								
Lower Division	12,861	13,001	13,019	12,500	12,700	12,700	12,700	12,700
Upper Division	12,458	12,412	12,679	12,500	12,000	12,000	12,000	12,000
Total Undergrad	25,319	25,413	25,698	25,000	24,700	24,700	24,700	24,700
Law	646	627	630	630	630	630	630	630
Veterinary Medicine	334	339	344	359	377	390	403	416
Total Professional	980	966	974	989	1,057	1,120	1,173	1,186
GI	3,538	3,417	3,350	3,300	3,250	3,250	3,250	3,250
GII	3,980	3,888	3,750	3,600	3,550	3,550	3,550	3,550
Total Grad	7,518	7,305	7,100	6,900	6,800	6,800	6,800	6,800
Total - Excluding Medical Students	33,817	33,684	33,772	32,889	32,507	32,520	32,533	32,546
Δ	(113)	88	(883)	(332)	17	13	13	
Nursing[2]	28							
BMS and Clinical[2]	101							
Total - Medical	129							
Total - for External Enrollment Reports	33,946							
GRAND TOTAL UNIVERSITY OF ILLINOIS	59,223	58,955	58,730	57,913	57,578	57,619	57,669	57,720

[1]Residents and Interns have been included in external enrollment reports for FY78, but have been excluded for future projections at the request of the IBHE.

[2]Nursing and medical (BMS and Clinical) students at Urbana-Champaign have been included in the Urbana-Champaign figures in FY77 and FY78, but have been included with the Medical Center beginning in FY79 following the convention that students will be counted at the campus that awards their degrees.

Circle than to the other University of Illinois campuses. At this time, projections for FY 1981 indicate maintaining headcount enrollment at the 20,000 level, while the growth of Extended Day/Program PM enrollments continues, with a corresponding drop of headcount during the day. The demographic experiences of the City of Chicago and the immediate "ring" suburban areas, from which the Circle draws the largest portion of its students, are currently under extensive review within the University. The extent to which the demographic experience in the Chicago area will ultimately affect the Circle campus remains uncertain. While it is likely that Extended Day enrollments will continue to grow, overall enrollments at Chicago Circle may be reduced from their present levels if present trends continue. On the other hand, new enrollment recruiting efforts may offset current trends and enable enrollments to be maintained at a stable level.

The Division of Services for Crippled Children

Under the provisions of Senate Bill 1314, the Division of Services for Crippled Children (DSCC) would be transferred from the University of Illinois to the Division of Vocational Rehabilitation, effective July 1, 1980. At the time of preparation of this document, SB 1314 had been passed by the General Assembly and sent to the Governor for signature. Under these circumstances, the University's FY 1981 budget request has been prepared excluding DSCC. The DSCC base budget amount has been removed from the University's base for the purpose of determining salary and price increase levels, and no incremental amounts are sought for DSCC programs. The University is working closely with the Division of Vocational Rehabilitation to insure that DSCC will be included in the DVR FY 1981 budget request.

CAPITAL BUDGET REQUEST

The FY 1981 Capital Budget Request is comprised of three major components: the regular capital request containing new building, major remodeling, SR^3 and associated projects; a group of Energy Projects designed to provide alternative sources of energy and to implement energy conservation

measures; and projects for Food Production Research (Food for Century III). As in the past, the Food Production Research Request is described in a separate document.

The regular capital budget request totals $42,318,400, and for 1981 places primary emphasis on projects which will improve library facilities at Chicago Circle and provide desperately needed bookstack space at Urbana-Champaign. Projects which provide for major remodeling efforts at the Medical Center and Space Realignment Renewal and Replacement efforts also are among the highest priority regular Capital Budget items. The full regular capital budget request is shown in Table 6.

As noted earlier, the University faces significant problems of both an immediate and long range nature with respect to energy. Rapid price increases among utilities components require that immediate steps be taken, and the University has already provided funds internally to make it possible for three boilers at Abbott Power Plant to be converted to burn both natural gas and fuel oil, to take advantage of the current lower cost of natural gas as compared to #2 grade oil required at Abbott. This project is scheduled for completion in December, 1979, and will provide some reduction in the cost of utilities for FY 1980.

While this gas conversion project will help to offset utilities increases in the immediate future, far more extensive efforts must be undertaken if the University is to curb the growth rate of utilities costs in the longer run. Two major objectives must be pursued as rapidly as possible:

--utilization of alternative, lower cost, fuel sources: chiefly coal and/or refuse;

--energy conservation modifications to the existing physical plants.

Pursuit of these two objectives can occur through both operating and capital budget efforts. For example, there now appears to be the possibility in both Chicago and Urbana-Champaign that private business concerns are willing to construct refuse incineration facilities if the University is willing to agree to purchase steam generated from the incineration process. Present estimates of projected fuel costs, discussed in detail at the formal Energy Program Section, indicate that steam purchased under such

TABLE 6
UNIVERSITY PRIORITIES - FY 1981 CAPITAL BUDGET REQUEST

University Priority	Campus Priority	Project	Budget Category	Project Cost	Cumulative Total	Chicago Circle	Medical Center	Urbana-Champaign
1	UC-3	Library Sixth Stack Addition	BLDG	$8,494,700	$ 8,494,700	$	$	$ 8,494,700
2	UC-4	Library Sixth Stack Addition	UTIL	123,000	8,617,700			8,617,700
3	CC-1	Library - Major Rehabilitation Planning	PLAN	250,000	8,867,700	250,000		
4	CC-2	Relocate Admissions and Records from Library	REMD	832,000	9,699,700	1,082,000		
5	MC-1	SUDMP - Equipment	EQUP	225,000	9,924,700		225,000	
6	UC-1	English Building - Phase II Equipment	EQUP	79,000	10,003,700			8,696,700
7	MC-2	Major Building Rehabilitation - Segment 1	REMD	4,397,400	14,401,100		4,622,400	
8	CC-3	SR^3 - Part I	REMD	1,849,600	16,250,700	2,931,600		
9	CC-4	SR^3 - Equipment	EQUP	5,800	16,256,500	2,937,400		
10	MC-3	SR^3 - Part I	REMD	1,819,200	18,075,700		6,441,600	
11	UC-5	SR^3 - Part I	REMD	2,213,300	20,289,000			10,910,000
12	UC-6	SR^3 - Equipment	EQUP	153,000	20,442,000			11,063,000
13	GU-1	Upgrade Electrical Service, Roosevelt Road Bldg	REMD	326,700	20,768,700			
14	UC-7	Pilot Training Facility	BLDG	455,900	21,224,600			11,518,900
15	CC-5	Handicapped Accessibility Remodeling	REMD	480,000	21,704,600	3,417,400		
16	UC-13	Auditorium Remodeling	PLAN	80,000	21,784,600			11,598,900
17	UC-9	Television Building Remodeling	PLAN	330,700	22,115,300			11,929,600
18	UC-11	English Building Remodeling	REMD	1,650,000	23,765,300			13,579,600
19	CC-6	Instructional Resource Access Center	REMD	100,000	23,865,300	3,517,400		
20	CC-7	Instructional Resource Access Center	EQUP	29,100	23,894,400	3,546,500		
21	MC-6	SR^3 - Part II	REMD	1,408,000	25,302,400		7,849,600	
22	UC-14	SR^3 - Part II	REMD	1,773,100	27,075,500			15,352,700
23	UC-15	SR^3 - Equipment	EQUP	105,500	27,181,000			15,458,200
24	CC-8	SR^3 - Part II	REMD	147,500	27,328,500	3,694,000		
25	CC-9	SR^3 - Equipment	EQUP	100,600	27,429,100	3,794,600		
26	MC-5	Major Building Rehabilitation - Segment 2	REMD	3,831,000	31,260,100		11,680,600	
27	UC-12	Davenport Hall Remodeling	PLAN	75,000	31,335,100			15,533,200
28	MC-7	Major Building Rehabilitation - Segment 3	REMD	3,337,000	34,672,100		15,017,600	
29	CC-10	SR^3 - Part III	REMD	327,700	34,999,800	4,122,300		
30	UC-23	SR^3 - Part III	REMD	1,288,900	36,288,700			16,822,100
31	UC-24	SR^3 - Equipment	EQUP	110,000	36,398,700			16,932,100
32	CC-11	SEL College of Engineering - Remodeling	REMD	783,200	37,181,900	4,905,500		
33	CC-12	SEL College of Engineering - Equipment	EQUP	554,000	37,735,900	5,459,500		
34	UC-8	Life Sciences Teaching Lab	PLAN	601,800	38,337,700			17,533,900
35	CC-13	Roosevelt Road Bldg - Campus Duplicating Service	REMD	447,500	38,785,200	5,907,000		
36	CC-14	Roosevelt Road Bldg - Equipment	EQUP	139,300	38,924,500	6,046,300		
37	UC-16	Life Sciences Teaching Lab	LAND	150,000	39,074,500			17,683,900
38	UC-17	Pennsylvania Avenue Street Improvements	SITE	399,300	39,473,800			18,083,200
39	UC-18	Police and Fire Station	BLDG	1,338,800	40,812,600			19,422,000
40	UC-19	Police and Fire Station	UTIL	166,600	40,979,200			19,588,600
41	UC-20	Engineering Library	PLAN	600,200	41,579,400			20,188,800
42	UC-21	Library Remodeling (Main)	REMD	407,000	41,986,400			20,595,800
43	UC-22	Campus Landscape Improvements	SITE	50,000	42,036,400			20,645,800
44	CC-15	Pedestrian Safety	SITE	100,000	42,136,400	6,146,300		
45	CC-16	Bus Stop Shelters	SITE	45,400	42,181,800	6,191,700		
46	UC-25	Willard Airport Land	LAND	84,600	42,266,400			20,730,400
47	UC-26	Intramural Athletic Fields	SITE	52,000	42,318,400*			20,782,400

*Total includes a General University project of $326,700 (Priority 13).

an arrangement may compare favorably with other relatively lower cost fuel options. If so, the University could pursue one alternative fuel without the need for any additional capital investment.

Seeking other alternative fuels which are available now will require investment of capital funds. The most readily available and economically attractive alternative fuel source is coal, and the FY 1981 Energy Projects include funds for conversion to coal burning capacity at the power plants for both Urbana-Champaign and the Medical Center. When combined with the proposed interconnection of the Chicago Circle and Medical Center steam delivery systems, the coal conversion projects would make this relatively low cost and readily available fuel an option for all three campus' utilities needs. The estimated total cost of these fuel conversion projects is $12,634,600, as shown in Table 7.

In addition to making alternative fuel sources available, energy conservation modifications which will reduce energy consumption must also be pursued. A number of such projects have been identified at each campus, along with an estimate of the amount of energy which each project is intended to save, expressed in terms of British Thermal Units (BTU's). Knowing the estimation of BTU's saved and the projected cost of energy per BTU, it is possible to determine an estimate of how long it would take for a given project to "payback" the initial capital investment. This process, outlined in greater detail in the discussion of Energy Projects, enables a ranking of energy conservation projects so that those which will "payback" their initial investment in the shortest amount of time receives highest priority. Table 8 contains all of the energy conservation projects for FY 1981 with payback estimates under five years in priority order. These projects represent a total capital need of $12,387,173.

In sum, it now appears that Fiscal Year 1981 will become a critical year in the overall development of the University's capital program. The needs of the University to improve library facilities and to continue major remodeling and SR^3 efforts remain of high priority, as does the need to plan for future high priority needs. At the same time the need for immediate and significant attention to energy-related issues has taken on almost crisis proportions.

TABLE 7
FUEL CONVERSION PROJECTS
FY 1981

Campus	Project	Project Cost	Cumulative Total
UC	Abbott Power Plant Coal Conversion	$5,900,000	$ 5,900,000
MC	Retrofit Steam Plant Boilers for Coal Burning	3,176,600	9,076,600
CC	Interconnect Two Chicago Power Plants	3,344,000	12,420,600
UC	Conversion from Oil to Gas - Willard Airport	214,000	12,634,600

TABLE 8
FY 1981 ENERGY CONSERVATION PROJECT PRIORITY LIST

Priority	Campus	Project	Payback	Project Cost	Cumulative Total
1	UC	Animal Room Improvement--Large Animal Clinic	0.33	$ 216,140	$ 216,140
2	UC	Mixed Air Dampers and Controls--36 Buildings	0.69	287,830	503,970
3	UC	Steam Absorption Machine-Control--10 Buildings	0.80	441,375	945,345
4	UC	Digital Computer Lab--Process Cooling with Outside Air	0.95	128,400	1,073,745
5	MC	Building Equipment Automation--Dentistry Building	1.12	157,000	1,230,745
6	MC	Building Equipment Automation--Medical Science Addition	1.20	147,700	1,378,445
7	CC	Light Fixture Lens Replacement--University Hall	1.24	40,700	1,419,145
8	UC	Steam Absorption Machine Control--10 Buildings	1.32	497,550	1,916,695
9	UC	Seal Ventilation Ducts--2 Buildings	1.37	32,100	1,948,795
10	UC	Animal Room Ventilation--3 Buildings	1.65	237,540	2,186,335
11	CC	Modify Control Systems--6 Buildings	1.74	93,500	2,279,835
12	UC	Fume Hoods--8 Buildings	1.89	11,770	2,291,605
13	UC	Ventilation Turndown--Gregory Hall	1.90	9,630	2,301,235
14	MC	Upgrade Heating Controls--4 Buildings	1.91	63,600	2,364,835
15	CC	Zone Radiation--3 Buildings	1.92	48,700	2,413,535
16	UC	Domestic Hot Water Control--2 Buildings	1.94	8,560	2,422,095
17	CC	Heat Reclaim Systems--5 Buildings	2.00	661,400	3,083,495
18	CC	Modify Air Systems--6 Buildings	2.01	338,800	3,422,295
19	MC	Upgrade Fan System--Medical Science Addition	2.14	184,700	3,606,995
20	MC	Building Equipment Automation--Eye and Ear Infirmary	2.19	138,400	3,745,395
21	UC	Reheat Systems--Zone Control--14 Buildings	2.46	257,870	4,003,265
22	UC	Steam Absorption Machine Control--E.E. Building	2.49	64,200	4,067,465
23	UC	Summer-Winter Ventilation Rate--3 Buildings	2.74	25,680	4,093,145
24	UC	Install Air Curtains Above Entryways--3 Buildings	2.74	29,960	4,123,105
25	UC	Weatherstripping and Caulking	2.74	720,110	4,843,215
26	UC	Temperature Control Remodeling and Replacement--17 Buildings	2.74	920,200	5,763,415
27	MC	Building Equipment Automation--Peoria School of Medicine	2.78	82,500	5,845,915
28	MC	Install Heat Recovery Systems--Biological Resources Lab	2.81	110,800	5,956,715
29	CC	Install Variable Air Volume Systems--2 Buildings	2.93	422,700	6,379,415
30	MC	Building Equipment Automation--10 Buildings	3.06	1,099,000	7,478,415
31	MC	Building Equipment Automation--Benjamin Goldberg Center	3.09	91,300	7,569,715
32	UC	Pipe Insulation--Electrical Engineering Building	3.21	20,865	7,590,580
33	UC	Radiation--Zone Control	3.23	66,340	7,656,920
34	UC	Indoor Lighting--7 Buildings	3.23	175,266	7,832,186
35	UC	Reheat Systems--Zone Control--12 Buildings	3.27	192,065	8,024,251
36	UC	HVAC Retrofit	3.29	284,620	8,308,871
37	MC	Building Automation--Phase II, Rockford School of Medicine	3.35	93,500	8,402,371
38	UC	Domestic Hot Water Control--4 Buildings	3.46	14,980	8,417,351
39	UC	Domestic Hot Water Control--7 Buildings	3.54	38,520	8,455,871
40	UC	Radiation--Zone Control--28 Buildings	3.64	328,490	8,784,361
41	UC	Indoor Lighting--2 Buildings	3.79	59,920	8,844,281
42	UC	Indoor Lighting--5 Buildings	3.80	147,874	3,992,155
43	UC	Steam Absorption Machine Control--4 Buildings	3.85	104,325	9,096,480
44	CC	Modify Domestic Hot Water System	4.08	48,700	9,145,180
45	UC	Animal Room Ventilation Improvements--3 Buildings	4.12	507,180	9,652,360
46	UC	Air Conditioning System Revision	4.12	160,500	9,812,860
47	UC	Reheat Systems--Zone Control--4 Buildings	4.23	90,950	9,903,810
48	UC	Indoor Lighting--4 Buildings	4.44	146,483	10,050,293
49	UC	Steam Absorption Machine Control--3 Buildings	4.61	192,600	10,242,893
50	UC	Radiation Zone Control--29 Buildings	4.70	381,990	10,624,883
51	UC	Domestic Hot Water--24 Buildings	4.87	263,220	10,888,103
52	UC	HVAC Retrofit--3 Buildings	4.94	429,070	11,317,173
53	UC	Heating System Remodeling--9 Buildings	4.94	1,070,000	12,387,173

The dual objectives of implementing alternative fuel sources and undertaking major conservation modifications are critical if the University is to retain any effective management of its energy requirements. Beyond the internal management of the institution, pursuit of alternative energy resources, especially coal, can prove to have significant impact within the State and the nation as attempts are made to reduce dependence upon pretroleum based energy sources.

INTRODUCTION

Table 1 presents a summary of the Board of Trustees Operating Budget Requests from FY 1975 through FY 1980. As discussed in Part I, the FY 1980 incremental appropriation can be seen as continuing several positive trends in the provision of incremental State funds to meet the highest priority University needs. The total increment of $31,279,300 represents a 10.8% increase over the FY 1979 base. Within that increase are $2,561,700 supplemental funds for the Division of Services for Crippled Children (DSCC), one of the "Special Services and Funding Components" which are outside the core functions of teaching, research and public service. Even when the special DSCC supplement is removed, the increment of $28,717,600 represents a 9.9% increase over FY 1979. This amount is the highest since FY 1975, and coupled with the 9.3% increase experienced in FY 1979, provides encouraging evidence of the willingness of the State to meet the most pressing budget requirements of the University.

The FY 1981 Operating Budget Request is presented in three major sections: Continuing Components; Programmatic Components; and Special Services/ Funding Components. Table 2 presents the incremental requests for each of these categories, while Table 3 identifies specific new or expanded program requests for each campus. The request for retirement funding for the University of Illinois' share of the FY 1981 State Universities Retirement System appropriation is outlined in Appendix 2.

CONTINUING COMPONENTS

Items contained in this category are those which are essential to the maintenance of <u>current</u> levels of operation. Included are the following: 1) salary and compensation increases for continuing staff; 2) price increases for goods and services; 3) operation and maintenance funds for new areas; 4) workmen's compensation; 5) funds to continue the replacement of Federal funds for instructional programs in the health professions; and 6) funds to maintain enrollment progression of students in the College of Dentistry.

PART II

FISCAL YEAR 1981 OPERATING BUDGET REQUEST

TABLE 1
History of the Operating Budget Action FY 1975 - 1980
University of Illinois
(Dollars in Thousands)

	(1) Previous Year's Base[1]	(2) University Request	(3) IBHE Rec.	(4) Allocation of Gov. Budget	(5) Legislative Action	(6) Governor's Action	(7) Final	(7 ÷ 1) % Final of previous Base	(7 ÷ 2) % Final of System Request
FY 1975	$198,381.5	$22,800.2	$16,743.0	--	$27,523.0	$20,043.0	$20,043.1	10.1%	87.9%
FY 1976	218,424.5	32,343.5	23,899.4	--	29,375.8	16,950.7	16,950.7	7.8	52.4
FY 1977	235,375.5	26,780.3	21,233.3	$10,064.5	15,950.7	10,172.5	14,644.3	6.2	54.7
FY 1978	250,019.4	31,036.0	23,305.4	16,551.6	17,423.0	15,906.3[2]	15,906.3[2]	6.4	51.3
FY 1979[3]	265,925.8	34,106.6	26,415.5	24,568.1	24,799.6	24,755.6	24,755.6	9.3	72.6
FY 1980	290,681.4	37,473.3	28,320.4	27,550.8	31,279.3 (28,717.6)	31,279.3 (28,717.6)	31,279.3[4] (28,717.6)	10.8 (9.9)	83.5 (76.6)
FY 1981[5]	312,895.6								

[1]Excludes Retirement and IBA. Example - Table 11, FY 1980 Base of $316,573.2, minus retirement of $25,891.8 is $290,681.4.

[2]Excludes Senate Bill 880--$110.6 Prison Legal Services and $123.5 Police Training Institute.

[3]Includes Audit Commission Income Fund Adjustment.

[4]Represents an increment of $28,717.6 plus special supplement of $2,561.7 for Division of Services for Crippled Children (DSCC).

[5]This figure excludes DSCC, scheduled for transfer to the Division of Vocational Rehabilitation for FY 1981.

TABLE 2
Fiscal Year 1981 Operating Budget Request
(Dollars in Thousands)

I. CONTINUING COMPONENTS		
A. Salary/Compensation Improvement		$22,245.2
1. Annualization of FY 1980	$ 2,759.4	
2. Salary Increase/Compensation Improvement (9.7%)	19,485.8	
B. Price Increases		7,012.2
1. General (7.5%)	2,301.7	
2. Utilities (20.0%)	4,135.1	
3. Library Acquisitions (13.5%)	575.4	
C. Operation & Maintenance, New Areas		442.5
1. Medical Center, including Affiliated Hospitals	303.1	
2. Urbana-Champaign	139.4	
D. Workmen's Compensation		250.0
E. Replacement of Federally Funded Instructional Programs		2,150.0
1. Medical Center	2,000.0	
2. Urbana-Champaign	150.0	
F. Third-Year Enrollment Progression, Dentistry		415.3
Subtotal, Continuing Components		($32,515.2)
% of FY 1980 Base[1]		10.39%
II. PROGRAMMATIC COMPONENTS		
A. New and Expanded Programs[2]		5,096.3
1. Chicago Circle	1,280.1	
2. Medical Center	879.9	
3. Urbana-Champaign	2,575.4	
4. General University	360.9	
B. Base Deficiencies		2,100.0
1. Operation & Maintenance	1,500.0	
a. Chicago Circle	(163.5)	
b. Medical Center	(540.0)	
c. Urbana-Champaign	(796.5)	
2. Equipment	600.0	
a. Chicago Circle	(200.0)	
b. Urbana-Champaign	(400.0)	
Subtotal, Programmatic Components		($ 7,196.3)
% of FY 1980 Base		2.30%
III. SPECIAL SERVICES/FUNDING COMPONENTS		
A. County Board Matching (UC)		283.0
B. Expansion of Cooperative Extension Telenet (UC)		67.2
C. Cooperative Extension Nonacademic Salary Adjustment and Reclassification (UC)		49.4
D. Area Extension Advisors (UC)		68.0
E. Maintenance of Current Size, Cooperative Extension Service (UC)		178.3
F. Library Computer System		88.0
Subtotal, Special Services/Funding Components		($ 733.9)
% of FY 1980 Base		.2%
Grand Total FY 1981 Request[3]		$40,445.4
% of FY 1980 Base		12.93%

[1] FY 1980 Base = $312,895.6 excluding retirement and DSCC.

[2] Individual Programs in this section are identified in Table

[3] Excludes Retirement.

TABLE 3
Fiscal Year 1981 Budget Request
New and Expanded Programs
(Dollars in Thousands)

I.	Chicago Circle		$1,280.1
	A. Improvement of Student Access	$ 657.0	
	1. Extended Day/Program PM	(600.0)	
	2. MA in Art Therapy	(57.0)	
	B. Expansion of Research Capacity	373.1	
	1. Center for Language and Writing	(79.6)	
	2. Center for Private Enterprise	(60.0)	
	3. Urban Transportation Center	(50.0)	
	4. Jane Addams Center for the Study of Social Policy	(50.0)	
	5. Center for Quantum Electronics	(75.0)	
	6. Institute for the Humanities	(58.5)	
	C. Graduate Fellowships	120.0	
	D. Library Development	50.0	
	E. Administrative Improvements	80.0	
	1. Office for Training and Staff Development	(50.0)	
	2. Office Automation	(30.0)	
II.	Medical Center		879.9
	A. Urban Health Program	465.0	
	B. Clinical Education in Pharmacy	50.0	
	C. Center for the Study of Patient Care and Community Health	50.0	
	D. Graduate Program in Associated Medical Sciences	50.0	
	E. College of Medicine - Regional Residency Programs	264.9	
III.	Urbana-Champaign		2,575.4
	A. Projects That Have Received Special State Appropriations in Recent Years	1,357.3	
	1. Veterinary Medicine Programs	(850.0)	
	2. Interdisciplinary Work, College of Law	(100.0)	
	3. Visual Resources Laboratory	(198.0)	
	4. Mutagens and Carcinogens in Environment	(84.0)	
	5. Solar Energy	(51.0)	
	6. Krannert Center Deficiencies	(74.3)	
	B. New Programs	43.5	
	1. Ph.D. in Regional Planning	(43.5)	
	C. Expansion of Existing Programs	790.2	
	1. Broadcast Journalism	(76.0)	
	2. Energy Management - Building Audits	(52.0)	
	3. Nuclear Physics Accelerator	(69.2)	
	4. Pest Management Clinic	(34.5)	
	5. Laboratory Programs in Computer Science	(98.0)	
	6. Atmospheric Science Program	(82.0)	
	7. Surface Chemistry and Catalysis	(175.0)	
	8. Soybean Improvement	(101.0)	
	9. Principal's Scholars Program	(102.5)	
	D. Consolidation and Improvement of Interdisciplinary Efforts	134.4	
	1. Human Factors Engineering	(64.0)	
	2. Thermal Hydraulics of Nuclear Reactor Safety	(70.4)	
	E. Student Realignment	250.0	
IV.	General University		360.9
	A. Electronic Blackboard	55.6	
	B. Consumer Health	50.0	
	C. Public Service Program Development	25.0	
	D. Gerontology	70.0	
	E. Alumni Career Center	43.0	
	F. Survey Research Laboratory Deficiency	50.0	
	G. SRL Expansion at Medical Center	36.3	
	H. Institute of Government and Public Affairs	31.0	
V.	University Total		$5,096.3

SALARY INCREASES/COMPENSATION IMPROVEMENT ($22,245,200)

In FY 1979 the funds appropriated to the University provided average salary increases of 10% for lower-paid employees and 8% for other employees. Although this was the largest rate increase in the Big Ten, it failed to keep pace with the rate of inflation, as shown in Table 4. For academic employees the 8% average increase resulted in an improvement in the University's cash salary ranking among Big Ten institutions from fifth to fourth position (Table 5) but the ranking for total compensation remained unchanged at ninth (Table 6).

For FY 1980 the University has received funds sufficient to grant salary increases averaging 7.5%. Although no official data are available from other Big Ten institutions, an informal survey has revealed that anticipated average salary increases range from 7.0% to 9.0% for Big Ten institutions, with the University of Illinois' 7.5% ranking either third or fourth. However, six of the other institutions anticipate average increases of 7.0%, so it is unlikely that the University of Illinois will experience a significant improvement in its salary ranking.

For nonacademic employees, comparisons between range midpoints for open range employees and the employment market are shown in Figure 1. These comparisons result in expected salary deficiencies ranging from 3.5% for lower grade positions to 8.5% for upper grade positions.

Salary and compensation requirements for FY 1981 center around two major objectives: meeting projected inflation increases; and improving competitiveness in employment markets. For the former objective, inflation projections from the Chase Econometrics and Data Resources Institute predictive models were examined, and were found to vary between approximately 7.1 and 7.9%. In view of recent inflation activity, the salary increase amount has been set at 8%.

To be competitive in the faculty employment market, a goal of reaching at least third place among Big Ten institutions has been set for overall compensation. Table 6 indicates that the gap between the University's average faculty compensation and the corresponding figure for the third-place institution is $1,358 ($28,048 - $26,690 = $1,358). This difference represents 5% of the University of Illinois average compensation amount.

TABLE 4
IMPACT OF INFLATION

PERSONAL SERVICES

Fiscal Year	% Change in CPI	U of I Average Salary Increase Policy
FY 1970	5.9%	8.1%
FY 1971	2.3	6.6
FY 1972	3.6	5.0
FY 1973	3.9	5.5
FY 1974	9.0	4.5
FY 1975	11.0	5.0
FY 1976	7.1	7.0
FY 1977	5.8	4.7
FY 1978	6.7	5.0/7.0
FY 1979	9.4	8.0/10.0
Compounded FY 1970-FY 1979	86.6%	77.9/84.7%

TABLE 5
DIFFERENCES IN AVERAGE CASH SALARY
BIG TEN INSTITUTIONS--FY 1978, FY 1979
ALL RANKS COMBINED AND WEIGHTED TO THE
UNIVERSITY OF ILLINOIS DISTRIBUTION[1]

	FY 1978 Weighted Average Cash Salary	Rank	FY 1979 Weighted Average Cash Salary	Rank	Percent Change	Rank
Illinois	21316	5	23249	4	9.07	1
Indiana	19935	10	21344	10	7.07	8
Iowa	22141	4	23212	5	4.83	10
Michigan	23065	1	24915	1	8.02	4
Michigan State	20719	8	22207	9	7.18	7
Minnesota	21279	6	22839	6	7.33	6
Northwestern	22208	2	24152	2	8.75	2
Ohio State	22185	3	23676	3	6.72	9
Purdue	20877	7	22619	7	8.34	3
Wisconsin	20673	9	22209	8	7.42	5
Mean	21440		23042		7.47	
Mean, Less Illinois	21454		23019		7.30	

[1]Weights Assigned:

	FY 1978	FY 1979
Professor	0.3594	0.3787
Assoc. Professor	0.2787	0.2868
Asst. Professor	0.3102	0.2906
Instructor	0.0516	0.0439

Source: University of Minnesota Salary Comparison, FY 1978, and FY 1979.

TABLE 6
DIFFERENCES IN AVERAGE COMPENSATION
BIG TEN INSTITUTIONS--FY 1978, FY 1979
ALL RANKS COMBINED AND WEIGHTED TO,
UNIVERSITY OF ILLINOIS DISTRIBUTION[1]

	FY 1978 Weighted Average Compensation	Rank	FY 1979 Weighted Average Compensation	Rank	Percent Change	Rank
Illinois	24413	9	26690	9	9.32	3
Indiana	24142	10	26090	10	8.06	7
Iowa	25962	3	27278	6	5.06	10
Michigan	27562	1	30160	1	9.42	2
Michigan State	24786	8	26800	8	8.12	6
Minnesota	25853	5	28048	3	8.49	4
Northwestern	26049	2	28599	2	9.78	1
Ohio State	25943	4	27727	4	6.87	9
Purdue	25431	6	27757	5	9.14	5
Wisconsin	25024	7	27039	7	8.05	8
Mean	25516		27619		8.23	
Mean, Less Illinois	25638		27722		8.11	

[1]Weights Assigned:

	FY 1978	FY 1979
Professor	0.3594	0.3787
Assoc. Professor	0.2787	0.2868
Asst. Professor	0.3102	0.2906
Instructor	0.0516	0.0439

Source: University of Minnesota Salary Comparison, FY 1978, and FY 1979.

FIGURE 1

OPEN RANGE MARKET SALARY COMPARISONS

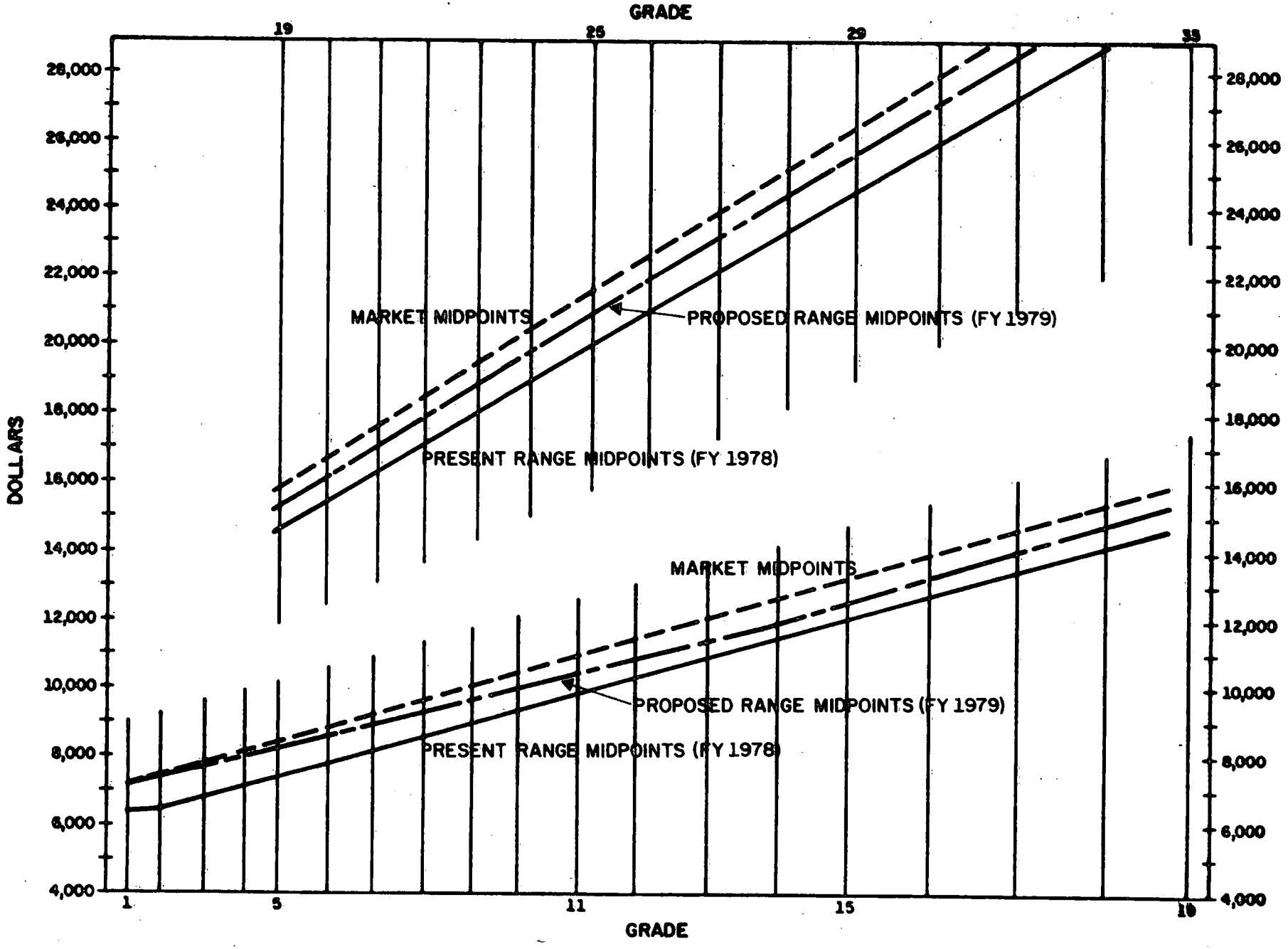

Table 5 indicates that for cash salaries, the gap between the University of Illinois and the third-place Big Ten institutions is $427 ($23,676 - $23,249 = $427).

The compensation improvement increment included in the budget request for FY 1981 is intended to close the 5% gap in total compensation between the University of Illinois and the third-ranked Big Ten institution over a three-year period, achieving a 1.7% improvement each year. Continuing attention is being devoted to the task of identifying fringe benefit improvements which might be implemented for University employees. One possible plan incorporating a variety of benefit improvements is displayed in Table 7.

The level of benefit improvements included in this package is $931, and represents the total compensation gap of $1,358 less the cash salary gap of $427. Obviously, the gap in total compensation could be closed entirely by improvements in cash salaries, or entirely by improvements in fringe benefits, but a combination of improvements in each area is most likely to succeed.

The plan outlined in Table 7 involves life and health insurance benefits, survival and disability benefits, and retirement. Implementing such a plan would require considerable cooperative efforts among the University and the State of Illinois, and might well involve changes in benefit packages for State employees outside the University. A considerable proportion of the estimated total additional cost of the plan would be required to fund an improvement in the post-retirement annual increase--currently 3% of the initial annuity. The urgency of improving this aspect of the fringe benefit package can be illustrated by the following case. A staff member who retired in FY 1970 at age 65 with a $7,000 annuity today receives $8,400 due to the effect of the current fixed annual increase. However, this annuitant's current income is only $4,509 in terms of comparable purchasing power, when adjusted for increases in the cost of living since FY 1970. In other words, annuitants have lost 36% of their purchasing power over the last ten years. One can only speculate as to how much more they will lose to inflation during the 1980's given the current economic environment.

TABLE 7
COMPENSATION NEEDS--FY 1981

COMPENSATION DEFICIENCY[1]	$1,358
SALARY DEFICIENCY[1]	427
BALANCE FOR FRINGE BENEFIT IMPROVEMENTS	$ 931

ONE POSSIBLE ALLOCATION OF $931 BALANCE AMONG BENEFIT AREAS:

	ADDITIONAL EMPLOYER CONTRIBUTION PER PARTICIPATING STAFF MEMBER (ESTIMATED)
LIFE INSURANCE--	
INCREASE COVERAGE TO 2 TIMES SALARY	$125
HEALTH INSURANCE--	
PAY ½ COST FOR LOW OPTION COVERAGE FOR DEPENDENTS[2]	201
PAY FOR DENTAL INSURANCE FOR EMPLOYEES	30
SURVIVORS INSURANCE--	
IMPROVE BENEFIT TO NEAR THE AVERAGE WITHIN BIG TEN	90
DISABILITY BENEFIT--	
IMPROVE BENEFIT TO NEAR THE AVERAGE WITHIN BIG TEN	48
RETIREMENT BENEFIT--	
RAISE AUTOMATIC ANNUAL INCREASE IN RETIREMENT ANNUITY[3]	437
	$931

[1]Amount needed to achieve third place among Big Ten Institutions.

[2]A 14 percent higher contribution would be needed to pay for half the difference between low and high option coverage for dependents.

[3]The exact increase purchasable with $437 per staff member could only be determined by an actuarial study. Assuming full funding of the additional increment, it is estimated that this contribution would underwrite an increase in the annual increment to between 5 and 6 percent of the beginning annuity. The present automatic increase is 3 percent.

The additional State expenditure for retirement would raise the post-retirement annual increase from 3% to between 5 and 6%. This improvement would help to rectify a critical condition for all annuitants. Unfortunately, the needs of two additional groups have not been included previously under the annual increase provisions--namely those drawing either survivors' or disability benefits. These two groups have suffered even more drastically from the effects of inflation. For instance, a widow with small children who began drawing $4,200 annually in FY 1970 has seen that amount effectively eroded, by FY 1979, to $2,254 in terms of what the money will purchase. This represents a 46% loss in purchasing power, a particularly striking fact since as of November, 1977, nearly 26% of survivors were children between ages 2 and 18--survivors of staff members who died relatively young.

The University continues to work with representatives from the State Universities Retirement System and others to determine areas in which improvements can and should be made. The need for such improvements is clear and must be met. What is needed most immediately is a commitment of additional State funds to begin the process.

PRICE INCREASES
($7,012,200)

Price increase requests for goods and services needed for the operation of the University are based each year upon the most accurate inflation projections available. For the past several years, the Illinois Board of Higher Education has followed a policy of providing differential price increase amounts for certain goods or services which have been subject to unusual inflationary pressures, most notably in the categories of utilities and library acquisitions.

General Price Increases - ($2,301,700)

For general goods and services not subject to special price increase fluctuation, an increase rate of 7.5% appears to be in line with the current projections for FY 1981 available at the time this document was completed. Both the Chase Econometrics and the DRI Group projections were examined. The projections varied from a low of 7.1 to a high of 7.9 with 7.5 as a midpoint. An increase for FY 1981 which provided funds above this projected level would permit some recovery from past losses to inflation, while any amount less than inflation would continue the recent history of declining purchasing power discussed in the Introduction.

Library Acquisition - ($575,400)

For library acquisitions, the most recent experiences of the libraries at each campus have been examined to determine inflation projections for the major components for acquisition costs: the price of books (10%), of periodicals (14%) and of binding (23.7%). Combined, the projected increase in these components result in an overall projected increase of 13.5%.

Utilities - ($4,135,100)

For utilities increases, there are virtually no reliable projections for rate increases for FY 1981. Indeed, reliably predicting rates for the next six months is nearly impossible. It appears that it is possible that a return to the volatility of the energy crisis period of 1973-1974 will occur. During that period price increases of utility components increased by 22.7% for FY 1974 and 28.2% for FY 1975, as measured by Higher Education Price Index data from the National Institute of Education. For FY 1979,

overall utilities costs rose sharply, led by #2 grade fuel oil required at Urbana-Champaign, which rose by 82% during the past twelve months.

The combination of the uncertain price increases with severe weather conditions similar to those experienced in the past three winters could result in the need for a supplemental request during FY 1980. In any case, the volatility of this area gives added significance to the need for capital projects which result in energy conservation or in the opportunity to use lower cost fuels. The development of a group of such projects is described in the Capital Budget section of this document. Again as noted elsewhere, the University has already begun the effort to make lower-cost fuel sources available to replace the high cost fuels currently in use. An investment of some $600,000 has been made to enable the Abbott Power Plant at Urbana-Champaign to convert to the partial use of natural gas in lieu of #2 fuel oil. Every effort is being made to bring this project into operation by December, 1979.

In the meanwhile, until additional efforts at conservation can be implemented, and other alternate fuels supplied, the University will be forced to continue to utilize fuel oil. In view of the recent inflationary behavior of utilities costs, a price increase of 20% is sought for utilities for FY 1981.

Appendix 1 contains FY 1980 base information which was used to calculate each component of these Price Increase increments.

OPERATION AND MAINTENANCE FOR NEW AREAS ($442,500)

Funds in this category are requested to meet operation and maintenance costs for areas added to the space maintained with State funds by campus physical plants, or additional space in hospitals affiliated with programs at the Medical Center campus. The need for these funds does not vary in consideration of alternative budget levels, since new space must be maintained. If additional funds are not provided, an immediate deficiency is created.

For FY 1981, the following components are included in this category:

Medical Center

1. $145,500 is required to fund operation and maintenance in the College of Medicine East Tower (formerly Second Unit, Dentistry, Medicine, Pharmacy) which had been funded in the past by student fees retained under provisions of the Medical Center Bonds of 1951. The Bonds will be retired in 1981, and current legislative audit guidelines prohibit the retention of fees in this manner.
2. $50,800 is required to enable the Physical Plant to assume additional costs for maintaining 77,000 gross square feet (GSF) of space to be vacated in the old hospital when the Replacement Hospital is occupied. At present the Hospital is paying for housekeeping of this space. This funding will be discontinued when the Replacement Hospital is occupied, and the Physical Plant must assume janitorial responsibilities at an estimated rate of $.66 per GSF. Ultimately, the Physical Plant is expected to gain janitorial responsibilities for a total of approximately 230,900 gross square feet of vacated hospital space.

Urbana-Champaign

1. $135,200 is required to provide for a portion of the operation and maintenance of the Skating Rink. This amount has been calculated to reflect the portion of total operation and maintenance

requirements which represent basic building services for the building. Charges to groups using the building for recreational or other purposes are calculated to include funds for operation and maintenance. In addition, all users of the building, whether for instructional, research or recreational purposes are expected to provide operation and maintenance support for all special purpose equipment related to their programs. Since the building was acquired from the Athletic Association, no incremental State funds have been made available for operation and maintenance requirements of the building. The $135,200 requested would enable basic building services to be maintained, while continuing the practice of requiring users to pay for special operation and maintenance costs related to their programs. This is the current practice for other facilities similar to the Ice Rink: Huff, Freer, and Kenney Gyms.

2. $4,200 is required to cover the annual maintenance requirements for the Anthropology Storage Building. This facility was constructed with non-appropriated funds under Illinois Board of Higher Education provisions for instructional capital improvements. It requires minimal maintenance.

Table 8 outlines the calculation of funding requirements for these facilities.

Affiliated Hospitals

For FY 1981 it is projected that a total of 27,201 gross square feet of space will be placed in use for Medical Center programs in local hospitals. For FY 1980 the Illinois Board of Higher Education recommended funding such space at $3.65 per GSF. For FY 1981, this rate has been increased by 7.5% to meet inflationary increases, resulting in a rate of $3.92 per GSF. A total of $106,800 is required to provide operation and maintenance for this space.

TABLE 8
FY 1981 REQUESTED OPERATION AND MAINTENANCE SUPPORT FOR NEW AREAS

Name of Building	A Gross Square Feet	B Total Unit Cost ($/GSF)	C Date of Occupancy	D No. of Months To Be Funded In FY 1981	E Annual Cost [1]	F Amount Requested in FY 1981 [2]
Vacation of Space Previously Maintained by Hospital	77,000	$ .66	01/01/80	12	$ 50,800	$ 50,800
College of Medicine East Tower (SUDMP)	186,190	--[3]	Occupied	12	145,500	145,500
Anthropology Storage Building	4,800	$ .87	01/01/79	12	4,200	4,200
Skating Rink	54,964	$2.46	07/01/80	12	135,200	135,200
Total						$335,700

[1] Annual Cost (E) = A x B

[2] Amount Requested (F)= E x D/12

[3] Portion of O & M costs formerly supported by student fees

WORKMEN'S COMPENSATION
($250,000)

Fiscal Year 1979 has continued the recent history of steady growth in Workmen's Compensation expenditures. The period of significant cost increases began in 1976 with the passage of legislation which greatly liberalized benefits available under Workmen's Compensation statutes in Illinois. Since that time, rising hospital and medical charges have contributed to further cost escalations. In addition, more and more cases have been referred to the Illinois Industrial Commission for settlement, resulting in a backlog of cases which are settled one or even two fiscal years after their initiation. Finally, recent audit guidelines have required the payment of certain Workmen's Compensation related costs directly from the Workmen's Compensation appropriation, rather than from the Personal Services appropriation as in the past.

The following table depicts Workmen's Compensation budget and expenditure activity since FY 1975:

(Dollars in Thousands)

	Budget	Expenditures	% Change in Expenditures	"Deficit"[1]
FY 1975	$145.0	$145.0		
FY 1976	180.0	214.7	48.1%	34.7
FY 1977	288.0	296.0	37.9%	8.0
FY 1978	360.0	490.0	65.5%	130.0
FY 1979	440.0	570.0	16.3%	130.0
FY 1980	590.0			

[1]"Deficit" applies to Workmen's Compensation object of expenditure, and is covered by one-time transfers from other objects or sources of funds.

In view of the volatility of expenditure patterns for Workmen's Compensation, the University has consulted with the actuarial firm of Tillinghast, Nelson & Warren to provide a more comprehensive review of funding needs. While this review was not completed in time to affect the budget request for FY 1980, it is available for determination of the FY 1981 amount. Using the data from this study, two components can be

identified for FY 1981. The first component of $179,000 will allow for a base amount of $769,000 as recommended by the firm for FY 1980. This base has been calculated to include all Workmen's Compensation charges, including those required by audit guidelines.

Once this base has been achieved, the actuarial firm has recommended that it be supplemented each year at a rate equal to the increase in total Personal Services. At this time, it appears that the total Personal Services base may increase by approximately 9.2% in FY 1980. Applying this rate to the actuarial base of $769,000 for FY 1980 produces an increment of $71,000.

Together, these two components total an incremental need of $250,000 for Fiscal Year 1981.

REPLACEMENT OF FEDERAL INSTRUCTIONAL FUNDS ($2,150,000)

Since the late 1960's, enrollment expansion in the health professions at the University of Illinois has been supported in part by Federal Capitation funds. Using a student per capita formula, grants have been awarded to the programs of Dentistry, Medicine, Nursing, Pharmacy, Public Health, and Veterinary Medicine. However, the amount of such support has been reduced during the past several years, and it is now apparent that the intent of the Federal administration and Congress is to eliminate the program.

Faced with the impact of reduced awards, the University of Illinois has requested equivalent State replacement funds to provide the support needed to maintain enrollment levels. In FY 1979 and FY 1980 State appropriations were received to replace lost Federal dollars.

The accompanying tables summarize the status of the replacement funding and present projections of needs for State replacement dollars. For FY 1981, replacement funding of $150,000 for Veterinary Medicine and $2,000,000 for the Medical Center are requested to maintain current program levels.

TABLE 9
VETERINARY MEDICINE
PLANS FOR REPLACEMENT OF CAPITATION FUNDS
(Dollars in Thousands)

	Actual FY 1978	Actual FY 1979	Estimated FY 1980	Estimated FY 1981	Estimated FY 1982
Beginning Balance	$ 0.0	$121.1	$162.4	$ 96.0	$ 0.0
Awards	230.6	248.6	194.5	0.0	0.0
Replacement of Capitation by State Funds					
Increment**	250.0	182.6	50.0	150.0	103.2
Cumulative (from previous years)	0.0	268.7	483.8	576.0	780.5
Expenditures**	359.5	658.6*	794.7	822.0	883.7
Ending Balance	121.1	162.4*	96.0	0.0	0.0

* Estimated.
**Inflation: 7.5% from FY 1978 to FY 1979, 7.2% from FY 1979 to FY 1980, 7.9% from FY 1980 to FY 1981, and 7.5% from FY 1981 to FY 1982.

Note: Estimated expenditures based on average of FY 1975-FY 1977 expenditures.

TABLE 10
MEDICAL CENTER
PLANS FOR REPLACEMENT OF CAPITATION FUNDS
(Dollars in Millions)

	Actual FY 1978	Actual FY 1979	Estimated FY 1980	Estimated FY 1981	Estimated FY 1982	Estimated FY 1983
Beginning Balance	$ 1.79	$ 1.28	$ 1.23	$ 0.70	$ 0.68	$ 0
Awards	2.76	3.24	2.50	1.25	0	0
Replacement of Capitation by State Funds						
Increment	0	0.29	0.50	2.00	0.32	0.73
Cumulative (from previous years)**	0	0	0.31	0.87	3.45***	4.05
Expenditures**	3.27	3.58*	3.84	4.14	4.45	4.78
Ending Balance	$ 1.28	$ 1.23*	$ 0.70	$ 0.68	$ 0	$ 0

* Estimated.
** Inflated by 7.2% from FY 1979 to FY 1980, by 7.9% from FY 1980 to FY 1981, and by 7.5% for other years.
*** Includes 0.29 (escalated to 0.36) provided as capitation replacement in FY 1979 used for an additional 17 students in FY 1979 through FY 1981. These additional students were necessary to remain eligible for capitation awards.

INCREASE IN DENTAL CLASS SIZE
($415,300)

New State funds have been allocated in FY 1979 and FY 1980 to allow the College of Dentistry to expand its entering class size from 132 to 165. These funds have supported the increase through the first two years of the curriculum. Additional funds are required in each of Fiscal Years 1981 and 1982 to fund fully the added complements of students. In addition to meeting the enrollment level recommended by the Board of Higher Education, this enrollment expansion allows the University to meet enrollment commitments made to the Federal government upon receipt of $1,250,000 for the equipping of the College's new facility.

The requirement for additional funds in FY 1981 is $415,300 to support an increase in the third year class of 33 students. This amount will provide an additional 9.3 FTE academic faculty, 2.8 FTE nonacademic staff, and associated costs.

It is estimated that the FY 1982 requirements for additional funds will be $438,200 (assuming an 8% inflation rate), completing the requirements to fund fully the dental student expansion.

PROGRAMMATIC COMPONENTS

Requests for new or expanded programs for all campuses of the University total $5,096,300 for FY 1981. These are the funds which provide the University with a measure of flexibility not otherwise available; funds to begin new efforts, to modify existing programs in ways which cannot be accomplished without additional funds enable academic departments to maintain the new efforts which underlie the very foundation of a University. Such funding permits the University to respond to societal demands for new efforts. Beyond responsive efforts, such funding permits the University to maintain a leadership role in the creation of new knowledge which in turn creates new societal demands. For the first time in several years, programmatic funds are sought in FY 1981 for several academic units which are administratively housed in the General University.

The following sections describe specific program requests.

TABLE 11
CHICAGO CIRCLE NEW AND EXPANDED PROGRAMS
FY 1981 BUDGET REQUEST
(Dollars in Thousands)

A.	Improvement of Student Access	
	1. Extended Day/Program PM	$ 600.0
	2. Art Studies/Therapeutic Techniques	57.0
	SUBTOTAL	($ 657.0)
B.	Expansion of Research Capacity	
	1. Center for Research in Language and Writing	79.6
	2. Center for the Study of Private Enterprise	60.0
	3. Urban Transportation Center	50.0
	4. Jane Addams Center for the Study of Social Policy	50.0
	5. Center for Quantum Electronics	75.0
	6. Institute for the Humanities	58.5
	SUBTOTAL	($ 373.1)
C.	Graduate Fellowships	120.0
D.	Library Development	50.0
E.	Administrative Improvements	
	1. Office for Training and Staff Development	50.0
	2. Office Automation	30.0
	SUBTOTAL	($ 80.0)
	TOTAL FY 1981 New and Expanded Program	$ 1,280.1

CHICAGO CIRCLE NEW AND EXPANDED PROGRAMS

The Planning Process

UICC has often been taken to task for an apparent inability to project a clear cut and consistent image of itself and for the lack of clarity in which its future directions as a campus of the University of Illinois have been articulated. Such criticism has come from within the University as well as from external constituencies. The campus undoubtly bears a measure of responsibility for this uncertainty, for over the years mixed signals have indeed gone forth in a variety of ways. There has been continuing internal debate about the Circle's mission, and seemingly divergent initiatives in program development have been taken. In addition, the campus has experienced considerable administrative turnover and recurring periods of student restiveness.

It must be pointed out, however, that the campus has developed and operated in a very volatile socio-political-economic climate, and decision-makers, both inside and outside the University, have entertained very different notions about the development of the campus. Much of the "external uncertainty" noted above is thus attributable not so much to a lack of understanding of the course the campus has pursued in its development, but disagreement with that course.

If one reviews the growth and development of this campus in this short period of fourteen years, the issue of what the campus is about is readily apparent. A comprehensive range of undergraduate programs has been developed in both the liberal arts and sciences as well as in many professional areas. Over 31,000 students have received degrees from these programs and there is every indication that these degrees have continued to be highly valued for their high quality. Masters programs have been developed in some 35 areas and 3,913 degrees have been awarded through them. With the addition this coming year of the Ph.D. in English, 20

doctoral programs are on the books; at the 1979 spring commencement, UICC awarded its 307th doctoral degree. Its active research programs have propelled the campus to a position of leadership among public university campuses in Illinois in the generation of external research funding. It is a campus which has accomplished this not only in an incredibly short period but also in a highly volatile climate of national and local pressures which have focused with considerably more intensity on urban than on non-urban campuses. In spite of all the difficulties it has faced, the campus has had an outstanding record of development in qualitative as well as quantitative terms and the campus stands as a credit to the University of Illinois.

Despite what we regard as a coherent and impressive record of achievement, the campus has undertaken to respond to continuing external uncertainty with several major position and planning papers that lay out in explicit terms how the campus views itself, what it wishes to become, and how it intends to reach the goals it is pursuing.

A "scope and mission" document, involving extensive consultation with and participation by faculty and administrators, was first developed. This statement reaffirms the basic mission long recognized on campus:

> "UICC has the responsibility of providing a broad range of high quality educational services and research characteristic of the finest universities in the land . . . UICC fulfills its distinctive urban mission by providing the advantages of educational and professional attainment to diverse urban constituencies, many of whom would not otherwise have access to such educational opportunity. In this sense, the urban mission of UICC is thus most fully met through the development of UICC into a university of first rank - by its offering educational programs to the urban community within which it exists."

A year of intensive work on the part of a Council appointed by Chancellor Riddle culminated in a comprehensive position paper containing a series of recommendations to deal with the interrelated problems of student recruitment, admissions, and retention. The campus' vexed history in dealing with these problems is well known and needs no repeating. The position paper represents a watershed in this campus' development because it is a clear public statement of the difficult issues the campus must address with respect to the lack of academic preparation of many of its students and outlines a systematic and analytical approach to be used in dealing with these issues. It recognizes that these matters are not somehow remote from the major lines of campus development but that they require urgent attention in ways consistent with the particular scope and mission of the campus.

Finally, demographic studies have been undertaken to determine the enrollment situation the campus could face in the 1980's and beyond. The decline in the birth rate will have a profound impact on most institutions of higher education. This, compounded by the projected continuing loss of population by the City of Chicago, could have a devastating impact on UICC enrollments. A position paper - UICC Planning and Development for the 1980's - outlines the difficult problems UICC must face in this regard and provides a guide for planning and development efforts to meet these challenges. The paper makes clear that major changes must occur in the operation of the campus to insure that it can respond effectively to these serious issues. While we do not anticipate a change in the basic character of our programs, the modes of delivery may have to change dramatically.

The major conceptual underpinnings of the planning process are now in place. We are proceeding to scrutinize in extensive detail every facet of our operation to insure that what we are doing is consistent with campus imperatives and are planning new initiatives

which will bring us that much closer to the ideals of our scope and mission. The FY 1981 new and expanded program request is entirely consistent with the demands and requirements set forth above and should be viewed as the first step in the orderly process of campus development and change.

This request of new and improved programs flow from four major planning objectives contained in the planning documents referred to above: improvement of student access to academic programs of high quality at both undergraduate and graduate levels; expansion of UICC research capacity; student development; improvement of academic support facilities.

INPROVEMENT OF STUDENT ACCESS TO ACADEMIC PROGRAMS OF HIGH QUALITY ($657,000)

UICC will in the 1980's be powerfully affected by two classes of demographic change: the general decline in the birth rate and the flight from the City of Chicago of elements of the population which have provided the major pools from which UICC has traditionally drawn its students. It is possible that through more effective recruitment efforts, UICC could increase somewhat its share of the higher educational market as far as traditional college age undergraduate students are concerned; this approach of course will be vigorously pursued. Several factors, however, combine to suggest that sole reliance on more aggressive recruitment would not produce the numbers of students at a level which the campus is prepared to serve: the pool of academically well prepared students in the City is becoming increasingly smaller; the lack of housing and the desirability of "going away to school" militate against UICC's attractiveness to many students, from both the City as well as the suburbs; competition for a smaller pool of students will become increasingly more intense, giving the competitive edge to institutions which may have more traditional college amenities to offer than does UICC. Chicago Circle's major effort to address these problems is through the expansion of its very successful Extended Day/Program PM which makes available programs of high quality at undergraduate and graduate levels at times when many residents of the metropolitan Chicago area are able to participate in them. Thus the opportunities for higher education have been greatly expanded for the "nontraditional" student in particular. The campus is also improving access by continuing to develop new programs that meet the emerging needs of society such as the graduate program in Art Studies/Therapeutic Techniques.

Extended Day/Program PM ($600,000)

Extended Day was initiated in Fall, 1977 with the goal of providing access to high quality degree programs for a population which had not been served by these same programs during the day. Funded with an allocation internal to the University of Illinois ($643,400) the program began with an anticipated enrollment of 1,200 students. More than 1,800 Extended Day students enrolled in the first year and enrollment increased by 50% to over 2,700 by Fall, 1978. As the attached table indicates, growth in demand is expected to continue such that if adequate resources are made available Extended Day enrollment in Fall, 1980 will reach 4,200 and by Fall 1983 approximately one-half of all students (ca. 9,000) will be enrolled in EDS or taking a part of their coursework during the evening hours.

That EDS responds to a demand not met by day programs is evident from demographic characteristics of the evening population. The following data compare evening with day students, with some of the important differences being:

	Day	Evening
Mean age of undergraduates	22	27
% Undergraduates under 22	63.4%	19.7%
Women as % of total	43.2%	45.9%
% Chicago residents	66.2%	70.3%
% minority undergraduates	33.2%	35.6%
% Minority graduate students	17.6%	22.7%

Extended Day has developed more rapidly than originally planned despite the relatively modest amounts of incremental resources provided to the campus. In FY 1979, the second year of the program, the total investment was $2.35 million, of which $1.25 million (54%) was provided by reallocation of resources internal to the campus. Almost 100 FTE faculty (10% of the total) were assigned to instruction in EDS in Fall, 1978, about twice the number as in Fall 1977. Incremental funds available in FY 1979 ($400,000) supported an increase of approximately 10 FTE faculty, while the campus shifted almost 40 FTE

from day courses. If the campus is to continue to meet the demand for instruction in EDS over the next five years, new incremental resources will have to be forthcoming in addition to continued redeployment of existing resources by the campus.

In order to meet the enrollment demand during the first three years of EDS, almost 70% of the incremental funds have been allocated to instruction, about 15% have been allocated to provide facilities and only 25% have been applied to academic and student support areas (Admissions and Records, Computer Center, Library, Student Affairs, Business Affairs, etc.). The request for FY 1981 is intended to provide additional hours and facilities to meet the demands of 6,400 students who will enroll in evening courses, and to allow the support areas to provide an adequate level of services. These support areas must respond to enrollment in terms of headcount rather than FTE students and must staff work stations and provide services over many more hours. They cannot easily shift an increasing share of available resources to evening without deleterious effects on the service level for the more than 15,000 students on campus during the day hours. This request will provide for the following:

Operations and Maintenance (Expanded hours and use of additional facilities) Almost $200,000 of these funds are needed for utilities.	$371,000	61.8 %
Student Affairs (Evening operations of Counseling, Financial Aid, Health Services, and Placement functions)	37,500	6.25%
Business Affairs (Evening operations of Bursar, fee collection, etc.)	23,500	3.9 %
Other Support Areas (Admissions and Records, Computer Center, Instructional Resources Development, Campus Information)	68,000	11.3 %

Instructional Units (Engineering, Math, Physical Sciences)	$100,000	16.7%

These funds will permit the campus to offer 27 degree programs (8 bachelors; 18 masters, 1 doctoral) in the evening for about 4,200 EDS students and 2,200 others who will take some of their coursework after 5:00 p.m.

TABLE 12
PROJECTED EXTENDED DAY PARTICIPATION
(Fall quarter enrollments in courses beginning 5 p.m. or later)

Headcount	(Actual) 1978	1979	1980	1981	1982	1983
New "EDS" Students	1,333	2,000	2,600	3,000	3,300	3,700
Cont "EDS" Students	1,377	1,400	1,600	1,800	2,100	2,300
Anticipated "Shift" Students*	1,654	1,800	2,200	2,600	3,400	3,800
Total HC**	4,364	5,200	6,400	7,400	8,800	9,800
FTE	1,649	2,025	2,655	3,290	3,925	4,455

* Those students who enroll in both day and evening courses, with more than one-half their load being in day courses.

** Excludes concurrent registrants from Medical Center who will take courses during evening.

M.A. in Art Studies/Therapeutic Techniques ($57,000)

The purpose of this program is to meet the continuing demand by the metropolitan student public for graduate study in art with a specialization in therapeutic techniques. This high demand is evidenced by the more than 200 artists, teachers, and other professional men and women who are currently on the list for Fall openings in Art/Design and Therapeutic Techniques. Further evidence of this demand was the Extension lecture series on Art Therapy in 1976 and 1977 that drew several hundred applicants, some from as far as Milwaukee and Urbana.

There is strong evidence that artist/teachers and artist/designer/therapists are needed in the burgeoning new social service, educational, and health care settings, and that non-verbal modes of expression and therapeutics can augment clinical care and intervention in a substantial and often dramatic manner. No such program is currently available in Chicago, nor in the entire State. The College of Architecture, Art and Urban Sciences is prepared to develop such a pioneering program, unique in character and effective in delivery.

Major components of this program will be Art Therapy, Human Development and Design/Environment, and the program will satisfy the requirements of the American Art Therapy Association. Placement and field work will include many agencies such as Psychiatric Research and Training-Michael Reese Medical Center; Chicago-Read Mental Health Center; Cook County Prison; residences for the elderly, juvenile homes, as well as special facilities for the blind, handicapped, drug or alcohol abusers, "half-way" houses, etc.

Based on an inventory of the inquiries received to date, it is expected that 10-12 students would be enrolled in the first year with growth to 30-40 students in five years. The anticipated expenditure of $57,000 would cover the cost of 2.06 faculty and staff, plus supplies, equipment and other contractual services.

EXPANSION OF RESEARCH CAPACITY ($373,100)

A central component of UICC's scope and mission is its responsibility to be a producer as well as a conveyor of knowledge. Thus, a principal planning objective of the campus is to further its research endeavors. UICC, like any major university, seeks to expand basic knowledge and understanding of natural and social phenomena; its urban setting provides particular opportunities and responsibilities in applied research activities.

Reference has been made to the enviable research record the campus already established. While continuing to receive limited amounts of State support for organized research, UICC has steadily increased its total of externally funded research. In FY 1978, for example, a State investment of $714,000 in organized research activities at UICC resulted in non-appropriated expenditures for research of nearly $3.3 million. That is, for every dollar the State put into organized research at UICC, the campus added $4.56 through external sources, a record of performance which far surpasses statewide norms.

The record, therefore, is a good one even though the State investment in organized research at UICC has been modest. By the judicious increase of organized research funding, the record can be improved. By so doing, the campus may meet more fully its responsibilities as a producer of knowledge and can generate additional income thereby improving the general cost effectiveness of the institution. One means for pursuing this strategy is through the establishment of organized research centers which are directly relevant to the particular missions of the campus, which focus on significant concerns, and for which there is great promise for the generation of significant levels of external research funding. These proposed activities fall into three major categories: research related to academic preparedness; applied research activities related to the urban mission; and basic research activities.

Research Related to Academic Preparedness. It is widely recognized that UICC has a responsibility to provide access to higher educational opportunities to many in the Chicago metropolitan area whose academic preparation may be, in one way or another, regrettably deficient. In the past, the campus has attempted to address the needs of such students largely through various special educational assistance programs of a remedial nature. Our experience has demonstrated, however, that these efforts may be somewhat thwarted by the lack of relevant research findings and theory. Because of our special concerns in this regard, it is appropriate that UICC be a center for various research activities whose findings can be useful in guiding efforts to deal with problems of academic underpreparation. The products of these programs will have an immediate and direct pay-off on this campus and will be a valuable resource for other institutions who seek to confront this pressing national problem. The proposed Center for Research in Language and Writing is expected to make important contributions of this nature.

Center for Research in Language and Writing ($79,600)

The general objective of the UICC Center for Research in Language and Writing is to promote multi-disciplinary postdoctoral research, basic and applied, on all aspects of written language. Sponsored research will be both rational and empirical in method, and theoretical and applied (i.e., pedagogical) in outcome. Specific objectives of the Center are:

1. to create a forum within which mature researchers, as fellows of the Center pursuing team approaches, can offer each other cross-disciplinary guidance in the design and implementation of significant projects inquiring into language and writing;
2. to provide financial support to Center fellows in the preliminary stages of designing fully elaborated research proposals slated for longer-term funding by off-campus agencies;

3. to disseminate research findings and information about on-going studies to other university language researchers, and to literacy educators at all levels of schooling, not only in metropolitan Chicago and Illinois, but across the nation at large, by means of a) ad hoc reports of major research projects, b) occasional papers and/or monographs of the Center, c) a Center journal, d) a regular colloquia series, and e) special conferences held at UICC;
4. to offer to schools and colleges in the metropolitan Chicago area a program of consultant services on all aspects of literacy education, as a vehicle by means of which the findings of applied research, where appropriate, may impact directly upon school programs and curricula, and classroom teaching practice.

Applied Research Activities Related to the Urban Mission. As recognized throughout our various planning documents, the setting of UICC affords particular opportunities for research on matters of vital concern to all urban areas. This research, in addition to expanding knowledge about significant public topics, can also be applied to the on-going conduct of human affairs and have an immediate impact. Thus, this kind of research activity constitutes a very appropriate and highly visible way by which the university can perform its public service responsibilities. The Center for the Study of Private Enterprise is a new program proposal for inauguration in FY 1981 while expanded funding is sought for the Urban Transportation Center and the Jane Addams Center for the Study of Social Policy which were initiated in FY 1980.

Center for the Study of Private Enterprise ($60,000)

The primary mission of the Center for the Study of Private Enterprise is to conduct its own organized research on the private sector of the economy. Included under this charge are all activities essential to the carrying out of both applied and theoretical research

including conception of research ideas, preparation of proposals, obtaining funds and marshalling of human resources from within the Business Administration faculty and other UICC and non-UICC units.

Initially the Center would:

1. continue the College of Business Administration's project on the study of free enterprise (funded by a grant from the Gould Fund),
2. house the College's research efforts in the area of small business in coordination with the College's Small Business Institute (funded by the United States Small Business Administration) and the College's leadership participation in the Illinois Small Business Development Center Network (a consortium of Colleges of Business Administration at UICC, Bradley University, Illinois State University and Southern Illinois University-Carbondale funded by the State of Illinois and proposed for funding by the United States Small Business Administration),
3. initiate research projects in the areas of marketing and public policy and of private sector productivity.

A system of priorities will be established giving those research projects highest priority which address urgent business and economic problems of private enterprises in the Chicago metropolitan area and which support the College's instructional programs, particularly the Master of Administrative Science Program in Business Enterprise Administration.

The Center will also provide supporting services for members of the UICC faculty who wish to carry out research in the private enterprise field on an individual basis. These services will be those which faculty researchers typically need to facilitate their work: proposal preparation, advice on grant or contract support, computer programming assistance, secretarial help, and student assistants for data collection and editing.

The Center for the Study of Private Enterprise is proposed as a separate, on-going entity within the College of Business Administration with its own director and staff, and with the director reporting to the Dean of the College of Business Administration.

Urban Transportation Center ($50,000)

In recent years, there has been a growing awareness of the effects of urban transportation upon every aspect of the American economy and a concomitant increase in the Federal funding of urban transportation projects and research. But there has also been a growing consensus among transit operators, decision-makers, and the public that these expenditures have not always been allocated in the most efficient manner. While some of this criticism is justified, it overlooks the formidable barriers to achieving a greater responsiveness to society's transportation needs through policy planning and research. The sheer size of the transportation sector, which accounts for 20% of national expenditures, makes it difficult to transmit technological changes to those who would profit by them. Policy and planning development on a national level often must be adapted to the needs of local areas.

UICC's program for urban transportation uses University resources to help adapt new operations practices, innovative technology, and planning developments to the needs of local transportation systems. A fully developed urban transportation center at a university would also provide research, technical, educational, and management training services to its local area with the objective of providing a continuing mechanism for serving the specialized needs of local and regional agencies. It would also serve as the lead institution for other universities in the region, coordinating research programs and sharing staff members.

This Center was given program approval for a FY 1980 start and received initial funding of $50,000, an amount sufficient to provide basic administrative support for the activity. An additional $50,000 is required to allow the Center to achieve fully its programmatic goals in this important area of national concern.

Jane Addams Center for the Study of Social Policy and the Conduct of Social Research ($50,000)

The Jane Addams Center for Social Policy is designed to address critical social problems through research and training activities of high calibre. Women, children, the aged, minorities, and other neglected, disadvantaged, and underserved populations have been identified as the groups with the most critical needs in the Chicago metropolitan area. The Center provides the mechanism or structure by which the research capability of the College can be linked to several social service agencies in designing and implementing desired training, demonstration, and research projects.

Thus, the Center will help social welfare administrators utilize the resources and technical expertise of the UICC College of Social Work; and in turn the College will bring its capability to bear upon the social welfare problems of the urban area of which it is a significant part. The very existence of the Jane Addams Center will provide both a focal point and an opportunity for the College to stimulate and conduct research. Such policy-oriented research will supplement the mission of the Jane Addams College of Social Work and enhance its position.

The Center has received $50,000 for FY 1980, a minimal amount for the start-up period. The additional $50,000 requested will fund the core administrative support required plus some program money which will enhance the Center's chances of obtaining external research funding. It is anticipated that by the fifth year the Center will be fully self-supporting, with the exception of the salary of the Director and one secretary.

Basic Research Activities. The expansion of new basic knowledge is a principal responsibility of any university. Two research facilities are proposed which will greatly enhance the ability of the UICC faculty to carry out this responsibility and the capacity of this campus to attract additional external research funding. One of

the proposals comes from the physical sciences to expand an already successful activity. The other is from the humanities that would consolidate and coordinate many on-going research activities and facilitate the development of multi- and interdisciplinary research.

Center for Quantum Electronics ($75,000)

The Laser Physics Laboratory in the Department of Physics at UICC is the only such facility in the entire Midwest. In this laboratory, the most advanced lasers currently available are combined with modern computer-based data acquisition systems to provide a state-of-the-art experimental facility which is unique among comparable facilities because of its considerable technological diversity.

The research presently in progress covers a broad range of atomic and molecular phenomena including collisional processes, atomic and molecular structure, nonlinear optics, laser chemistry, and laser development. The flexibility of the instrumentation is manifest by its ability to serve this wide variety of research problems. The requested resources will enable the expansion of current research activities into a new dimension. It is estimated that the total research capability, now capitalized at greater than $1 million, would be doubled by the infusion of the $250,000 (of which $75,000 would represent the first phase) necessary to extend the existing laboratory's instrumentation with the addition of the ultrashort pulse (picosecond) laser technology. Within the framework of presently available laser technology, the principal instrumentation used throughout the entire research effort, the picosecond pulse capability is the main deficiency in the current program. Furthermore, the inclusion of this capability enlarges the effort in a congenial and complementary fashion, since many facets of the extended program are common to the current activities.

Totally new areas of research, now impossible to pursue, could be undertaken. Among these would be kinetic and reaction processes in condensed media, coherent X-ray production, relaxation mechanisms

characteristic of biological molecules, and plasma diagnostic studies of laser/fusion microtargets. Capital investment is the sole limitation preventing activity in these areas by the presently assembled group. The staff is capable, the visibility of the research effort is sufficient to attract additional support, and the central facilities of the department can readily accommodate the expanded program. The successful implementation of an expanded program of the type proposed would, given the solid base represented by the current activities, constitute the establishment of an internationally recognized and unique research facility that would contribute directly to a broad range of national and state interests.

Institute for the Humanities ($58,500)

The primary purpose of the Institute is to insure support for research for the humanities faculties, members of which have this year obtained grants in the sum of $500,000. To improve research productivity, as measured by the quality and number of publications, as well as to effect a substantial increase in the level of external funding, a base of state support is required.

Both federal and private funds are more readily available to institutions that have established not only a scholarly record in the humanities (which UICC has done) but also a record of internal financial support for organized research in those disciplines, particularly in multi- and interdisciplinary areas. State funds will provide a director and staff charged with identifying grant opportunities for the humanities, assisting in the preparation of applications, and organizing the symposia and seminars that will attract eminent scholars to this campus on a regular basis.

To assist in attracting external support for the Institute, the staff will be responsible for collecting and disseminating information about all current UICC interdisciplinary research that involves the humanities. The goal of the Institute will be to reach a level of outside funding that will provide approximately one-third of the annual budget after its third year of operation.

The Institute will have as a secondary but important function the responsibility for fostering curricular changes suggested by the work of the Fellows, this to be accomplished by means of seminars that are based on the work of the current Fellows, whose research will be discussed in semimonthly seminars. Those members of the faculty who are most directly responsible for the curricula and programs of the departments represented by the Fellows will be an important component of the audience invited to these seminars.

A third responsibility of the Institute will be the creation and supervision of those instruments by which the work of the Fellows comes to be known to the world beyond the University - seminars and colloquia with Associate Fellows of the Institute drawn from business, the professions, labor, and the community college system; publications of Institute proceedings; and symposia sponsored by the Institute.

STUDENT DEVELOPMENT
($120,000)

Throughout the UICC planning statements consistent emphasis is placed upon the imperative of continuing qualitative development at UICC. If this posture is maintained, and adequate funding is made available for this kind of development, the people of the metropolitan area will have access to low cost, high quality educational opportunities through the doctoral level.

While there are many ways in which quality may be enhanced, perhaps the most crucial way to do so at UICC as it enters the 1980's is through what might be called student development activities. The position paper on student recruitment, admissions, and retention outlines a number of strategies for improving the overall quality of the student body and the retention of students that have been admitted. This can come from improvement in the operation of various special educational assistance programs and in the regular programs of the colleges, schools, and departments. This kind of upgrading is already underway within the resources currently available to the campus and major improvements are expected to flow from these efforts within the coming years. Another important mechanism which must be used is to provide incentives to attract academically talented students to this campus. At the graduate level many of our new programs desparately need inducements to attract exceptionally well qualified students to provide the required critical mass.

Graduate Fellowships ($120,000)

For an institution such as UICC to fulfill its function and to meet its responsibility toward the population of the region which it serves, developing and offering quality instructional programs is not sufficient. Conditions must also be provided

under which potential students can avail themselves of these educational opportunities. Chicago Circle, which serves predominately a metropolitan area with a large low-and middle-income population, must be and is particularly concerned about the ways and means by which its educational resources can become available to the largest number of qualified students without regard to their economic background. In particular, the Illinois State Scholarship Program and the Federal Basic Opportunity Grants Program assist UICC and other institutions in meeting this objective for undergraduate students.

Most universities of size and mission comparable to UICC have also developed strong fellowship programs in response to the financial needs of their graduate students. The University of Illinois as a whole has traditionally followed this pattern but has not been able to respond rapidly enough to the expansion of graduate programs and enrollment at UICC.

When UICC graduate programs were started in 1967, 13 fellowships were allocated to the campus to create an approximate parity between Chicago Circle and Urbana-Champaign. By 1974, the ratio of students to available fellowships was twice as high at the Circle as at Urbana; and in 1977, Chicago Circle had about three times as many students per fellowship as the Urbana campus. This increase occurred despite the addition of 20 fellowships between 1969 and 1977. UICC now requests the creation of 48 new University Fellowships at a level of support of $2,500 each to allow a return to the level of approximate enrollment parity. This increase would provide a total of 81 fellowships to be awarded among more than 2,500 graduate students.

LIBRARY DEVELOPMENT
($50,000)

UICC Library deficiencies have been recognized by many, including the Illinois Board of Higher Education. In a comparative analysis conducted recently by the staff of the IBHE, UICC was found to be 108,968 volumes below the mean number of volumes for its peer groups and below the mean expenditure level for the peer groups as well. In the IBHE study, only three other academic libraries in the State of Illinois fell below the mean for their peer group.

The Library has determined that an acquisitions budget of $1,439,000 is needed to support the present instructional, research and service programs of the campus. Approximately $1,179,000 will be available for Library acquisitions for FY 1980. This represents a $137,500 increment, which will help to cover the cost of inflation, and $125,000 gained from internal reallocation. Another $260,000, in addition to the normal price increases, is needed for the Library to correct some of its deficiencies while building a library collection designed to serve campus programs. An increment of $50,000 will help close the gap between the Library's needs and the presently available resources.

It is not intended that all of the library resource needs of the UICC community be met with on-site collections. Given continuing inflation, increasing rates of publication, and declining capital funds, increased emphasis on library resource sharing provides the most effective and efficient way to build up the resources of any library at any institution such as UICC. The UICC Library is attempting to reduce serious current deficiencies through a combined program of expanding essential on-site collections and further use of resource sharing programs, while making the holding in its collections known and available to others.

ADMINISTRATIVE IMPROVEMENTS ($80,000)

Office of Training and Staff Development ($50,000)

The Chicago Circle campus has initiated a personnel service unit, The Office of Training and Staff Development, to serve the professional, academic, administrative and civil service employees of this campus. The intent of this unit is to develop training and development programs which provide economic, work-quality, and human values benefits to the campus and to its staff:

1. By opening communications between and within units of the campus through organizational development and management effectiveness programs;
2. By reducing turnover, misapplication of human resources, and resistance to change by improving the quality of management and supervision on campus;
3. By improving work quality and output, employee satisfaction with conditions of employment, and morale factors by application of goal-setting and values clarification techniques.

The Office of Training and Staff Development will create programs for managerial, supervisory, and staff training, conduct seminars and career-path planning, and develop appraisal, development, delivery and evaluation capabilities needed for these tasks.

The thrust of the programs of this Office will be toward reducing costs, improving performance, preparing for and managing change, and improving the attitudes and satisfactions of the diverse population employed at Circle campus.

The program of the Office will utilize community, campus and business sector resources, where practical, to deliver services on a timely and cost-effective basis. The Office will, where appropriate, coordinate efforts with the Medical Center Personnel Services Training and Staff Development Department in order to share the costs and improve programs. The Office will seek funding for special programs for target populations from federal and business sources.

The immediate needs which must be met in order to continue the evolution of this department are:

1. The hiring of a Program Development Aide (1.00 FTE) to assist in adapting and/or creating training materials;
2. The hiring of clerical support (1.0 FTE) to handle secretarial, registration, communications and related functions;
3. Purchase of training materials and equipment;
4. Rental of training program materials;
5. Purchase of outside services;
6. Related operating expenses.

Through reallocated funds, the campus has already hired a Director, who has conducted needs analyses and begun the training/development program on a limited basis. The funds requested will allow this Office to expand its offerings to a greater part of the Chicago Circle campus, and to enlarge the scope of its programs.

Office Automation ($30,000)

Modern technology is reaching into the mainline office function. To prepare for effective use of this potential, Administrative Information Systems and Services (AISS) proposes a new office automation activity in the development unit of AISS to handle and specialize in the following:

1. Clerical work measurement and structuring;
2. Office electronics (e.g., word processing, telecom/mail);
3. Operations Research.

This activity will be integrated with the existing conventional data processing service. To initiate the activity and accomplish a minimum workload the first year 2.0 FTE are required.

1. Clerical Work Measurement - techniques such as clerical flow determination along with interviewing will be utilized to evaluate existing clerical activities and standards. Controls and activity measurements will be used to establish quantitative volumetrics of the activity. "Playscript" documentation and/or Short Interval Scheduling will be installed along with streamlining clerical flows. The end product of this kind of effort

usually is a procedures manual documenting the improved restructuring of the old clerical flow. Savings, both in manpower and increased production, are the product of a clerical work measurement project.

2. Office Electronics - the following new office machines would be researched as to their application in Circle campus clerical activities:
   --Message Switching (Electronic mail)
   --Facsimile (Image Transmission)
   --Telephony (Touch-tone Transmission)
   --Copying and High Speed Printing Techniques
   --Voice Recording and Answer Back
   --Automated Typesetting
   --Word/Text Processing
   --Video Display/Inquire
   When integrated, the above techniques have been demonstrated to increase clerical manpower capability and productivity. When the preceding are coupled with clerical work measurement, cost savings can be established, along with continuous monitoring. As a result, productivity of various clerical functions can be measured on an analytical basis.
3. Operation Research - we propose to use a wide variety of analytical tools which are generally categorized as Operations Research to determine optimum strategy to deploy and meet the campus goal of more efficient use of resources. These mathematically oriented techniques apply to both clerical and automated systems.

The application of office automation techniques in an integrated fashion is aimed at the twin problems of dwindling monetary resources and lower quality clerical personnel. No single technique will fully solve these problems but the practical application of the range of techniques available will significantly reduce the impact on the practical day to day operation of the Circle campus.

TABLE 13
MEDICAL CENTER NEW AND EXPANDED PROGRAM REQUESTS

I.	Urban Health Program	$465,000
II.	Clinical Education in Pharmacy	50,000
III.	Center for the Study of Patient Care and Community Health	50,000
IV.	Graduate Program in Associated Medical Sciences	50,000
V.	College of Medicine	264,900
	TOTAL	$879,900

INTRODUCTION

The Administration of the Medical Center sought requests for additional FY 1981 program funding from the academic and support units of the campus. From the original results, a list of program needs totalling $7,666,200 was described to the Board of Trustees in June, 1979. The following requests, totalling $3,295,000, represent the Medical Center's highest priority program needs.

The largest request is for replacement, by State funds, of Federal dollars that are no longer available ($2,000,000). These Federal capitation funds have supported instructional programs currently in place at the Medical Center in Chicago and at the regional sites of Peoria, Rockford, and Urbana-Champaign. Their replacement will be essential for the continuance of these programs at current enrollment levels.

Funds are requested for the third year of the expansion of the class size in the College of Dentistry ($415,300). Another enrollment-related request is for $50,000 for the further implementation of the recently-initiated master's program in the College of Associated Health Professions.

The Urban Health Program will require an additional amount of $465,000 in FY 1981 to carry forward fully the Medical Center's commitment to expanded educational opportunities for minorities in the health professions.

Other requests for State funds in FY 1981 stem from special needs related to the educational and service programs of the Medical Center. These include $50,000 for the Center for the Study of Patient Care and Community Health, an office committed to the study of health care needs and delivery in Illinois; $50,000 for the improvement of clinical education in the College of Pharmacy; and $264,900 for graduate medical education programs in the College of Medicine.

URBAN HEALTH PROGRAM
($465,000)

In FY 1978, the University of Illinois at the Medical Center prepared and presented a proposal to expand minority recruitment and retention efforts. In FY 1979, efforts were directed toward organizational development for accomplishing the UI-UHP targeted results. In FY 1980, the available funds will be used to begin to implement the plans developed in FY 1979. Additional funding is required in FY 1981 to further the program.

In FY 1981, the Medical Center campus will expand its efforts in each of the following result areas:

Increase Enrollment Diversity

The entering class of the University of Illinois College of Medicine was increased by six students in FY 1980 to allow the admission of a proportionately larger percentage of minority students. An additional amount of $130,000 is required for the second year of increased enrollments in FY 1981.

Talent Search

The Medical Center is committed to intensive efforts to identify minority students currently in high school or college who exhibit an academic potential for, and an interest in, completing a health curriculum and who would contribute to the diversity of the Medical Center campus student body. The funding requirements in FY 1981 for this aspect of the program are $65,000.

Talent Development

An inter-institutional project, extending across high school and college levels, will be expanded in FY 1981. This project has as its purpose the development of an increased understanding of the variety of health professions, and the academic requirements and rewards of those professions, on the part of potential students and their counselors and teachers. An additional amount of $50,000 is required in FY 1981.

Primary Care Residencies

The specific responsibility for the development of primary care residencies on Chicago's South Side has been assigned to the Abraham Lincoln School of Medicine (ALSM) of the University of Illinois College of Medicine. In FY 1981, the ALSM will add 3.0 FTE faculty positions to work specifically on this effort. The 3.0 positions will be comprised of a faculty position in each of the pediatrics, medicine, and obstetrics-gynecology departments. This will require $180,000 in new State dollars for FY 1981.

Ambulatory Care Facilities

The Office of the Vice Chancellor for Health Services will continue its efforts to expand ambulatory care services and training on the South Side. Some of the undertakings will be the completion of studies to identify South Side populations and their needs for ambulatory care, identification of existing and planned ambulatory care facilities, planning of new programs and coordination with the City, the County, several other agencies and institutions concerned for similar developments. It is anticipated that staff will be working in and, if possible, based on the South Side of Chicago. An additional $40,000 in State dollars will be required.

The total request for additional funds in FY 1981 for the Urban Health Program is $465,000.

CLINICAL EDUCATION IN PHARMACY
($50,000)

Traditionally the education and training of a pharmacist focused on the drug and dosage form with emphasis on physical, chemical, and pharmacological properties. In the past decade, since the development of a scientific base of understanding how a dosage form can affect drug absorption and how drugs can interact adversely in the patient, the pharmacist has come to accept more responsibility for monitoring drug utilization. Clinical education has been introduced as part of the education base of the pharmacist so the necessary skills can be acquired. Federal initiatives, as evidenced by the capitation funding eligibility requirement of clinical pharmacy as part of the curriculum, facilitated this educational development. Clinical pharmacy education has been recognized as so vital to proper professional practice preparation that it is now an accreditation requirement. Recognition that a limited number of pharmacists with advanced clinical education is essential in the spectrum of health care providers available to the citizens of Illinois is shown by the recent initiation of a Doctor of Pharmacy (Pharm.D.) degree program at the Medical Center.

Clinical pharmacy practice activities extend into several spheres. The pharmacist is expected currently to serve as a drug counselor for the patient. Among the activities directed to this end are the taking of medication histories, the maintenance of complete drug utilization profiles, and the education of the patient on proper drug administration and on the importance of compliance with the prescribed regimen. In order to monitor effectiveness of therapy, the pharmacist evaluates therapeutic outcomes, screens for drug interactions and adverse drug reactions and advises the patient on proper use of medications available for open purchase, with special attention to compatibility with prescription medications. Much of the information the pharmacist gathers through these activities is fed back into the patient care system through communication with the prescriber and other health professionals. The pharmacist also provides the prescriber with drug information, advice on dosage form selection, and consultative service on selection

of drug of choice. The pharmacist, in implementing clinical practice activities, also maintains responsibility for dosage form preparation in, for example, intravenous additive mixtures. Proper storage to assure stability, product selection to assure quality, and control of distribution to minimize medical errors and drug abuse are important functions in providing optimal patient care.

Curriculum changes made to provide the proper educational background for this role include the addition of didactic instruction in disease states and drug therapy, addition of clinical education in contemporary practice settings, and clinical education in organized health care delivery settings where advanced clinical pharmacy practices have been established.

Clinical education is more expensive than didactic forms of education. Affiliations are necessary with practice sites in which the intended clinical role is exemplified and necessary supervisory staff for practitioner-educators are available. The student/faculty ratio for clinical education must be small to be effective.

A ratio of 4:1 at both the professional and graduate levels should be achieved over the next few years to implement fully the clinical components of the curricula. The student/faculty ratio for the non-clinical components of the professional curriculum is to remain at 9:1. An additional 1.5 FTE faculty positions are requested in FY 1981; the requirement for additional State dollars is $50,000.

CENTER FOR THE STUDY OF PATIENT CARE AND COMMUNITY HEALTH ($50,000)

The Center for the Study of Patient Care and Community Health was established in 1971 to provide the Medical Center campus, the University, and the region with a much-needed capability for health services research and development. The initial idea, still valid now, was to gather a multi-discipline group of experts dedicated to the study and improvement of health care.

The Study Center was placed originally in the newly developed School of Public Health, where it developed expertise in health data and health planning. A small staff has served as a resource primarily to local and state agencies. The health data activity of the Center is now well on its way to becoming a major regional resource.

In 1977, it was decided to move the Study Center to the new Office of Vice Chancellor for Health Services. The intent of placing the Center at the level of campus administration was to provide a health services research and development resource for the entire campus, and, at the same time, allow access for the Center to all health services activities of the University.

A reorganization within the Study Center in late 1977 resulted in the establishment of four offices, each reporting to the Director of the Center. The offices are: 1) the Office of Health Information, 2) the Office of Organizational Development, 3) the Office of Health Services Planning and Finance, and 4) the Office of Health Services Research and Evaluation.

The general philosophy of the Center is that it will function to serve others--that is, the Center, by evaluating, investigating, planning, developing, consulting, supplying data, etc., will accomplish its own ends while assisting others to develop programs. Therefore, the funding of the Center should be derived from three primary sources: a relatively small base of State dollars, "fees" for services to other units, and grants and contracts. There needs to be, however, a nucleus of experts on "hard" State funds, who can provide a stable and basic core of

expertise in the four offices--individuals who can write grants and submit contracts, and who can arrange consulting agreements with the University Hospital and other health care facilities, thus generating additional funds. Accordingly, State dollars would be used to fund the positions of Center Director, four Office Directors, and three secretaries--and for a modest amount of expense and equipment money.

In FY 1981 dollars, $280,000 is needed for the Center; $180,000 is available through base funding. An increment of $50,000 in State funds is requested in FY 1981 for the Office of Health Services Research and Evaluation. The remaining amount will be requested at a later time. The FY 1981 increment will be used to hire a Director of Health Services Research and Evaluation, and to meet the related nonacademic support and expense needs.

When the Study Center was established, one of the primary purposes was to study the amount, quality, efficiency and effectiveness of health care delivered on this campus, to see how our health care might be improved. In addition, the Study Center was to initiate health services research projects on campus, as well as in affiliated institutions. Since then, the Urban Health Program has been initiated; evaluation of health care delivery is an important component of the program. Recently, the faculty have committed themselves to the further development of ambulatory care on this campus. To facilitate all these activities, the Center needs a Director of the Office of Health Services Research and Evaluation who is familiar with the delivery of health care, who is trained in health services research and evaluation. It is anticipated that the Office Director will initiate projects which will bring in fees, grants and contracts, thus allowing this Office to expand its activities.

GRADUATE PROGRAM IN ASSOCIATED MEDICAL SCIENCES ($50,000)

In 1978 the Board of Higher Education approved the initiation of a masters program in Associated Medical Sciences. Eleven students were enrolled in the Fall, 1978, with concentrations in Medical Dietetics, Medical Laboratory Sciences, and Occupational Therapy. The funding for the initial implementation of this program was achieved through internal reallocation at the Medical Center campus. In 1979-80, through additional reallocation, the masters program will be somewhat expanded with an anticipated enrollment of approximately thirty head count students, generating about fifteen FTE. It is planned to expand the program to include a concentration in Biocommunication Arts in FY 1981. Accreditation requirements for this program have changed; the basic entry level to the profession now is at the masters degree level.

New state dollars will be required in FY 1981 to continue the implementation of the approved program. The amount requested is $50,000. It will not be possible to generate funds for this program via internal reallocation for a third year. If the needs for allied health manpower in Illinois, educated at the masters level, are to be met adequately over the next decade, it is necessary that the implementation of the proposed program proceed. The requested funds will allow the addition of 2.2 FTE faculty.

REGIONAL RESIDENCY POSITIONS
($264,900)

The University of Illinois College of Medicine has continued to respond to the mandate of the 1968 report of the Board of Higher Education titled, Education in Health Fields. Undergraduate enrollment has increased and the clinical schools in Peoria, Rockford, and Urbana-Champaign are approaching their enrollment plateaus, thus nearing fulfillment of objectives for regionalized undergraduate medical education.

Of equal importance is the University's role in graduate medical education, the post-M.D. experience which yields the finished practitioner. It is the graduate experience or residency which determines the specialty career and contributes significantly to the practice location of the young physician and hence the attraction and retention of physicians in Illinois. The importance of graduate medical education is emphasized in the March, 1976 IBHE report, A Master Plan for Post-Secondary Education in Illinois:

> "Each medical school in Illinois should be responsible for a network of clinical affiliations to enable the development of residency programs with the following characteristics: a) by 1980 each medical school should have educational responsibility for at least as many first-year residency positions as it will have graduating physicians. The number of post-first year positions should be adequate to permit sufficient opportunity for all first-year residents to complete their residency training; b) the medical school should assume responsibility for recruiting graduates of Illinois medical schools and then graduates of other American medical schools; c) at least one-half of all the first-year residency positions should be in the specialties of family practice, internal medicine, and pediatrics; d) at least one-half of all first-year positions should be offered in institutions and facilities affiliated with the medical school, which provide predominantly primary and secondary health care to their communities. The two public medical schools should explore means of expanding the geographic distribution of their residency programs."

In Chicago, the number of first-year residency positions available in the University or University-affiliated programs is somewhat

behind the total number of graduates from the Abraham Lincoln School of Medicine, but the projections indicate that by 1984 there will be almost an exact match between graduates and residency positions.

Such is not the case in the regional schools where the projections are as follows:

	Expected number of graduates 1980	Expected number of graduates 1984	Currently available first-year residency positions	Projected deficit 1984
Peoria	39	76	50	26
Rockford	41	48	12	36
Urbana-Champaign	0	24	4	20
Total	80	148	66	82

Unless new residency positions are created, there will be a large deficit in first-year residency positions available to University of Illinois graduates. This deficit will increasingly contribute to the loss of graduates from the State. The problem is compounded by the fact that not all of the available residency positions are filled in spite of their relative scarcity. This is due to the fact that they are not perceived as being desirable by graduating medical students. This perception is to a large extent related to the limited influence of the University on the nature and quality of some of the residencies. Influence has in fact been limited by lack of financial resources which permit the University to exercise its "corporate responsibility" for this aspect of the continuum of medical education.

It is essential that the University support the educational component of graduate medical education in order that it be able to influence the academic quality of the existing programs, in order to be more closely identified with the programs and in fact become the accredited educational entity, and in order to be able to initiate new programs.

An amount of $264,900 is requested in FY 1981 to fund an additional 28 residency positions. Additional amounts will be required in FY 1982 and FY 1983 to fund fully the additional 82 positions required by 1984.

TABLE 14
SUMMARY OF PROGRAMMATIC REQUESTS FOR UIUC FOR FY 1981

A.	Projects that Have Received Special State Appropriations in Recent Years		$ 1,357,300 (190,000)[1]
	1. College of Veterinary Medicine	$ 850,000	
	2. Expansion of Interdisciplinary Work in the College of Law	100,000	
	3. Visual Resources Laboratory	198,000 (190,000)	
	4. Mutagens and Carcinogens in the Environment	84,000	
	5. Solar Energy	51,000	
	6. Krannert Center for the Performing Arts--Operating Deficiencies	74,300	
B.	New Programs		43,500
	1. Ph.D. Program in Regional Planning	43,500	
C.	Expansion and Improvement of Existing Programs		790,200 (137,500)
	1. Broadcast Journalism Sequence in the Department of Journalism	76,000 (37,500)	
	2. Energy Management--Building Energy Audits	52,000	
	3. Nuclear Physics: A Large Superconducting Accelerator Facility	69,200	
	4. Pest Management Clinic	34,500	
	5. Laboratory Programs in Computer Science	98,000	
	6. Atmospheric Science Program	82,000	
	7. Program in Surface Chemistry and Catalysis	175,000 (100,000)	

[1] All amounts in parentheses are non-add items and represent that portion of the figures shown immediately above them that are being requested on a nonrecurring basis.

8. Soybean Improvement		$ 101,000	
9. Principal's Scholars Program		102,500	
D. Consolidation and Improvement of Interdisciplinary Efforts			$ 134,400
1. Human Factors Engineering		64,000	
2. Thermal-Hydraulics of Nuclear Reactor Safety		70,400	
E. Student Realignment			250,000
1. Response to Changing Student Demand		250,000	
TOTAL			$ 2,575,400
			(327,500)

INTRODUCTION

The requests for support for new programs and for major additions and improvements in existing programs are made within the context of several factors, developments, and plans at UIUC:

1. The twenty proposals being submitted by UIUC have been selected from among a total of approximately seventy-eight that were forwarded by various units at UIUC. The campus Council on Program Evaluation (COPE) examined all submissions and assigned priority ratings to each. The campus administration at UIUC has followed very closely the priorities recommended by COPE; thus, the items being submitted are the product of close scrutiny by a faculty/student committee with wide experience and knowledge concerning programs on the UIUC campus.
2. Internal adjustments and reallocations that have been required to offset, in part, the significant losses to inflation since FY 1971 have seriously reduced the ability of the campus to reallocate funds for programmatic purposes. The impact of these losses to inflation has been progressive and cumulative, and reallocation for programmatic purposes becomes increasingly more difficult from year to year.
3. UIUC, being a mature, comprehensive, research-oriented campus has most of its degree programs in place. Consequently, there are very few instances (one in the FY 1981 programmatic requests) in which the addition of new degree programs is anticipated. Instead, additional funds for programmatic support at UIUC are sought in order to respond to rapid changes in the content and orientation of many disciplines, to meet glaring deficiencies, and to take advantage of current curricular, research, and outreach developments so that the excellence of existing faculty and other resources may be maintained and enhanced. It is recognized that such requests may not possess the surface glitter of some proposals that relate to entirely new audiences or that open up whole

new curricular areas. However, the administration at UIUC strongly urges that the importance of maintaining excellence and of extending existing programs of quality be stressed and that a very high priority be given to such proposals.

4. Certain academic areas on campus (and off) are scheduled for modest enrollment growth in the future, in part at the expense of other areas. It is anticipated that various fields within Agriculture, Commerce and Business Administration, and perhaps Engineering will grow somewhat. It appears now that some of that growth will reflect changing interests on the part of students and prospective students with some declines continuing in certain Liberal Arts fields and in Education. Modest increases in enrollments in Law (if funds for an addition to the Law Building are approved) and Veterinary Medicine are planned, and substantial growth in participation in continuing professional education is anticipated. Much of this latter effort will, it is assumed, be noncredit and self-supporting.

   As campus planning continues, it is with the assumption that the decline of the number of college-age youth in the 1980's will have little or no impact on the Urbana-Champaign campus. The present popularity of UIUC programs is not likely to decline, and the fact that the campus cannot now admit thousands of qualified applicants because of a shortage of space and resources suggests that the campus could actually increase its enrollment in the 1980's if it were deemed desirable to do so. In any event, there is no reason to believe that enrollment will decline, unless of course a planned reduction is made.

5. It will be noted that requests for equipment play a prominent role in many of the proposals. The lack of funds to maintain teaching and research equipment and to purchase new items is creating a very serious problem for UIUC. The importance of this aspect of these proposals cannot be overstated.

Another serious problem not reflected in these operating budget requests deserves to be emphasized, and that is space related to various library needs. The UIUC Library is a major source of pride and a major resource for scholarship. It has occupied a favored spot in previous operating budgets and has been the recipient of significant amounts of reallocated funds from other campus units. UIUC does not, however, have the resources to enlarge and to modernize library space. Repeated efforts to obtain such funds have failed, and the need is drastic for additional space and an upgrading of present space (e.g., air conditioning in library storage areas to preserve the collection). Deterioration of the collection is already occurring, and given the long lead time for any major remodeling or for new construction, there is no time to waste.

COLLEGE OF VETERINARY MEDICINE
($850,000)

The major goals of the College of Veterinary Medicine for the next six years are as follows:

1. to complete the construction program outlined in Food for Century III through the capital budgeting process,
2. to replace all capitation support with State funds,
3. to enroll 104 students in the freshman class by FY 1982,
4. to reach a level of State support of $18,150 per FTE student (FY 1981 dollars), and
5. to improve the teaching, research, and public service programs of the College.

The College, with financial help from the State and the University, already has been able to make considerable progress in reaching these goals.

Construction funds ($21,017,800) have now been approved for the Veterinary Medicine Basic Sciences Building. Architectural plans are being completed at the present time with an anticipated bid date in September, 1979. It is expected that the building should be ready for occupancy in the Fall of 1981.

Two swine confinement research buildings funded in FY 1979 should be completed by Fall 1979. These facilities will allow the College to strengthen its swine research program quite markedly. Additional facilities are in various planning stages.

The College established a projected goal in FY 1977 of $15,000 per student in State appropriated funds as a support level that would provide additional faculty to allow the planned changes in the new curriculum and to provide faculty for a major expansion in the College's research programs. A goal of $15,000 support per student was agreed to and projected in FY 1978 following a comparison of the State appropriated support levels for colleges of veterinary medicine in Pennsylvania, New York, California and Florida. Each of these institutions has developed both strong professional educational programs and recognized

excellence in research programs. The FY 1978 State appropriated support levels for these four colleges of veterinary medicine averaged $21,251 per professional student FTE or $17,941 per student FTE when both professional and graduate student FTE's were considered. These figures are directly comparable to the respective State appropriated support levels of $10,857 per professional student and $9,711 for all students in the College of Veterinary Medicine at Urbana-Champaign. The FY 1981 projection of $18,150 per student reflects the inflationary increase in that planned support level.

Requests for additional State operating funds for the College have totaled $3.4 million for the years FY 1971 through FY 1980. The College has received slightly more than 1.0 million in response to those requests.

In addition to the positive changes mentioned in its operating budget request of last year, it has a number of new changes to report. The research programs of the College of Veterinary Medicine were reviewed by a USDA Evaluation Team this Spring. The team reported a vast improvement in the general research programs of the College and cited a number of areas as being outstanding. The recent expansion of both the toxicology and reproductive physiology research programs was considered excellent. Research programs in food animals dealing with blood borne parasites, enteric infections, and drug residues were particularly strong. Research programs in comparative cancer and immunology were also mentioned.

Funded research projects from outside sources in the College increased from 70 in FY 1977 to 89 in FY 1979. In addition, $180,696 in formula funding and $69,276 in competitive grant funding were received in FY 1979 under the new Federal USDA animal health and disease research program. Equine research support from the Illinois Department of Agriculture was established in 1977 and expanded to a support level of $98,000 in 1979. None of these Federal or State funding sources currently generate ICR funds, so the level of ICR funding is not a good indicator of the College's research improvement. This is particularly true of sources of food animal research support.

The College is now initiating improvements in its professional curriculum that will provide students with a broader course selection

and expanded opportunities for clinical training during the last two years of the curriculum. Particular attention is being given to the food animal curriculum in line with the objectives stated in the Food for Century III program.

Even with the staffing improvements that have been made during the past several years, the clinical faculty still spends more than 70% of its time involved in assigned teaching duties. Research output can increase even more as faculty to student ratios decrease as the result of adding new faculty.

The number of research faculty also has an impact on the College's ability to compete for dollars under the USDA animal health research formula-funded program, for faculty FTE's and dollars from other sources and designated for food animal research are two components of the funding formula.

Although the College of Veterinary Medicine has made great strides forward in acquiring new funds in recent years, it has reached a very critical point in its history. First of all, capitation support has been reduced 20% for FY 1980 as compared to the FY 1979 level. It is increasingly clear that it will be eliminated within the next several years, making replacement essential to provide professional and graduate student support. Secondly, a number of new colleges of veterinary medicine are now opening in the country and several more are scheduled to open during the next several years, making competition for good faculty extremely fierce. Thirdly, the College must maintain its present momentum and continue to strengthen its research programs. Finally, it must be able to add faculty to accommodate its changing teaching curriculum and the increased enrollment that is tied to the completion of the Veterinary Basic Sciences Building in the Fall of 1981. If the College is to continue to move forward in meeting these goals, it must receive the financial support outlined in the table that follows.

The $850,000 in program improvement funds will be utilized to maintain and improve the teacher and service programs of the college, as well as providing increases in scientific supply categories. New faculty will be added to accommodate additional professional and graduate students, as

RESOURCES

	FY 78	FY 79	FY 80	FY 81[2]	FY 82[3]	FY 83[3]	FY 84[3]	FY 85[3]	FY 85[3]
State Approp. Funds	$ 3,626.2	$ 4,223.2	$ 4,716.7	$ 6,088.5	$ 7,144.7	$ 7,844.7	$ 8,394.7	$ 8,701.0	$ 8,813.0
ICR	111.8	111.8	90.7	110.0	115.0	120.0	125.0	130.0	135.0
Capitation Funds	109.5	207.3[1]	260.9	96.0[1]	--	--	--	--	--
TOTAL FUNDS	$ 3,847.5	$ 4,542.3	$ 5,068.3	$ 6,294.5	$ 7,259.7	$ 7,964.7	$ 8,519.7	$ 8,831.0	$ 8,948.0
Incremental State Funds	--	--	493.5	1,371.8	1,056.2	700.0	550.0	306.3	112.0
FTE Students	373.4	382.7	399.2	420.0	442.4	460.7	480.0	493.0	493.0
Dollars/FTE Students	$10,304	$11,869	$12,696	$14,987	$16,414	$17,288	$17,749	$17,913	$18,150

[1]Estimate of capitation expenditures
Capitation award estimate September 1, 1979 (FY 80), $194,500.

[2]FY 1981 Budget
Increment: $150,000 Capitation Replacement; $850,000 Program Improvement; 8.0% salary increase - $356,004; 7.5% expense increase - $15,750

[3]FY 1981 dollars
Does not include salary and expense increases

well as to lower the teaching contact hours of existing faculty to acceptable levels. Emphasis is again being placed on the clinical teaching programs. Assistant professors in food animal medicine and surgery, equine medicine, and small animal medicine are needed on the hospital staff. Several new resident training positions would also be added. A gastrointestinal physiologist and an additional toxicologist would be added to the Veterinary Biosciences faculty to provide additional preclinical training in those areas. A food animal epidemiologist, pathologist, and microbiologist would be added to the teaching and service programs of the Veterinary Pathology and Hygiene Department and to the Diagnostic Laboratories.

Two new teaching associate positions would be added to the preclinical departments to assist in laboratory instruction. Two animal caretakers and several veterinary technicians would be added to the teaching hospital staff to help care for the increased animal care load that has occurred over the last two years. Medical laboratory technicians would also provide supportive services in the preclinical teaching programs. The Biomedical Communications Unit would be expanded to provide photographic and medical illustration support for the College's programs, and two word processing operators would be added to the College's new Word Processing Unit.

COLLEGE OF VETERINARY MEDICINE PROGRAM PROJECTIONS
ENROLLMENTS

Headcount	FY 78	FY 79	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86
Professional									
VM-1	86	91	91	91	104	104	104	104	104
VM-2	76	86	91	91	91	104	104	104	104
VM-3	86	76	86	91	91	91	104	104	104
VM-4	86	86	76	86	91	91	91	104	104
Subtotal	(334)	(339)	(344)	(359)	(377)	(390)	(403)	(416)	(416)
Graduate	50	55	70	75	80	85	90	90	90
Interns	5	6	7	8	8	8	10	10	10
Residents	7	8	10	14	16	20	24	24	24
TOTAL	396	408	431	456	481	503	527	540	540
FTE									
Professional	334.0	339.0	344.0	359.0	377.0	390.0	403.0	416.0	416.0
Graduate	33.4	36.7	46.7	50.0	53.4	56.7	60.0	60.0	60.0
Post-Prof.	6.0	7.0	8.5	11.0	12.0	14.0	17.0	17.0	17.0
TOTAL	373.4	382.7	399.2	420.0	442.4	460.7	480.0	493.0	493.0

EXPANSION OF INTERDISCIPLINARY WORK IN THE COLLEGE OF LAW ($100,000)

In FY 1979, the College of Law presented a total request of $263,000 as a program package to be phased over a two-year period. The College received $50,000 for FY 1979 to fund the two assistant professorial lines listed in the total program. For FY 1980, the College received $37,000 which will fund one associate professorship and one secretarial position. Since the remainder of the package is unfunded, the current request is for a total of $100,000. The justification for the College of Law program remains the same as in last year's request.

The College of Law already has joint degree programs with various units--the Institute of Labor and Industrial Relations, the Department of Business Administration, the Department of Accountancy, the Department of Political Science, and the College of Medicine. Faculty members from the College of Law have participated in both teaching and research programs with several other units--the College of Engineering, the School of Social Work, the Institute for Environmental Studies, the Department of Sociology, the Department of Psychology, the Department of Landscape Architecture, and the Office of International Programs. In addition, the College of Law has received requests from many other units--the College of Education, the School of Basic Medical Sciences, the English Department, etc.--to provide input in even more programs.

Without cataloguing the requests the College has received, it is clear that law is becoming increasingly important to persons within many disciplines on the campus. Unless the College can increase in faculty size, it will be impossible for it to respond to the many intriguing possibilities that are constantly presented. Even with the proposed increase in faculty numbers, the College would have to choose those areas where law faculty interests coincide with the proposals. The College envisions the addition of new courses and seminars in the College of Law that would deal with problems on the developing periphery of the law and of joint offerings outside the College with other campus units. The increase in faculty size would also provide more opportunity for research in such areas as economics, the legal problems of the medical profession and public health, criminology, the legal problems of a changing science and technology, etc.

Funds have now been provided for remodeling existing space to accommodate the new faculty and staff related to this request. The portion of the operating budget that remains unfunded is shown below and has been spread over the next two years:

		FY 1981
Academic Staff		
1.00 FTE Professor		$ 35,000
1.00 FTE Assistant Professor		28,000
Nonacademic Staff		
1.00 FTE Placement Director		14,000
3.00 FTE Secretaries		23,000
	TOTAL	$100,000

VISUAL RESOURCES LABORATORY
($198,000)[1]

The Department of Art and Design is regarded as one of the best art departments in the nation and is an acknowledged leader in art curriculum innovation and in the training and development of students who upon graduation immediately step into a broad variety of professional positions. The strength of the Department was recently affirmed during the visit of the accreditation team from the National Association of Schools of Art.

The members of the accreditation team were particularly excited about the Visual Resources Laboratory that has been established in the Department through three previous special allocations from the State of Illinois and through reallocation of approximately $130,000 in campus funds since FY 1972. They pointed out to the campus administration that if the final phase of the project were completed as planned, the Department of Art and Design would have one of the finest facilities for teaching cinematography in the nation. They saw a great need for such a facility in the Midwest, for at the present time the major centers for cinematography are in either New York or California.

An incremental allocation of $45,000 has been provided to the Department of Art and Design for FY 1980. This allocation will provide nearly all of the staff required to operate the Laboratory except for hourly student help and a technical assistant. Additional funds for teaching equipment are included in this operating budget request as a nonrecurring request for $190,000 for the purchase of additional equipment. After several years of operation, the staff members of the Laboratory have determined that such an amount will be required to upgrade equipment and to replace

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[1] Of this amount, $190,000 is nonrecurring.

nonfunctioning items, and they have submitted a detailed list of equipment items to justify their request.

Funding of the final portion of the Visual Arts Laboratory request is essential if the Department is to provide students, especially those in graphic design, industrial design, medical art, photography, and cinematography, with up-to-date equipment and processes. The Laboratory use and accessibility to these students for experimentation and training in the use of modern technological processes are invaluable in providing them with the proper learning experiences that are now required in their education. Indeed, it is not possible to prepare students properly for careers in those areas of study mentioned without facilities and equipment that are incorporated in the Visual Resources Laboratory proposal.

The funds being requested for FY 1981 and FY 1982 are shown below:

	FY 1981
Academic Staff	
1.00 FTE Technical Supervisor	
Nonacademic Staff	
1.00 FTE Attendant	$ 8,000
Equipment	
Annual Equipment Replacement	
Additional Equipment	190,000[1]
TOTAL	$ 198,000

[1]Nonrecurring amount.

MUTAGENS AND CARCINOGENS IN THE ENVIRONMENT ($84,000)

The Institute for Environmental Studies proposes to expand its present research efforts into a broad, interdisciplinary program of environmental quality management focused on mutagenic and carcinogenic (cancer-causing) substances in the environment. The objectives of the program are: 1) to develop and refine methods for detecting and identifying these hazardous substances, for examining their sources, transformations, fate, and effects in the environment, and for making public policy decisions regarding their use, and 2) to provide educational opportunities for individuals who will be able to fill the large present and anticipated demand for professionals in this field. Because of its current, highly successful work, the Institute for Environmental Studies is in a unique position to attain national leadership in this rapidly emerging and vitally important field, if it is given the necessary additional resources.

The detection of mutagenic and carcinogenic substances in the air, water, and food, accompanied by a heightened public awareness of the threat they represent, has brought the identification and control of these substances to the forefront of national attention. In Illinois, with its large urban areas and its intensive agriculture, the population is exposed to many chemicals, the long-term effects of which are largely unknown. Recent findings that the majority of human cancers are caused by environmental factors have made the issue one of concern to every citizen of the developed nations, where advanced chemical technologies are producing approximately 1,000 new substances every year. However, very little is known about the occurrence and behavior of these hazardous substances in the environment. Also poorly understood, but ultimately of equal importance, are the potential long-term impacts of genetically active chemicals on the balance of the ecological and food-production systems upon which human survival ultimately depends. Thus, all of these uncertainties point to the need for a base of scientific information upon which public policy decisions can be made. A unified, interdisciplinary study of the problem's many phases is essential to manage these

substances for the benefit of society without exposing the populace to unacceptable hazards. Given the rate at which new chemicals are being introduced and the ignorance of their behavior once they reach the environment, the laboratory tests used in the past are inadequate. Fortunately, a new approach has been made possible by the discovery of a high correlation between mutagenicity and carcinogenicity. The vast majority of all substances known to be carcinogenic have also proven to be mutagenic. Thus, it is possible to detect the presence of these hazardous substances by using mutagen screening tests. Such tests, developed here and elsewhere, have been refined by members of the Institute faculty and have been made applicable to environmental samples. Following the detection of mutagenic substances in the environment using such tests, an integrated interdisciplinary approach can be followed to characterize chemically the mutagenic compounds, to assess their ecological impacts using model and field systems and, through economic benefit-cost-risk analysis, to evaluate alternative management policies for control of these materials.

The aim of the proposed program is not to monitor the environment in a particular geographical region for the prescence and effects of mutagenic or carcinogenic substances. Rather, its purpose is to develop methods for making such assessments and for evaluating alternative methods of managing these substances. Once developed, the methods can be applied by governmental agencies, decision makers, and others in combatting the problems which have resulted from the use of such chemicals. A number of governmental agencies are presently under pressure to develop guidelines in their area but suffer from the lack of basic information and a framework of policy analysis which this program would address. Through participation in the research effort and through courses to be developed as part of the program, students will be trained to fill the current and projected shortages of professionals in this field.

The Institute has made a substantial commitment to this program by adding faculty positions in environmental genetics and environmental organic analytical chemistry. To implement the proposed program fully, the Institute's core faculty must be further expanded to include a systems ecologist, a policy analyst, an environmental toxicologist, and an experimental ecologist. The new faculty members will be involved in tracing the

environmental behavior of mutagens in field and laboratory model ecosystem approaches, developing mathematical models to predict their movement and accumulation in the environment, developing improved procedures for and conducting analyses of the risks and benefits of using the substances, developing alternative strategies for managing the use of these agents, developing courses on these and related topics, and working with individual students on specific projects. The Institute requests funds to facilitate the participation of faculty from the Schools of Public Health and Life Sciences, Basic Medical Sciences, the Colleges of Law and Agriculture, and other units of the University in this comprehensive program. In addition, new laboratory equipment and space are needed to supplement the existing facilities.

The proposed budget request, spanning the next three fiscal years, is shown below. These funds will supplement the allocation of $92,000 that was made to the Institute for FY 1980.

	FY 1981
Academic Staff	
3.00 FTE Assistant Professors	$ 60,000
1.00 FTE Academic Professional	15,000
Nonacademic Staff	
1.00 FTE Secretary	9,000
TOTAL	$ 84,000

SOLAR ENERGY
($51,000)

The development of energy deficits is inevitable as this century draws to a close. Equally inevitable is the acceptance of solar energy as an alternate source to bridge at least a portion of the developing gap. The questions of how, when, and at what cost are at hand. The Department of Mechanical and Industrial Engineering in the College of Engineering is willing to make a commitment and to take the lead in developing a solar energy program in the State of Illinois.

There are a number of good reasons for establishing a teaching, research, and public service program at UIUC:

1. The Department of Mechanical and Industrial Engineering has traditionally been one of the strongest in the nation in the thermal science area. This strength is a necessary complement to a solar energy program.
2. Each location throughout the United States has its unique weather, latitude, atmospheric characteristics, etc., which must be understood in the utilization of solar energy at the respective location. The program at UIUC would develop the necessary data base, analytical tools, simulation, and modeling methods, and would provide an Energy Extension Service for the residents of Illinois. The cost-effective utilization of solar energy is a vastly more complex engineering problem than the installation of conventional, oversized, heating and air-conditioning equipment. Hence, the presence of this program will greatly facilitate the economical utilization of solar energy and will accelerate its introduction into energy intensive industries.
3. Considerable research and development work needs to be done. Further expansion of governmental support in the solar energy area is inevitable. The University of Illinois at Urbana-Champaign should be in a position to participate and should be a leader in the development of this field as it has been in other energy areas in the past.

4. The Department of Mechanical and Industrial Engineering has already demonstrated its capability in the solar energy area. A formal course, ME 307--Solar Energy Utilization--is available for graduate and undergraduate students. The external funding for solar energy research in the Department will exceed $100,000 in FY 1980. The Department is already working closely with the Departments of Agricultural Engineering, Architecture, Electrical Engineering, and Nuclear Engineering, and the Construction Engineering Research Laboratory (CERL) on solar projects and workshops.

The emphasis for the proposed program will be placed on the utilization of solar energy for three major uses:

1. residential and commercial water and space heating,
2. industrial process heat and steam, and
3. space cooling.

In addition to this emphasis, vital questions common to all energy sources will also be considered in the solar energy program, namely, the development of advanced energy storage systems, engineering economics, and system modeling.

Essentially this same budget statement appeared in last year's request. The State responded by providing a portion ($80,000) of the total amount requested. The budget shown below indicates what is required to initiate the program at the level originally proposed.

	FY 1981
Academic Staff	
2.00 FTE Assistant Professors	$ 44,500
Nonacademic Staff	
.50 FTE Secretary	4,500
Expenses and Supplies	2,000
TOTAL	$ 51,000

KRANNERT CENTER FOR THE PERFORMING ARTS ($74,300)

The Krannert Center for the Performing Arts is a facility that cannot be matched on any college or university campus in the world. Its versatility is beautifully suited to accommodate all the performing arts programs at UIUC--music, art, drama, and dance. Because it is a world-class facility, it is possible to attract premier performers who not only provide the campus and surrounding region with cultural exposure, but also provide students with inspiration, advice, and direction. It serves to break down barriers among the various arts and provides the bridges that allow students to appreciate the arts beyond their own field and to broaden their performing experiences and skills.

Although the Krannert Center is a remarkable facility, its operation has been plagued by a series of problems that were analyzed in detail in FY 1979. It was determined that an amount in excess of $350,000 would have to be added to the present maintenance budget of the building if it were to be maintained in a reasonable fashion. (The necessary funds are included in the general O & M Deficiency request.) To upgrade and to replace essential production systems and to meet the cost of related remodeling costs would require $2.4 million. (Such projects are being phased into the capital budget request in the SR^3 category.) In addition, a need for $313,400 exists to provide new and replacement equipment each year, to provide subsidies for departmental productions, and to remedy serious personnel deficiencies. The paragraphs that follow document this need.

Faculty members, students, and the administrators who use and operate the Krannert Center see the educational program and the related operating budget as their primary concern. In an attempt to maximize the educational program activities in terms of quality and quantity, three steps have been taken. The Krannert Center has:

1. sought financial support from the U. of I. Foundation through gifts and grants from alumni and friends,

2. initiated a surcharge varying from 25-50 cents per ticket on all events held at Krannert Center, and
3. charged the academic departments for services related to their productions in the Krannert Center.

At the present time, the U. of I. Foundation is subsidizing the cost of bringing outstanding visiting performers to the Krannert Center. In fact, the Foundation has a commitment to provide $40,000/year for the next three years for this purpose with the understanding that it will be reimbursed through income to be realized on a major fund drive that it recently initiated. These funds will make it possible to select the very best talent in all fields to supplement the educational programs of all the academic departments and to provide cultural entertainment for all Krannert Center patrons.

A surcharge of 25-50 cents has been added to the price of all tickets as a means of raising funds to purchase badly needed support equipment. The initial budget had virtually nothing in it for the purchase of equipment. Now, as equipment is beginning to wear out and as new equipment is needed to support more elaborate and sophisticated programs, the management of the Krannert Center has found it impossible to keep up with the need. Funds collected from the ticket surcharge represent approximately half of what is needed on a recurring basis to provide the Krannert Center with such expensive items as pianos, shop equipment, TV equipment, motion picture cameras, etc.

As mentioned earlier, the Krannert Center management has also initiated a standard set of charges for academic departments using its four major facilities for productions. These funds are used to pay elevator operators, ticket sales personnel, ticket takers, and public information costs. Unfortunately, when the Krannert Center opened, departments did not receive any increased funds in their budgets to meet these charges. Therefore, to meet the costs, the departments had to increase the cost of tickets by another 30-50 cents. All income from tickets is spent on production costs and the standard charges mentioned. Usually departments are able to balance their costs and income on an annual basis; however, they are greatly limited in the types of productions that they can present. Those requiring elaborate staging, costumes, etc., are often dropped from consideration because of the projected costs.

It is recognized that departments cannot expect to have unlimited budgets for performing arts productions, but it is argued that the present situation is too restrictive. The full range of artistic possibilities for the Krannert Center is not presently being utilized. The best educational interests of students are being ignored in many instances when productions are selected for presentation based primarily on the cost of production. High ticket prices limit or discourage attendance. Therefore, it is recommended that the standard Krannert Center charges to departments be eliminated enabling a reduction in ticket prices so that they would once again be comparable to those at other colleges and universities.

The purpose of this presentation has been to identify the various financial problems relating to the operation and maintenance of the Krannert Center for the Performing Arts. In recent years, the campus administration has reallocated funds to the Krannert Center to meet a series of crises or emergencies resulting from underfunding, but it can no longer continue to do this. In fact, the problems cited put them well beyond the realm of reallocation. The FY 1981 incremental request is shown below:

	FY 1981
Program Support:	
Equipment (elimination of 25-50 cent ticket surcharge)	40,000
Equipment Maintenance (elimination of the 25-50 cent ticket surcharge)	20,000
Departmental Production Subsidy (elimination of KCPA production charges to the departments plus the addition of a $20,000 subsidy)	14,300
TOTAL	$ 74,300

Ph.D. PROGRAM IN REGIONAL PLANNING
($43,500)

The Department of Urban and Regional Planning has spent the past several years in planning a new Ph.D. program in regional planning and in getting its program proposal approved by the various campus bodies that review such proposals. A complete program proposal has now been sent to the IBHE for academic review and approval. This request is for the related funds that will be required to initiate this new program.

The planning profession since World War II has been characterized by two major developments--developments which shape the context and the objectives of this proposal.

The first of these is growth. Today almost every American city of over 50,000 people (and many a good deal smaller) includes a planning department in its governmental structure, and many planning agencies have been established at the metropolitan, regional, and state levels as well. Under the general charge of comprehensive planning for physical development, these agencies deal with matters such as land use and transportation system design; the planning of water, sewerage, and other public facilities; and the aesthetic quality of the environment. Other evidence of the profession's growth can be seen in the expansion of membership in the American Institute of Planners (recently renamed the American Planning Association) from a few dozen at its founding to more than 10,000 in 1978 and in the fact that more than eighty U.S. universities now offer planning degrees (as compared with about twenty in 1960).

The second development is increasing complexity--not only in the tasks which the profession undertakes, but in the tools and philosophies which it brings to those tasks. During the 1960's, planning, like many other professions, went through a period of self-examination and partial reorientation. Increased societal concern for the quality of urban life spawned a new emphasis on the social, economic, and political systems of cities and opened new roles for advocates and activists operating outside traditional structures. Today there is a resurgent interest in physical planning. This interest is driven intellectually by two forces: 1) by new investigations into the relationships between human behavior and the

physical environment and 2) by the realization that American land-use practices have been severely damaging natural environmental systems and that considerations of the limitations and capabilities of such systems must be a part of any effective human planning effort. The most recent thrust in planning has been away from omnibus Federal legislation toward specific problem areas such as strip mining and coastal zone management, areas that call for special expertise. Along with this has come an increasing realization that the states will have to play larger roles in land-use planning. Moreover, the metropolitan response to the growth of urban aggregations at one scale and the creation of multi-state agencies, such as regional commissions, at another scale, have given renewed significance to the regional aspect of urban and regional planning.

The master's degree continues to be regarded as the terminal degree for professional practice. The characteristics of growth and complexity noted earlier, however, have created a clear need for post-master's work aimed at producing researchers, teachers, and a few highly specialized practitioners. The need for basic and applied interdisciplinary research is urgent in problems as diverse as the analysis of user needs in housing and transportation; measurement of the environmental and social impacts of large-scale developments such as reservoirs, highway systems, and nuclear power plants; the development of mathematical models simulating urban growth patterns; and analysis of the impact of urbanization on agricultural production. (To be sure, other disciplines are currently engaged in research on these issues; however, this program will provide researchers who can integrate the perspectives and techniques of these several disciplines, and who can bring the insights of these disciplines to bear on the training of land-use planners.) The master's degree aimed at training general, practicing professional, simply cannot offer the depth and specialization required for this work. Even the practicing masters-level professional, however, should be educated by those who, like the products of this program, can point out how and where the solutions to such problems can be found. The need for teachers is also a product of the qualitative state of the discipline, marked now by increasing specialization and rapid generation of new knowledge and techniques.

The proposed program will concentrate on a critical aspect of regional planning--that of land use. It will necessarily require more than the generalized skills in theory, research, and process common to all aspects of planning. It will require knowledge of land-based resource systems and the particular human systems which shape people's relationships with the land. For this reason the program depends heavily upon the contribution of fields such as the natural, social, and agricultural sciences; civil and environmental engineering; environmental and land-use law; and the economic and ecological assessment of land-use practices. Without exception, these are areas in which UIUC possesses unusual distinction. Indeed, the requisite areas of study read like a catalogue of the special strengths of this campus. Moreover, these disciplines are distributed among six colleges, as well as the three affiliated State surveys, and so offer a chance to focus an unusually wide range of talents upon an area both of current importance and of intellectual depth.

The proposed program calls for the addition of one faculty member in FY 1981 and three more in FY 1982 to increase the strength of the existing core faculty. The new faculty positions will be allocated among the participating units. In addition, support personnel (graduate assistants and nonacademic staff) and expense funds will be required. The various financial requirements are included in the budget shown below:

	FY 1981		FY 1982	
	FTE	$	FTE	$
Academic Staff				
Associate Professor			1.00	$ 30,000
Assistant Professors	1.00	$ 22,000	2.00	44,000
Graduate Assistants	1.00	9,600	1.00	9,600
Nonacademic Staff				
Secretaries	1.00	9,400	1.00	10,000
Expense				
Travel		1,000		
Commodities		1,000		
Telecommunications		500		
TOTAL	3.00	$ 43,500	5.00	$ 93,600

BROADCAST JOURNALISM SEQUENCE IN THE DEPARTMENT OF JOURNALISM ($76,000)[1]

The College of Communications proposes revising the curriculum of the Department of Journalism to provide a sequence in broadcast journalism that would parallel and have status equal to the present accredited news-editorial sequence. The proposed sequence, which has been approved by the campus faculty-student Senate, would lead to the bachelor of science degree in journalism. Although the broadcast journalism sequence would share some courses with the news-editorial sequence, it would be a distinct option reflecting differences between the electronic and print media. Enrollment would be limited to a maximum of forty new admissions a year.

For more than a decade, surveys show, Americans have rated TV over neewspapers and magazines as "the most believable news medium." For nearly as long, surveys also show, TV has been Americans' most frequent source of news. Radio too has continued to be a major news medium. The importance of both makes imperative the need for broadly-educated, highly-competent broadcast journalists who will fill decision-making and leadership roles. The proposed sharply-focused program, which rests on a minimum of technical skills, seeks to fill that need by providing students with a critical conceptual background in communications, a general education of breadth and depth, and an ability to research and write on important social issues. It would do so by four requirements: 1) a narrow base of technical skills, 2) a component of academic communications courses, 3) a background in the liberal arts, and 4) a four-course specialty in such areas as urban planning, labor relations, or public finance.

Broadcast news directors, representatives of professional organizations, and alumni have testified that many broadcast journalists are leaving universities without adequate career preparation. This program is designed to overcome the deficiencies. The department would eventually

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[1] Of this amount $37,500 is nonrecurring.

seek accreditation for the program. The State now has only one accredited broadcast news sequence--at Northwestern University.

One additional faculty member and one secretary will be required to help staff the new program and to meet the needs generated by the increased enrollment.

The program also requires nonrecurring funds for the purchase of a portable video newsgathering unit and electronic editing gear. In addition, it needs recurring funds for supplies and equipment replacement and maintenance. Broadcast stations are generally moving from film to video tape for news coverage and documentaries. The College believes it too must move in this direction. All equipment purchased would be compatible with existing equipment at WILL-TV.

The requested equipment is the minimum needed for a broadcast journalism sequence. It would be sufficient only because the Champaign-Urbana cable franchisee, in its contract with the University, has agreed to provide and equip a studio for RTV students and because the College already has a good audio laboratory. The proposed budget for the program is shown below:

	FY 1981
Academic Staff	
1.00 FTE Assistant Professor	$ 17,000
Nonacademic Staff	
1.00 FTE Secretary	8,000
Expense	
Commodities	13,500
Equipment	37,500[1]
TOTAL	$ 76,000

[1]Nonrecurring amount.

ENERGY MANAGEMENT - BUILDING ENERGY AUDITS ($52,000)

Conservation efforts on the UIUC campus have been directed generally to scheduling the use of space and to controlling the operation and maintenance of mechanical equipment. Improvements in the efficiency of these functions have resulted in significant reduction in the use of energy. Now that the O & M Division has progressed about as far as it can in making savings in these ways, it would now like to develop programs 1) to analyze and eventually to improve the structural characteristics of campus buildings, 2) to educate and to enlist cooperation of building occupants, and 3) to develop a comprehensive energy building audit. However, these programs cannot be initiated unless additional funds are provided.

Both State and Federal agencies are suggesting that an energy audit of campus buildings by means of a computerized building simulation technique would be the most cost-effective means of identifying energy conservation alternatives. One of the products of such an audit would be a comprehensive data base that would allow the accomplishment of three phases of energy conservation:

1. the selection of alternatives and the simulation of changes in a computer model to identify the impact on building usage and the anticipated energy savings;
2. the development of an optimal campus energy conservation program for systems retrofit, for utilization of space, and for operating schedules weighted by energy needs; and
3. the monitoring of all building systems, after changes are made, to prevent regression, to maintain the higher levels of energy use efficiency, and to program future energy use growth.

It is anticipated that energy costs will escalate sharply in the next several years. This means that energy-related costs at UIUC will continue to increase at a substantial rate. The approach being suggested here should reduce significantly the escalation of campus energy costs.

The O&M Division is willing to divert the efforts of a number of its more experienced staff to this task; however, to get the job done as rapidly and efficiently as possible, it is requesting funds for several new positions. This entire budget request is outlined below:

		FY 1981
Nonacademic Staff		
1.00 FTE Engineers		$ 20,000
1.00 FTE Technicians		12,000
Expense		
Computer Time		15,000
Commodities		5,000
	TOTAL	$ 52,000

NUCLEAR PHYSICS: A LARGE SUPERCONDUCTING ACCELERATOR FACILITY ($69,200)

A remarkable technical development, the application of superconducting microwave cavities to accelerate electrons, makes possible unique new studies of nuclear structure. Illinois physicists built a prototype machine (MUSL-1) which was used for research by five physics doctoral students. The successor (MUSL-2) is operating, and within two years another half-dozen students will complete their research using it. Federal funds for a 288 MeV accelerator (MUSL-3) now appear within reach.

In 1976-77 an NSF-ERDA Study Group visited Illinois, MIT, and Stanford to assess possibilities of a nuclear physics laboratory of national importance. The Study Group's report recommends support for a new generation of electron accelerators. Federal funds of $3-5 million will be required to provide the first major stage beyond that already committed. The Department of Physics submitted a proposal to NSF for $5.2 million over three years beginning February 1, 1978. The NSF Board approved the proposal in principle and provided $968,000 for the first year of the project ending on January 31, 1979 and $1,402,000 for the second year ending January 31, 1980. The Department expects to receive a total of at least $3.5 million in response to its proposal. A substantial group of academic/professional staff would build and maintain the superconducting accelerator facility mentioned in the proposal.

The NSF-ERDA Study Group asked the extent of UIUC commitment to faculty members doing nuclear research. The Study Group was assured that the commitment is substantial and that some growth is foreseen, as a portion of department "turnover" is devoted to nuclear work. The Department of Physics would like to expand its efforts in nuclear physics even further in FY 1981 by adding 2.00 FTE senior professorships attached specifically to the graduate instructional and research program of the higher energy electron accelerator laboratory. These personnel, working with those nuclear physicists presently on the staff, should be able to make a major contribution in the field once the MUSL-3 has been funded and installed.

The budget being proposed is outlined below:

	FY 1981
Academic Staff	
2.00 FTE Professors	$ 57,300
Nonacademic Staff	
1.00 FTE Secretary	8,400
Expense	
Commodities	3,500
TOTAL	$ 69,200

PEST MANAGEMENT CLINIC
($34,500)

Crop disease management and pest control management have recently come to the forefront on the agricultural scene for a number of reasons. Changes in crop production practices such as double cropping, minimum tillage, the use of pesticides, planting in narrow rows, and the introduction of new fertilizers have created changes in the agri-ecosystem that have resulted in new plant disease and pest problems. For example, minimum tillage, which drastically reduces erosion and increases production in some areas, has contributed to a significant increase in nematode damage to corn. The use of pesticides has resulted in the critical review of pest management practices by the U.S. Environmental Protection Agency, and now USDA is promoting a conservation-pest control program (Integrated Pest Management) that will sponsor major research and adult education programs required to maintain crop productivity while reducing soil erosion, sedimentation, and pesticide usage. If the information developed by this program and others like it is to be utilized by growers, farmers, and agribusiness, the Cooperative Extension Service must distribute that information.

Illinois, which currently ranks second among the states in agricultural production and first in agricultural exports, has only 2.00 FTE extension staff members in the area of plant pathology. These personnel cannot meet the expanding demand for educational programs, massive amounts of summarized data on disease incidence and yield losses caused by plant diseases, catalogued details of pesticide usage, training schools for pesticide applicators and pest management scouts, etc. These demands from farmers represent only a small portion of the problem, for Illinois is first in the United States in the woody ornamental (excluding citrus) nursery business. The nursery owners have their own set of related demands and these must be added to those coming from the homeowner/gardeners, the city arborists fighting Dutch Elm disease, communities wanting assessments of pesticidal versus cultural or biological control of diseases, and on and on. The current staff is not large enough to meet all of these demands.

In 1976 the Agricultural Experiment Station of the College of Agriculture initiated an Integrated Plant Clinic at the UIUC campus. Eight departments in the College cooperated on this project and during the peak summer season of that first year, the diagnosis of insect-related and other plant problems submitted to the Clinic was handled voluntarily by State Extension Specialists and students. In 1977, the Clinic was operated by personnel funded on a temporary grant, and they handled more than 3,000 plant and insect specimens, more than twice the number diagnosed in 1976.

The budget below will provide the College of Agriculture with the necessary staff to meet the increased needs in the State related to pest management and will also allow the College to operate the Integrated Plant Clinic on a limited but permanent basis in FY 1981:

	FY 1981
Academic Staff	
1.00 FTE Integrated Plant Clinic Coordinator	$ 17,000
Nonacademic Staff	
1.00 FTE Secretary	8,000
Expense	
Contractual Services	4,000
Travel	500
Commodities	2,000
Equipment	
Equipment	2,000
Library Materials	1,000
TOTAL	$ 34,500

LABORATORY PROGRAMS IN COMPUTER SCIENCE ($98,000)

Computer science, like other engineering disciplines, partakes of both science and engineering. It examines not only the theory of information processing but also its practice, much of which is empirical and an outgrowth of laboratory environments. Thus, any successful research and education program in computer science must contain strong laboratory facilities. As a relative newcomer to the campus, the Department of Computer Science has developed and grown during a period of fiscal stringency. Equipment funds were removed from the University budget, and the captial investment needed for equipment could not be provided.

The Department has been actively seeking outside funds to purchase the equipment that it needs for its laboratories. Already it has received $120,000 in the form of two equipment grants from the National Science Foundation, and another proposal to NSF is presently being prepared. It must be stressed, however, that all of these grants were for initial equipment funding only and contained no provision for the equally essential and recurring components of staffing, maintenance, and upgrading. The staffing problem is particularly severe, because the successful conduct of laboratory courses requires more instructor contact hours than lecture courses for the same number of students.

The purpose of the present request, therefore, is to obtain the recurring funds necessary to exploit this ambitious and fortunate acquisition of equipment effectively. It is clear that without such recurring support the laboratory mode of instruction cannot be properly implemented and the efficiency and reliability of the computer equipment will suffer from lack of essential maintenance. These recurring funds would support the following identified departmental needs:

1. to upgrade and to modernize the equipment in the Logic Lab which has run for 8 years on its original and now somewhat outmoded components,
2. to maintain the Microlab, both in hardware and software development, as an effective teaching mechanism for the 5 or so courses that it will eventually carry,

3. to purchase a consistent set of equipment and to provide maintenance for the hardware laboratory which would then complement the Department's hardware courses in the same way that the Logic Lab and Microlab complement the logic design and software courses, and
4. to establish a flexible and extensive computing environment for graduate level instruction in operating systems, programming methodology and languages, and distributed computing. (These topics cannot be taught effectively using only the central campus computers because the latter exist primarily to provide a campus-wide service and, therefore, the special features of these machines are protected from user experimentation by large, fixed operating systems.)

Because laboratory instruction is more teacher-intensive than lecture-mode, the request is basically for personnel. The equipment request is chiefly for replacing failed units and for essential upgrading. These needs are outlined below:

	FY 1981
Academic Staff	
1.00 FTE Assistant Professor	$20,000
2.00 FTE Graduate Assistants	20,000
1.00 FTE Senior Research Programmer	20,000
Nonacademic Staff	
1.00 FTE Secretary	8,000
1.00 FTE Electronics Technician	13,000
Wages	
Student Electronics Employees	3,000
Expense	
Expendable Laboratory Supplies	4,000
Equipment	
Equipment Replacement and Upgrading	10,000
TOTAL	$98,000

ATMOSPHERIC SCIENCE PROGRAM
($82,000)

During the past decade there has been a growing awareness of environmental problems. Many of these problems fall within the realm of the Laboratory for Atmospheric Research at UIUC. For instance, severe weather events, drought, energy use and conservation, air pollution, the effects of carbon dioxide and freon propellants, agriculture, aviation, transport, architectural design, city planning, and even commerce are all related to weather and climate--the major concerns of the Laboratory. The University now seeks additional State resources to strengthen the atmospheric science program at the Laboratory.

The Laboratory intends to complement its existing expertise by expanding the scope of research and graduate education in the areas of climate changes and atmospheric measurements/field observations. This would help not only to carry out atmospheric science programs at the Laboratory more effectively and in a better balanced fashion, but also to enhance the interaction and cooperation with several other units on UIUC that are involved in some aspects of atmospheric science. Further, it is expected that new interdisciplinary or multidisciplinary programs related to climate will emerge on the UIUC campus through such cooperation. The breadth of employment available to graduates will also be increased.

The additional State resources will be used also to strengthen the undergraduate course offering in atmospheric science. There has been a growing interest in weather and climate among students at UIUC. There is also an increasing demand for expertise in atmospheric science because, as mentioned above, many human activities are sensitive to weather/climate. The steady increase in the enrollment in the undergraduate meteorology courses that the Laboratory is offering primarily for engineering students reflects this trend. The Laboratory also offered an introductory weather forecast course for a non-science major undergraduate student on an experimental basis. The student response to that course was extremely encouraging. The current faculty at the Laboratory is too small in size to offer such a course and other projected undergraduate courses on a permanent basis. Further, the Laboratory has no teaching assistant positions at

present despite enrollments exceeding 50 students in two courses offered each semester.

The UIUC campus has been fortunate enough to attract some of the best meteorologists in the world to the Laboratory for Atmospheric Research. These faculty members, whose collective salaries in State funds were $188,000 in FY 1979, attracted approximately $425,000 in outside funding for the same year. A modest increase in operating expenses will supplement the increase in teaching and research activities described in this request. The additional State resources requested will help the UIUC atmospheric science program in achieving its potential to become one of the top-ranked atmospheric science programs in the nation.

	FY 1981
Academic Staff	
2.00 FTE Assistant Professors	$ 40,000
1.50 FTE Graduate Assistants	18,000
1.00 FTE Research Programmer	17,000
Expense	
Contractual Services	7,000
TOTAL	$ 82,000

PROGRAM IN SURFACE CHEMISTRY AND CATALYSIS ($175,000)[1]

The School of Chemical Sciences is proposing that it expand graduate instruction and research in surface chemistry and catalysis, an underdeveloped area that is of increasing importance. The program involves the preparation and characterization of catalysts and of catalytically active surfaces and of the reactions they undergo.

The importance of catalysis in modern day chemistry has recently received considerable attention, even in non-technical publications. This is demonstrated by a recent Wall Street Journal article dealing with the subject. To quote from this article,

> "Catalysts will be the key, for example, to whether benzene and other major chemicals can be made more cheaply than at present. New catalysts are emerging as the major weapon in the chemical industry's battle against inflation . . ., helping to reduce energy consumption . . ., and reducing the amount of undesirable by-products, including pollutants."

The economic ramifications of such developments are immense. For example, most of the U.S. cracking capacity has been changed from silica-alumina to catalysts based on zeolites. By converting a larger fraction of crude petroleum to gasoline rather than to coke and light hydracarbon gases, this change is saving the U.S. economy more than $2.0 billion per year, including a decrease in the amount of crude oil that has to be imported to maintain the economy. In terms of long-range needs, Fischer-Tropsch chemistry has been described as a way of obtaining fuel when the petroleum supplies become exhausted. This technology will produce a whole new set of raw materials from coal that the chemical industry will have to use as building blocks for its products.

Clearly, any major graduate program in chemistry and chemical engineering has to reflect the increased activity of this nature. The nation needs help in generating the basic knowledge that can lead to further advances in the area and it needs chemists and chemical engineers who can

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[1] Of this amount, $100,000 is nonrecurring.

apply that knowledge to the technology. Catalytic reactions at surfaces are very complex, and their study requires the integration of a wide range of technical expertise and experimental capabilities. The Departments of Chemistry and Chemical Engineering already have taken significant steps in this direction, involving several faculty on a part-time basis in Chemistry and one faculty member on a full-time basis in Chemical Engineering. This proposal seeks to build upon existing strengths in this area and to expand and broaden them by encouraging greater involvement of the current faculty. This can best be done by helping to provide, to operate, and to maintain the sophisticated and costly facilities needed for research on surfaces.

The main purposes of the program are to make significant research contributions in an area of great national importance and to prepare graduate students for work in the area. The demand for Ph.D. chemists and chemical engineers in general is high. Moreover, the employment opportunities for graduates of the program are expected to be even better for the foreseeable future, because of the importance of the field in terms of the national economy.

In the budget that follows, it should be noted that only a small number of new faculty members will be required to expand the program to an appropriate level. These faculty members, plus existing faculty members shifting their attention to this area, will increase the demands placed on an already burdened machine shop; therefore, a senior laboratory mechanic is being requested. The major costs tied to the proposal relate to the purchase of a piece of essential equipment: a Fourier Transform Infrared Spectrometer with reflectance capability ($175,000). The School believes that it can obtain outside funding to meet approximately $75,000 of the related cost of the equipment.

	FY 1981
Academic Staff	
2.00 FTE Assistant Professors	$ 40,000
Nonacademic Staff	
1.00 FTE Senior Laboratory Mechanic	20,000
.50 FTE Secretary	4,500

		FY 1981
Expense		
Commodities		$ 10,500
Equipment		
Spectrometer		100,000[1]
	TOTAL	$175,000

[1]Nonrecurring amount.

SOYBEAN IMPROVEMENT PROGRAM
($101,000)

Soybeans account for a very large part of the cash crop income for Illinois. They are grown on more than 40% of the Illinois cropland and their production has a major impact on farm income as well as on the entire economy. This is particularly true since Illinois soybeans are a major commodity of international trade.

If soybeans are to maintain and hopefully to improve their current importance in Illinois, ways must be found to improve efficiency of production as well as total production. Improved production might come from several sources but regardless of source will revolve around increased yields per acre. Two proven ways of increasing yields are development and use of new and higher yielding varieties and adoption of improved production practices. This proposal is envisioned as a means of strengthening the capability of the Department of Agronomy in both of these areas and if implemented will most certainly have a favorable impact on Illinois soybean production.

Responsibility for developing soybean varieties for Illinois has rested with USDA personnel. The USDA program has been effective as evidenced by the development of many improved varieties for Illinois farms. However, the USDA currently has only one scientist in Illinois working on soybean variety development. Illinois can no longer afford to rely entirely on USDA for new variety development. The Illinois Soybean Program Operating Board has recognized this critical need and has provided funds for one faculty member who has initiated a state-based soybean breeding program, but no guarantee has been provided on how long this support will continue. It is most important that this position be funded on a permanent basis on State funds.

Illinois, a state that plants over 9,000,000 acres in soybeans, has not had an extension agronomist specializing in soybeans. Soybean producers are now seeking answers to their yield-limiting problems and are looking for new techniques to achieve higher yields. By having an extension agronomist specialize in soybeans, these needs can be more thoroughly met.

The extension agronomist will prepare educational materials, will participate in conferences and workshops with growers and county extension specialists, and will conduct applied research designed to give the needed answers. The Soybean Operating Board has again recognized this critical need and is presently providing temporary support for an extension agronomist.

	FY 1981
Academic Staff	
1.00 FTE Associate Professor	$ 33,000
1.00 FTE Assistant Professor	27,500
Nonacademic Staff	
2.00 FTE Crop Testing Technicians	22,000
Expense	
Supplies (seed, fertilizers, pesticides, etc.)	6,500
Travel	3,500
Equipment	
Miscellaneous Equipment (planter units, seed counters, laboratory balances, analytical instruments, etc.)	8,500
TOTAL	$ 101,000

PRINCIPAL'S SCHOLARS PROGRAM
($102,500)

The College of Engineering at UIUC has a relatively long and distinguished record related to the development of minority-related educational programs for high school student in the State of Illinois. The most well-known of these programs are:

1. a program which brings over 600 inner-city minority students by bus to the annual Engineering Open House;
2. Minority Introduction to Engineering (MITE), a two-week summer program that brings students to campus for actual classroom, social, and other experiences (this program started at UIUC in 1969 and has now been expanded to 55 other engineering campuses throughout the United States involving more than 2,400 minority students each year);
3. Junior Engineering Technical Society (JETS), which has developed a program of design competition among inner-city high schools in order to motivate students toward engineering; and
4. the Principal's Scholars Program.

These efforts have been supported almost entirely by funds from industry, business, and grants. Many faculty members and students have contributed their personal time to make these programs a success. Both the MITE program and the JETS program have gained national recognition and stature and are being adopted elsewhere in the United States.

This proposal is related to the Principal's Scholars Program which was developed four years ago by the College of Engineering and the Office of Admissions and Records. The major objective of this effort has been to increase the number of minority students who are eligible to enter pre-professional post-secondary educational programs at the institution of their choice--not necessarily the University of Illinois. Historically, most minority students have not enrolled in enough mathematics and science courses while in high school to prepare themselves for college admission, at least for admission into the professional programs. This has had the effect of limiting the career choices for the minority student. The

Principal's Scholars Program has made progress in changing this pattern, and more than 1,200 minority students in seven Chicago high schools are now enrolled in the college preparatory curriculum that was recommended for the program when it was introduced.

The Principal's Scholars Program is now operating in the following high schools: Bowen, Calumet, Corliss, Fenger, Harlan, Julian, and Phillips. These schools were selected because they were general high schools and they would provide a cross-section of the economic levels prevalent on the south side of Chicago.

The first full class of students involved in this program throughout their entire high school years graduated in 1979. That class is just now entering college, and it is impossible to evaluate at this time the students who will be enrolling in other colleges or at UIUC. However, preliminary evaluations have shown that math/science enrollments have been increased three to four fold in these schools, and a sampling of performance indicates that the students involved in these programs score approximately five points better on the ACT composite.

In order for the program to be successful in any school, the principal must provide strong endorsement of the concept and must assign staff members to the program for proper implementation. The principal and staff of the school select students to participate in the program. They attempt to identify the students as soon as possible (eighth or ninth grade) to ensure proper course selection. Students are selected on the basis of grades, aptitude tests, parental interest, teacher recommendations, and final agreement between the parents and students to strive to push for academic excellence.

Generally the program is limited to 50 students at each grade level in each school in order to develop a degree of competition among students. If a school feels that it is beneficial to alter the limit, the University staff has been flexible with the ceiling. Other students can elect to follow the program guidelines as they strive to win a place in the group, and they can participate in many of the events sponsored by the program for motivation and orientation.

The UIUC administration has strongly endorsed the goals and philosophy of the Principal's Scholars Program as introduced by the College of Engineering. Considerable effort has been spent in apprising representatives of the Colleges of Commerce and Business Administration, Agriculture, and Applied Life Studies of the Program. Those units are now quite enthusiastic about joining the College of Engineering in broadening the Program to include other schools that have indicated that they want to participate.

It is important to note that the Principal's Scholars Program is not a recruiting program and will not be approached in that fashion by any of the colleges that become involved. Instead, it is a program to insure that talented minority students are eligible to go to college and that they have taken the necessary high school course work to allow them to enter the field of their choice. By broadening the participation in the program to include several more colleges on this campus, UIUC will be able to introduce the students in the program to a much wider variety of career possibilities from which to choose and will be able to increase greatly the number of students in the program.

The funds being requested for FY 1981 would make it possible to introduce the Principal's Scholars Program in additional Chicago schools (Carver, King, Crane, Marshall, Hirsch, Farragut, Whitney Young, Austin, Harrison, Clemente, and South Shore), in two schools in East St. Louis, in two schools in Springfield, and in two schools in Decatur. Emphasis would be placed on getting each school to insure that the minority students entering the program could get tutoring if necessary and on developing in-service workshops to aid high school staff members in enriching the contents of their courses and changing their expectations for their students.

The proposed budget for this effort is outlined on the following page.

	FY 1981	
	FTE	$
Academic Staff		
Director	.70	$ 20,000
Coordinator	1.00	18,000
Academic Consultant	1.00	28,000
Nonacademic Staff		
Secretary	1.00	8,000
Expense		
Travel		8,000
Publications		5,000
Student Recognition Programs		5,000
Evaluation		2,000
Supplies		3,000
Student Conferences		3,500
Teacher In-Service Materials		2,000
TOTAL	3.70	$102,500

HUMAN FACTORS ENGINEERING
($64,000)

The Departments of Psychology and Mechanical and Industrial Engineering have established programs in the human factors area and together are now developing joint programs at the bachelors, masters, and Ph.D. levels to qualify students for employment in the expanding numbers of positions in industry and government. Current employment opportunities, availability of research funds, and staff and student interest all strongly support the development of a more comprehensive major, as well as an interdisciplinary program with Psychology, in human factors/ergonomics and related topics.

Human factors engineering is a growing area of research focused upon the interaction of persons and machines. Research with that focus often combines the special knowledge and skills of engineers and experimental psychologists in joint research efforts. This collaboration has produced much useful information on the general topic of controls and instrumentation, and this information has been useful in the design of a wide variety of devices, such as automobiles, jet transports, submarines, helicopters, agricultural spraying aircraft, and computers. A special topic in the laboratory at the present time concerns poor-visibility landings of aircraft. In an aircraft simulator it is possible to simulate and to compare display devices, varying in resemblence, to what the pilot sees in good visibility and to compare the effectiveness of the devices in life-like, simulated landings. This system provides unusual training opportunities for students interested in engineering and human-factors careers.

Both departments already have made substantial commitments to the development of a program in human factors engineering. An amount of nearly $60,000 (nonrecurring) has been invested in the task of setting up and partially equipping the Engineering-Psychology Laboratory. In both departments a number of faculty devote at least part of their time to programs in human factors, and all would be associated with the new interdisciplinary programs under development.

To develop the new program fully, special courses must be introduced so that the Engineering-Psychology Laboratory, a research laboratory, will

serve also as a teaching laboratory. These courses, which are viewed as critical for the development of the program, will require additional teaching and support personnel.

It is essential that new faculty with combined background in engineering and psychology join the program. They should be capable and desirous of developing engineering and psychological theory and practice simultaneously in the context of solving world problems. These persons can be found, but excellent, enthusiastically supported programs are needed to attract them.

A fundamental core of the program is the interdisciplinary Engineering-Psychology Laboratory being established in the Mechanical Engineering Building. As a center for various, funded, human-factors research projects this laboratory will provide research assistantships giving students the opportunity to engage in the design, conduct, and analysis of human-factors experiments and to interact with outside funding agencies. This interaction will enable students to gain valuable knowledge concerning the organization from which they will ultimately be seeking employment, while also gaining experience in such skills as proposal writing and research evaluation.

While much of the equipment and resources of the laboratory will be devoted to funded research, some will be utilized to provide laboratory experience related to undergraduate and graduate curricula. Thus, the research and curriculum aspects of the program will become closely interrelated through course-related laboratory projects, on the one hand, and through related seminars and courses, on the other.

The proposed budget is as follows:

	FY 1981
Academic Staff	
2.00 FTE Assistant Professors	$ 43,000
Nonacademic Staff	
1.00 FTE Laboratory Technician	15,000
Expense	
Computer and Simulator Time	6,000
TOTAL	$ 64,000[1]

[1] Funds and personnel to be shared jointly by the Departments of Mechanical and Industrial Engineering and Psychology.

THERMAL-HYDRAULICS OF NUCLEAR REACTOR SAFETY ($70,400)

The primary objective of this proposed program expansion is to provide students in Nuclear Engineering, and in other related disciplines, in-depth study of the thermal-hydraulics aspects of nuclear reactor safety, and thus to meet the current and projected needs of nuclear industries, government laboratories, and universities for qualified graduate nuclear engineers in this field. Firms associated with the development and utilization of nuclear energy sources will be the primary users served by the graduates. Since Illinois utilities are in the forefront of nuclear power development, their continued expansion will require the services of experts in the area of reactor safety to enable those utilities, along with architect-engineering firms and nuclear steam suppliers, to design, to operate, and to license their nuclear power reactors.

Over the past decade an increasing awareness of the necessity for insuring the safe and reliable operation of nuclear power plants has developed. The unique characteristic of nuclear power that imposes an overriding requirement for safety precautions is the generation of large amounts of radioactive materials in the nuclear fuel and auxiliary equipment. Such large amounts of radioactive materials are potentially dangerous to all forms of life if released into the environment.

There is now an increased demand, which cannot yet be easily met, for graduate nuclear engineers who are aware and have the training to solve the problems of thermal-hydraulics related to nuclear reactor safety. Presently, the University of Illinois has no formal program designed to focus intensively on the thermal-hydraulic and related aspects of nuclear reactor safety. However, in cooperation with the College of Engineering's Fluid Dynamics Coordinating Committee and the UIUC Institutional Energy Program, an advanced course on Two-Phase Flow and Boiling Heat Transfer is under development and will be offered in the Spring of 1980. This course will serve the campus as a whole and will provide detailed coverage of fundamental thermal hydraulics problems related to safety of current reactor systems and those under development.

This program expansion is a part of the overall nuclear engineering program which would unify the current efforts in reactor heat transfer, reactor safeguards, and two-phase fluid dynamics into the thermal-hydraulics of nuclear reactor safety. It would be interdisciplinary in that it would draw on experts from the areas of nuclear, civil, mechanical, and chemical engineering and theoretical and applied mechanics. Personnel in these areas are currently discussing the possibility of jointly establishing a Nuclear Thermal-hydraulics Research Laboratory in the College of Engineering.

It is essential for the practicing nuclear safety analyst to understand reactor systems, safety problems common to reactors, means of accident prevention, current analysis methods, and the consequences of potential accidents. Both old and new ideas and methodologies should be combined to form a unified and logical approach to the study of nuclear power plant safety. Primary emphasis would be placed on unsolved safety-related problems and proposed methods of solution. Once the student understands the scenarios of postulated and potential nuclear power plant accidents, it is then essential that strong engineering fundamentals be applied to designing such systems to prevent such accidents. A graduate nuclear engineer who specialized in the thermal-hydraulic aspects would thus be extremely valuable to the nuclear industry.

The proposed program expansion would be initially administered by existing faculty. However, it is anticipated that one additional faculty member will be added. Such a requirement is projected since the program expansion would occur through the increase of students, courses, and research grants.

In the proposed budget, shown on the following page, the addition of new faculty and replacement and repair of equipment are primary components. The latter item is of significant importance in that the availability, on a continuous basis, of up-to-date and fully functioning data recording and processing electronic equipment is essential to the efficient conduct of research programs in this expanded program. Since the state-of-the-art in electronic equipment is rapidly changing, obsolescence of such equipment can quickly remove the competitive edge needed to attract

externally-sponsored research grants and to educate students who understand modern techniques and problems.

	FY 1981
Academic Staff	
1.00 FTE Assistant Professor	$ 21,000
1.00 FTE Research Assistant	13,000
Nonacademic Staff	
.25 FTE Senior Technician	7,000
Wages	
Student Wages	2,000
Expense	
Commodities	6,000
Equipment	
Replacement and Repair	21,400
TOTAL	$ 70,400

RESPONSE TO CHANGING STUDENT DEMAND
($250,000)

Engineering and Commerce and Business Administration

Since FY 1970, two of the largest colleges on the Urbana-Champaign campus have experienced significant increases in student instructional demand. This demand, reflecting changing student aspirations, has placed severe pressure on the Colleges of Engineering and Commerce.

The teaching load increases experienced by these colleges can be illustrated in a number of ways. Increases ranging from 22.8% to 42.1% for the HEGIS disciplines of Business, Computer Science and Engineering have occurred during the period FY 1971-FY 1979. These disciplines, with very small additions, comprise the Colleges of Engineering and Commerce. The increasing numbers of undergraduate students with curriculum majors in these colleges also provide evidence of the demand placed upon these colleges.

Student Majors in Selected Colleges

	FY 1970	FY 1971	FY 1972	FY 1973	FY 1974
Engineering	3,502	3,598	3,163	3,145	3,241
Commerce	2,290	2,575	2,437	3,099	3,514

	FY 1975	FY 1976	FY 1977	FY 1978	FY 1979
Engineering	3,390	3,829	4,254	4,644	4,994
Commerce	3,738	3,498	3,326	3,566	3,598

Perhaps the most significant result of the load pattern in these colleges is the growing inability of the Urbana-Champaign campus to respond to student and societal needs. In the subject areas represented by these colleges, where jobs are generally most prevalent, student entrance has had to be severely restricted because of a lack of resources. Freshman class profile information for the Colleges of Engineering and Commerce illustrates the rising standards of admission. In the College of Engineering the mean high school rank of entering freshmen in 1972 was 84.2 percentile, while in 1978 the figure rose to the 89.4 percentile;

comparable figures for the College of Commerce show an even greater increase, from the 77.1 percentile to the 90.9 percentile.

Both colleges have been experiencing earlier closing dates (for entering freshman admission); the Colleges of Commerce and Engineering both closed on November 15, 1978 (for FY 1980 students), the earliest possible closing date. In 1974 Commerce remained open until March 1, while Engineering did not close until June 18 (for FY 1975 freshmen).

In addition to raising entrance requirements, a rather unsatisfactory response to a difficult situation, the Urbana-Champaign campus has, during the last four years, internally reallocated approximately $1.0 million to the Colleges of Engineering and Commerce. Internal reallocation, although providing badly needed support, has not been sufficient to meet student demand; because internal reallocation strategies have been restricted by the fact that the University's budget has not kept pace with inflationary pressure. There is a limit to the amount of internal reallocation that can be accomplished without doing irreparable harm to existing programs, and the Urbana-Champaign campus has essentially reached this level. The Urbana campus has experienced a relatively stable enrollment, and the pressures that are now occurring are, in large part, movements from relatively less costly disciplines to relatively more costly disciplines.

In order for the Urbana-Champaign campus to provide adequate opportunity for qualified students to receive instruction in the Colleges of Engineering and Commerce, the following funds are requested:

1. College of Engineering - $125,000. These funds, in conjunction with $125,000 obtained through campus internal reallocation are to be used to provide 9.00 FTE graduate assistants and 9.00 FTE assistant professors. This portion of the request is envisioned as the second step of a five-step program to reduce teaching load pressure in the College of Engineering to its average level for the last ten years.
2. College of Commerce - $75,000. These funds, in conjunction with $75,000 obtained through campus internal reallocation, are to be used to provide 5.50 FTE graduate assistants and 5.00 FTE assistant professors. The addition of these new staff members constitutes the final step in a two-step program that will place the College of Commerce at its average teaching level for the last ten years.

Chemical Engineering

A nation-wide growth in interest in chemical engineering has occurred, primarily because of the energy and pollution problems with which industry currently has to contend. As a result the number of instructional units generated within the Department of Chemical Engineering in the School of Chemical Sciences (a major unit in the College of Liberal Arts and Sciences) has increased by 175% since FY 1971.

It should be noted that there are several factors that make it desirable for the Department of Chemical Engineering at UIUC to expand to meet this challenge rather than to turn students away. First of all, this institution is the only State-supported university in Illinois with a curriculum in Chemical Engineering. The Department of Chemical Engineering undoubtedly has an obligation to educate students in this field to meet the serious increase in environmental and energy problems facing the State and nation. At present, all of the Chemical Engineering graduates are in great demand and none have trouble finding jobs.

Another important factor that should be considered is that the department of Chemical Engineering at UIUC is one of very high quality. It is this type of department that should be encouraged to meet this type of challenge.

The campus Council on Program Evaluation (COPE) in its 1977 review recognized the Chemical Engineering Department to be an excellent unit with sound leadership, good faculty and student morale, and an exceptional record of research productivity--a department reflecting standards of scholarship among the highest on the UIUC campus. The Council urged that the Department consider seeking additional funding in order to expand its programs to accommodate more students without sacrificing quality.

The enrollments in the College of Liberal Arts and Sciences have been dropping in recent years and the College has lost funds to other colleges where enrollments have been increasing; therefore, the Dean of the College of Liberal Arts and Sciences has found it extremely difficult to reallocate funds to the School of Chemical Sciences to meet increasing enrollments there. Although some funds have been reallocated both at the college and campus levels to the School of Chemical Sciences, it has been difficult to provide enough dollars to meet increasing enrollments in expensive chemistry courses by reallocating funds from cheaper courses in the humanities.

To reduce the current teaching loads in the Department of Chemical Engineering to the average level of the past nine years would require an additional 11.50 FTE. Therefore, an amount of $75,000 is being requested, which would be matched by an equal amount through campus internal reallocation, to provide 6.50 FTE graduate assistants and 5.00 FTE assistant professors.

Note that for FY 1980, an amount of $250,000 was provided in response to the student demand appeal. That amount was matched by reallocated campus funds. UIUC would like to continue moving forward with its efforts to eliminate teaching deficiencies in the units cited during the next several years.

TABLE 15

SUMMARY OF PROGRAMMATIC REQUESTS FOR GENERAL UNIVERSITY FOR FY 1981

1.	Electronic Blackboard	$ 55,600
2.	Public Service Programming	25,000
3.	Consumer Health Programs	50,000
4.	University of Illinois Gerontology Center	70,000
5.	Coordinator of Governmental Service Programs in Institute of Government and Public Affairs	31,000
6.	Alumni Career Center	43,000
7.	Establishment of SRL Branch at the Medical Center--Survey Research Laboratory	36,300
8.	Deficiency Funding Request--Survey Research Laboratory	50,000
	TOTAL	$ 360,900

GENERAL UNIVERSITY

Programs originating from the General University are those programs where a concerted effort on the part of the total institution can provide enriched research and public service offerings. These programs typically involve faculty from more than one campus and/or provide services to and through one or more campuses. General University programs are diverse and serve to enhance campus-based operations. These programs both complement and supplement campus programs but do not replace or duplicate them.

Among the requests for expanded and improved public service offerings are three programs emanating from the Office of the Associate Vice President for Public Service--the Electronic Blackboard, the Consumer Health Program, and Public Service Programming. The Gerontology Center combines research and public service as does the Institute of Government and Public Affairs. The Alumni Career Center performs a service function for former students. The two requests for the Survey Research Laboratory would enable it to maintain its current level of service to groups outside the University and to University faculty and staff on two campuses while extending that service to the third campus of the University.

ELECTRONIC BLACKBOARD
($55,600)

The request for the electronic blackboard is part of the continuing education and public service outreach mission of the University. As one of the University's tripartite functions, public service programming is in need of further expansion to reach the constituents which the University serves best. The electronic blackboard can serve as a way of extending our teaching and research dissemination capabilities from a perspective provided by each of the University's three campuses.

The electronic blackboard is a remote delivery system developed by Bell Laboratory in conjunction with Illinois Bell Telephone. It transmits both graphics and audio. To transmit handwriting and information such as graphs or drawings, the instructor writes on a pressurized surface with chalk as if writing on an ordinary chalkboard. These graphics are electronically converted and transmitted over the telephone line. At the receiving end, which can be across the country, the signals are reconverted and displayed on a television screen. The audio portion of the lecture is carried simultaneously over a second telephone line. The system also has a capability of recording both graphics and audio portions which can be used at a later time for reference purposes.

The electronic blackboard described briefly above will serve as a delivery system for University of Illinois continuing education and public service programming. Over the past few years, the University of Illinois at Urbana-Champaign has served as the only field site for the development of the electronic blackboard system. The intent of this proposal is to extend the resources of the University of Illinois (all three campuses) via electronic media to the farthest corners of the state. Programming, both credit and non-credit, will be available for presentation over the blackboard. The Urbana campus currently has teaching sites available on its campus. Projected activities at Chicago Circle suggest that a teaching site will soon be on campus there, and several colleges within the Medical Center have expressed interest in the electronic blackboard and its utilization for extending their programs to sites remote from the main campus.

The students and constituents served by programs emanating via the electronic blackboard will tend to be those at the graduate and professional level. Many of the programs will be of a credit nature so as to provide educational opportunities for those individuals with undergraduate degrees to pursue advanced work at the master's degree level. Possibilities involve teaching some courses in nursing to locations such as Rockford, Quad-Cities, Peoria, and Urbana-Champaign. Engineering courses currently are carried to Rockford and Peoria by Urbana-Champaign during daytime hours, and it is anticipated that when Chicago Circle comes on-line, they too will carry evening courses to Rockford. With an expansion of that system, the University of Illinois could use this system to keep engineers statewide abreast of new technological advances in their professional fields. Of course, other opportunities for programming are also available and would be sought and promoted using the electronic blackboard system.

All of this becomes extremely important as travel-associated costs continue to spiral. If the number of faculty traveling about the state to carry out programs can be minimized and faculty can teach from a campus site to remote locations, the costs for such travel will be reduced significantly. Further, by extending these sites to public locations, i.e., University of Illinois Regional Offices, the University will more completely utilize its current facilities, creating a more significant presence that the University of Illinois is indeed a land-grant institution which has a statewide mission.

Over the last several years, students in both Rockford and Peoria have completed the requirements for master degrees in engineering from the College of Engineering at Urbana-Champaign. They have done so by taking courses solely via the electronic blackboard. This permits the individuals to remain in their home and work situations, reduces the cost to the students, and permits the employers to have full advantage of the worker-student progress as students move through each of the various courses in their programs. While numbers are small in terms of enrollments in these programs at the current time, only two locations are used; and it is anticipated that with increased numbers of locations, increased numbers

of persons served would result. With better prepared professionals, in this case engineers, the work of business and industry around the state is likely to improve considerably. Given this situation for engineers, a similar statement could also be made for other professionals including nurses, statisticians, mathematicians, and others in related fields, including some in the health sciences.

A total of $55,600 is requested in FY 1981 to initiate this project. Of that amount, $50,600 will be used for the contractual services with Illinois Bell for equipment necessary for teaching sites in two locations, yet to be determined, in the state. Consideration has been given to locations in Hinsdale, Rockford, and Springfield, as high priority locations.

A $5,000 equipment request is made for the purchase of television monitors and necessary hookups for receiving at teaching stations that are not provided in a contractual arrangement with Illinois Bell. Included in this cost will be the purchase of recording equipment so that tape replay may occur later for those who may have missed a class or wish to review a class session that was not totally clear to them.

PUBLIC SERVICE PROGRAMMING
($25,000)

This program request is intended to improve the quality of programs organized and conducted by the University of Illinois faculty to meet citizen needs.

For several years, the University of Illinois has been restricted in the number and kinds of public service programs it could conduct due, in large part, to limited resources. As the need for public service programs increases each year, and as new issues of public policy arise, citizens of the State of Illinois come to the University asking for programs which will assist them in clarifying those issues and seek assistance with other problems they encounter from time to time. The University has attempted to be responsive, but lack of appropriate financial resources create barriers for the development and delivery of these programs. The net result is that many citizen requests go unmet each year.

This program is designed to bring about a more rational and responsible approach to the University of Illinois' public service programming. The design brings into play the need for: 1) identification of citizen needs via field staff, 2) seed money to support innovative programs that eventually will be sufficiently strong to become self supporting, 3) coordination of public service programs which are initiated by each of the campuses, and 4) a vehicle to accomplish the aforementioned items.

The quality of the programs provided by the University of Illinois is unique due to the extensive research base which permits exploration of the various facets of each issue being discussed. The quality of the program, therefore, lies directly attached to our research programs, in areas of public policy, citizen needs, and state-wide resources. Information dissemination of research findings that begin to respond to citizen needs is a major facet of this program effort. The priority of this program, therefore, must be linked to the research capability of the University of Illinois and its responsibility to teach and disseminate information regarding these research findings.

While there are many program requests which come to the University which can better be responded to by local and regional institutions, there are an equal number which, because of the depth and breadth of information needed to respond appropriately, are central to the University of Illinois' mission. Given this fact, the University has a responsibility to respond to those needs as funds are available in an attempt to create informed citizenry on public policy and other issues of concern to residents in this state.

Resources required for this program total $25,000 in FY 1981. Resources will be used for the development of programs by current faculty at the Medical Center, Chicago Circle or Urbana-Champaign campus, who have the expertise to most appropriately respond to these program requests. Three thousand dollars of the amount requested will be devoted to expenses incurred in the developmental process, including travel, commodities, equipment, etc.

CONSUMER HEALTH PROGRAMS
($50,000)

Introduction

Good health is a basic quest of mankind. Research has shown increasingly that lifestyle, diet and effective use of health services have much to do with the health of individuals. Recent studies also indicate that the care a person takes of his/her mental and physical health at an early age is directly related to his/her mental and physical conditions at a later age. Using this research as a basis for this project, the concept of "wellness" will be at the core of this effort.

The general thrust of this project is to create an awareness and call attention to good health habits. This will be accomplished through the development of special topic programs on health related matters in which consumers are interested. Programs in the form of radio and television spots, newspaper articles, interviews with specialists, and informational packets will provide for a multi-media based delivery system. Subject matter materials will be developed largely by faculty of the University of Illinois.

Program Content and Objectives

The objectives of this program include:

1. The identification of University faculty expertise in content areas to be addressed,
2. The development, using this faculty expertise, of subject matter content into varied program formats for delivery, and
3. The establishment of several program delivery mechanisms, including face-to-face instruction, newspaper, radio, and television spots and others.

Clientele: There will be no single clientele group for this program effort. Because its intent is designed to reach the general public, as well as health professionals, instructional materials may vary in content and educational level. Subject matter topics will include, among others,

programs about nutrition, self concept, various common diseases, exercise, jogging, medication, drugs, and use of leisure.

The approaches to be used to deliver information and educational materials to the citizenry will be varied, depending upon location, media resources, and the audiences targeted.

Resource Requirements

Faculty for off-campus program: Faculty associated with this project will be those who carry appointments in academic units within the University of Illinois. Some programs will require over-load stipends to faculty while many other programs will be conducted as part of a faculty member's on-load responsibility. Nearly all of the faculty will be full-time employees of the University.

The total amount requested is $50,000 for FY 1981.

UNIVERSITY OF ILLINOIS GERONTOLOGY CENTER ($70,000)

The University of Illinois Gerontology Center is the only broad-based multidisciplinary and multi-campus program of gerontology research and public service within the State of Illinois. As a facilitating and support mechanism for a broad spectrum of research and public service programs, the Center helps to develop University-community networks and programs and to identify potential areas for gerontological research, public service and sources of funding.

The increase in the percentage of persons aged 65 and older in the population has a profound effect on individual and societal behavior and welfare. The structure and foundation of the family, the labor force, welfare services, health care, education and economic policies, as well as practices of government, are affected. An expanding demand is thus created for qualified and motivated research scientists, teachers, direct service providers, program planners, advocates and administrators to meet changing needs.

Justification and Rationale

The University has consistently involved itself in university-government cooperative endeavors and intends to continue that relationship in the area of gerontological research. Federal government resources made available to universities for study of gerontological issues beyond the traditional support of bio-medical research are increasing. However, certain federal allocations (particularly those administered by the Administration on Aging) are being made contingent upon funding applications developed through formally recognized centers or similar units. Federal research grant guidelines place an increased emphasis on multidisciplinary proposals designed to focus on complex problems in a holistic manner requiring the coordination offered by broad-based and committed interdisciplinary programs in aging.

Statement of Program Goals - The broad goals of the University of Illinois Gerontology Center are:

1. To encourage and facilitate basic and applied research in aging throughout the University of Illinois system;

2. To stimulate and coordinate inter-departmental and multidisciplinary courses in gerontology, drawing upon the professional resources of all three campuses;
3. To collect and disseminate information on current governmental and private sector needs, support for research, education, and public service in gerontology;
4. To encourage the education of researchers, the training of professionals and volunteers as planners, and service personnel to work with the aged; and
5. To facilitate campus units and community agencies' efforts in the development of programs for older adults.

Until now, much of the University's contribution to the knowledge of gerontology on a national level has come from the initiative of individual faculty members. A major function of the Center is to facilitate and strengthen intra- and inter-campus collaboration for organized research and public service. Core support on a continuing basis will greatly facilitate efforts to secure external support for expansion of program capacity in gerontology.

The Center will:

1. Improve the University's effectiveness in gaining access to and drawing together information on research resources, publications, and related developments in the field of gerontology;
2. Enhance communication among scholars through faculty forums, conferences, task forces, workshops and other activities;
3. Expand areas of dissertation research, facilitate faculty development and access to internship and fellowship support, and assist in the provision of training materials; and
4. Serve as a locus of gerontology inquiry for students, faculty and community agencies through expansion of research and public service capacities on the three campuses of the University of Illinois.

A unique strength of the Center is its ability to offer, through close collaboration with the University Medical Center, the bio-medical and health care/service dimensions that many other centers lack. This is

particularly important because of a growing national concern for the increasing number of frail elderly persons who face premature and costly institutionalization.

A faculty advisory committee representing the three campuses has been appointed by the General University Administration to make recommendations on policies and goals for the proposed Center. Each campus of the University will co-sponsor with the Center a coordinating unit to develop its own campus activity and relate that activity to the University Gerontology Center.

Incremental State funds will be required on a continuing basis to support the position of Director and the core program functions. Financial support for activities of the proposed Center, beyond the core functions, will be sought by the Director and the University Gerontology Committee from external funding sources, both public and private. Firm and continuing core funding is essential to demonstrate both University commitment to gerontology and to sustain the mechanism to respond to faculty and community concerns in ways appropriate to the University of Illinois.

Information concerning the clientele to be served, relationship to existing programs, and planned program evaluation were outlined in the new program materials submitted in FY80.

Resource Requirements

During FY80 internal reallocation from non-recurring funds provided the basic funding for the Director and supporting staff. The amount of $70,000 in new state funds will be required for FY81 to continue the basic support of the Gerontology Center. Additional funds will be sought from various federal and other sources for research and public service programs.

COORDINATOR OF GOVERNMENTAL SERVICE PROGRAMS IN INSTITUTE OF GOVERNMENT AND PUBLIC AFFAIRS ($31,000)

Relationship to Institutional Priorities

Faculty cooperation with state government on research involving matters of public policy has historically and traditionally been central to the University's mission of public service. This program request strengthens the University mission of public service. This request provides for a full-time Coordinator for Government Service Programs to develop additional research/informational exchanges between University of Illinois faculty and state government officials, agencies, and departments. Specific mechanisms would be developed which make the research capabilities and resources of University faculty better known and more accessible to state policymakers, with particular emphasis on the executive and legislative branches of state government.

Justification and Rationale

There is growing awareness both nationally and statewide that higher education needs to develop more effective communication channels with state government officials. Many state officials are simply unaware of potential contributions that University of Illinois faculty can make in addressing research issues of public policy facing Illinois. The need to strengthen existing state/university research exchanges has been precipitated, in part, by the fact that:

-- The continuing information explosion has made it increasingly difficult for state government officials to keep abreast of current information on issues of public policy.

-- The University's tradition of research cooperation with state government has rested on long-standing personal relationships developed on an ad hoc basis. Newcomers to either state government or the University may find it difficult to establish useful collaborative ties.

-- State government is increasingly using private consultants to provide expertise on scientific issues. Since the needed scientific resources already exist at the University, this development is creating unnecessary duplication of personnel and equipment and likely is costing Illinois taxpayers millions of extra dollars every year.

The impetus for this expanded program request evolved out of the recommendations of the President's Assembly on State Policy Research at the University of Illinois held in October 1978. The proposed program replaces the ad hoc attention previously given these research exchanges and systematically focuses on strengthening faculty public service contributions with state government. Examples of possible program activities include:

-- placement of senior-level doctoral students and faculty in state government units, for a designated period or project, as research and policy analysts.
-- a series of faculty-state agency research exchanges or briefings on issues of statewide public policy.
-- providing encouragement and opportunities for interested faculty to develop collaborative research projects with state government units on issues of public policy.

The types of activities noted above are expected to provide the following benefits:

1. State Government officials, especially at the agency or department levels, will be more aware of University research capabilities and contributions to policy problems facing Illinois thereby increasing the resource pool of experts available to the state.

2. University faculty will increase awareness about issues of state policy anticipated by governmental decision makers. As a result, University faculty may be encouraged to expand long-term research on issues relative to Illinois.

3. Students will have an opportunity to participate in research and analysis on Illinois policy issues.

4. University faculty expertise will be brought to bear systematically on issues of statewide public policy. This may not only spawn new cooperative state/University research projects, but may reduce the use of private consultants at a considerable saving to the state.

5. The quality of governmental policymaking may be improved.

Resources Requested

Total resource requirements include a full-time coordinator, clerical support, travel, and general program expenses.

ALUMNI CAREER CENTER
($43,000)

The Alumni Career Center is a Chicago-based public service component of the University of Illinois serving graduates of all campuses. From its Roosevelt Road Building location on the Chicago Circle campus, the Center serves two principal alumni groups: (1) recently graduated alumni who either did not or could not secure professional employment through their respective campus placement services and are either geographically prohibited from or no longer eligible for on-campus interviewing; (2) alumni seeking career change after having been employed in one or more positions after graduation. Approximately 35% of registrants are in group (1), approximately 65% in group (2).

The academic backgrounds of Alumni Career Center registrants are typically from disciplines experiencing minimal amounts of active on-campus recruitment by employers or limited opportunities from other sources. These graduates are generally confronted with the situation of seeking jobs because jobs are not seeking them. To be successful, candidates must develop job search strategies, skills, and contacts which the Center provides to alumni on a personalized basis.

The heavy and increasing case load of alumni seeking the services of the Center can perhaps be best illustrated by the length of the waiting period for personal counseling appointments. This period was approximately 1.5 weeks during the third quarter of 1977, but has risen to approximately 4.6 weeks by the same period in 1978. Multiple visits are generally needed by registrants. The Center is staffed by one full-time professional and one full-time non-academic employee.

An eight member Advisory Board composed of campus representatives, a U. of I. Alumni Association representative, and alumni active in corporate or industrial personnel management conducted a review of the program and activity of the Center and supports the immediate addition to the Center staff of one professional and one non-academic employee; the Advisory Board also believes that the growth of the Center service will require the addition of a third professional staff member within one year. The Advisory

Board is conducting an assessment of the satisfaction of Center clientele with various services rendered by the Center which is expected to develop into an ongoing activity.

The requested funding will be utilized to secure appropriate staff increases to develop and maintain a needed career placement dialogue between the Center and the high concentration of Chicago-based employer institutions that generally do not recruit their professional talent from campus sources. A FY 1981 funding increase of $43,000, of which $7,300 is non-recurring, is requested.

ESTABLISHMENT OF SRL BRANCH AT THE MEDICAL CENTER
SURVEY RESEARCH LABORATORY
($36,300)

The demand for survey work in the health fields has been growing rapidly as the increasing need for information about health and medical care makes the use of the survey method imperative. Yet, there is presently no survey facility focusing on health and medical care at any medical campus in the State of Illinois, either public or private. The proposed establishment of a branch of the Survey Research Laboratory on the Medical Center campus of the University would fill this gap and make possible the formal and practical training of students in the application of survey methods in the health care fields.

The presence of an office of the Laboratory on the Medical campus would also make possible development of survey related courses to supplement the instructional programs in such areas as preventive medicine, epidemiology, biometry, environmental health, and nursing. Training programs have already been developed on the Urbana campus in collaboration with the Master in Business Administration Program, and are being planned at Chicago Circle with Liberal Arts and programs in sociology, political science, and administrative science. Although several survey-related courses already exist in the School of Public Health, and elsewhere, a coordinated training program in this area remains to be developed. Through the establishment of the Survey Research Laboratory, the leadership and facilities for such a program would be available.

Such a branch would also enable the University to participate more fully in the growing number of health-related projects that involve survey research. At the present writing, for example, pending projects relating to health care and public health amount to approximately $2,216,000. While not all pendings eventuate in funded projects, there is good reason for optimism about a substantial portion of this funding, as many of these pending projects represent either continuation support for existing projects, or proposals that are close to being approved.

Medical studies have become an area with particularly rapid growth, and ties between the Survey Research Laboratory and Medical Center have already

been established. The impetus for this proposal, in fact, has come from the feeling of faculty on the Medical Center campus that an office devoted specifically to medical-related research is desirable.

Another tie that potentially will bring substantial medically-related survey work into the Medical Center is that between the Survey Research Laboratory and the Illinois Cancer Council. With the Associate Director of SRL on leave 60% time to plan research for the Illinois Cancer Council, a growing volume of survey work can be expected from that source, as has been taking place.

Establishment of a branch of SRL at the Medical Center can be done economically in view of the availability of the two other branches of SRL, at the Circle and Urbana campuses. This means that the proposed branch at the Medical Center need focus only on building skills and expertise distinctive to health-care-related surveys rather than be established as a completely new survey facility. For FY 1981, $36,300 in State funding is requested.

DEFICIENCY FUNDING REQUEST
SURVEY RESEARCH LABORATORY
($50,000)

Until this past year a number of key support positions in the Survey Research Laboratory were funded by including them as a charge to projects. Under the terms of an agreement between the University and federal auditors, this pricing practice has been altered so that such support positions can no longer be funded in this manner. The people in these positions provide key support to teaching and research activities by providing assistance to students and staff in the design and conduct of survey research, providing a library and data archiving service, giving noncredit workshops, and other forms of instructional support. Since these support positions relate to assisting faculty and students in their teaching and research programs, they belong under State appropriations.

The basis for this request goes back to 1965, when SRL began operations. At that time, minimum State funding was provided with the understanding that additional funds would be forthcoming at a later time, after experience had been gained with a survey operation. When that time came, however, the University was in a budget crunch, and it was decided to let SRL continue to cover support salaries and provide teaching and research assistance by including such costs in project charges. More recently, however, federal auditors have objected to this pricing system, and the Contracts Office at Urbana, which processes SRL projects, has agreed to a pricing system excluding such support costs. The funds requested herewith are therefore needed to enable SRL to continue to function and to provide a very useful set of instructional and advisory services to the University community. Without these funds, SRL would not only have to virtually eliminate its instructional support activities but it would not have the key support personnel to enable it to function at all.

The amount of funds needed under this request was estimated for the last academic year at $79,141 in consultation with the Urbana Business Office, by listing individual positions affected by this change in pricing practices. The $50,000 requested under this program request would cover most of this deficit, with the anticipation that the remainder will be sought next year.

BASE DEFICIENCIES

As discussed in the introduction in Part I of this document, direct recognition has been given in the past two years to base deficiencies in operation and maintenance of the physical plants at all three campuses of the University, and in the funding for equipment replacement. An appropriation of $200,000 for the equipment deficiency was provided in FY 1979, and $220,000 was appropriated in FY 1980. For the operation and maintenance deficiency, $1,225,400 was appropriated in FY 1980.

These deficiencies result from the effects of inflation upon the University's ability to maintain facilities and equipment at adequate levels. As price increase amounts provided each have fallen further and further behind inflationary increases, the deficiencies have mounted. The State's recognition of this continuing deterioration and the appropriation of deficiency funding to begin the recovery process is most welcome. The continuing impact of inflation, however, serves to reduce the impact of recovery efforts, and to heighten the need for continuing the recovery process at an accelerated rate.

BASE DEFICIENCY IN OPERATION AND MAINTENANCE ($1,500,000)

The proper maintenance and repair of physical facilities are essential to the support of faculty and educational programs. In recent years the impact of inflation and insufficient incremental funds has created a backlog of deferred maintenance projects. Since FY 1971, sufficient funds have not been available for the University of Illinois to maintain and repair its physical facilities at the appropriate level.

Actual operation and maintenance expenditures for FY 1978 were $40,767,700 (FY 1979 data are not yet available). When actual inflation rates are applied to the FY 1971 base, and adjustments are made for the change in area maintained, the funds required in FY 1978 to provide services at the FY 1971 level are $49,760,000. These data indicate an $8,992,250 gap between actual expenditures and those which would be required in FY 1978 at the FY 1971 level. In FY 1981 dollars, the gap between actual expenditures and that which would be required at the FY 1971 level is $10,123,500. This gap is calculated as follows:

Funds Required to Provide O & M Services at the FY 1971 Level

Fiscal Year	Base	x	% Increase	=	New Base
1979	$49,760,000		1.075		$53,492,000
1980	53,492,000		1.072		57,343,400
1981	57,343,400		1.079		61,873,500

O & M Expenditures

Fiscal Year	Base	x	% Increase	=	Inflated Base	+	$ Incremental	=	New Base
1979	$40,767,700		1.075		$43,825,300				$43,825,300
1980	43,825,300		1.072		46,980,700		$ 980,400		47,961,100
1981	47,961,100		1.079		51,750,000				

Note: The % increases are weighted between salary increases and price increases.

DEFICIENCY IN FY 1981 DOLLARS
$61,873,500 - $51,750,000 = $10,123,500

It can be assumed, however, that utility deficiencies are actually accomplished energy savings. It is also reasonable to expect that some efficiencies in productivity should have been accomplished since FY 1971 (a productivity rate of 1% per year was applied to the deficiency calculation). The resulting total deficiency in funds for operating and maintenance after adjustments for utilities savings and productivity was $5,829,300 in FY 1978. When this deficiency is inflated to FY 1981 dollars and incremental dollars provided for additional O & M support are subtracted out, the resulting gap is $6,190,500.

	Base Deficiency	Inflation	Recovery Funds	Deficiency
FY 1979	$5,829,300	1.075		$6,266,500
FY 1980	6,266,500	1.072	$980,400	5,737,300
FY 1981	5,737,300	1.079		6,190,500

Although recovery funds of $980,000 were received in FY 1980, due to the high inflation rate projected for FY 1981, anticipated recovery is expected to be negated.

The total University deficiency of $6,190,500 represents underfunding of $675,304 at Chicago Circle (10.9%), $2,228,940 at the Medical Center (36.0%), and $3,286,307 at Urbana-Champaign (53.1%).

This identified underfunding has resulted in deferred maintenance for many of the University's buildings. Consequently, projects which may have been minor and completed at minimal expense, have become major remodeling needs due to neglect. It is imperative that the University maintain its current facilities in order to adequately serve its students and faculty.

The University is requesting $1,500,000 for operation and maintenance deficiency recovery for FY 1981. This would allow for funding of $163,500 for Chicago Circle (10.9%), $540,000 for Medical Center (36.0%), and $796,500 for Urbana-Champaign (53.1%). With this support, assuming no further losses to inflation, recovery would occur in approximately 4.0 years.

EQUIPMENT DEFICIENCY
($600,000)

In the past several years the University of Illinois has accumulated a backlog of obsolete equipment requiring replacement. This deficiency in equipment replacement has resulted from two sources.

1. Large amounts of equipment purchased during the growth period of the early and mid-1960's have become obsolete.
2. With one minor exception, since FY 1973, State funds available annually for equipment purchase have been inadequate to replace obsolete equipment in the State funded portion of the University's equipment base.

Since FY 1972 the University has conducted an equipment deficiency study to determine the value of obsolete equipment requiring replacement. To the extent that sufficient funds are not provided to replace obsolete equipment, a deficiency exists. The table below shows the yearly results of the study.

Fiscal Year	Sufficient Funds (+) or Deficiency (-) (Dollars in Thousands)
1972	$ +597.6
1973	-457.4
1974	+89.2
1975	-639.8
1976	-2,264.8
1977	-1,634.3
1978	-2,760.8
1979	-3,136.3
1980	-2,741.4

The University sought $600,000 in its FY 1980 budget request for reduction of the equipment deficiency. The Board of Higher Education supported this request in the amount of $400,000, and $220,000 was provided for this item in the University's FY 1980 appropriation. It is clear, however, that $220,000 will only begin the recovery process. Serious deficiencies remain in equipment necessary for direct instruction and for related laboratory research. To continue the process of reducing this deficiency, the University requests $600,000 for FY 1981. This amount will provide $200,000 for the Chicago Circle campus and $400,000 for Urbana-Champaign.

TABLE 16
SUMMARY OF SPECIAL SERVICES/FUNDING REQUESTS

Urbana-Champaign		$645,900
Programs from the Cooperative Extension Service of the College of Agriculture (funding requested from the Agricultural Premium Fund)		
1. County Board Matching	$283,000	
2. Expansion of Telenet System	67,200	
3. Nonacademic Salary Adjustments	49,400	
4. Area Extension Advisors	68,000	
5. Deficiency Appropriation to Maintain Current Size of the Illinois Cooperative Extension Service	178,300	
General University		88,000
Library Computer System	88,000	
University Total, Special Services/Funding		$733,900

SPECIAL SERVICES/FUNDING COMPONENTS

Included in this section are budget requests for essential services provided by the University to residents of Illinois. These services are outside the University's core functions of instruction, research, and public service. As such the resource requirements of these services should not compete for educational funding.

Included are requests for County Board Matching (UC), Expansion of Cooperative Extension Service Telenet System (UC), Area Extension Advisers (UC), Cooperative Extension Service Nonacademic Salary Adjustments (UC), Deficiency Appropriation to Maintain Current Size of the Illinois Cooperative Extension Service (UC), and Library Computer System (GU).

COUNTY BOARD MATCHING FUNDS
($283,000)

Under the County Cooperative Extension law which was amended by the General Assembly in 1979, the State through the University of Illinois is required to provide appropriations from the Agricultural Premium Fund (APF) to partially match allocations from county sources in support of county Extension work. The State money supplements county funds and the law provides for a gradual increase in the matching rate up to a 50-50 ratio by 1984.

County or multi-county Extension Councils, which were established according to guidelines approved by the University of Illinois Board of Trustees, forward proposed county or multi-county budgets to the Director of the University of Illinois Cooperative Extension Service for review and approval. The approved budgets are then submitted to the appropriate county governing board by the county or multi-county Extension Council. Local funds are then paid to the University of Illinois to be maintained in county trust funds and are used along with the APF matching funds in a manner consistent with the approved budgets. Trust funds are used to pay local costs such as rent, some salaries, program materials, local travel, etc., of the more than 100 county Extension offices.

The amended County Cooperative Extension Law calls for an increase in the matching provision from 30 to 35 percent for FY 1981 of funds received from county sources. This change is effective July 1, 1980.

The State Agricultural Premium Fund allocation for FY 1979 matching was $762,800 (25% match requirement). The FY 1980 appropriation at the 30% level is $1,088,300.

Incremental funds for FY 1981 are requested in the amount of $283,000 to comply with the 35% matching requirement of the amended State Law. (See following table for a more complete description of the distribution of required funds over a 7-year period.)

Agricultural Premium Fund County Match

Year	County Sources	APF State Match	Change In APF Allocations Actual & Estimated	Total Budget
1977-78[1]	$ 2,156,400 (75%)	$ 718,800 (25%)	$ --	$ 2,875,200
1978-79[1]	2,288,500 (75%)	762,800 (25%)	44,000	3,051,300
1979-80[2]	2,539,500 (70%)	1,088,300 (30%)	325,500	3,627,800
1080-81[3]	2,546,700 (65%)	1,371,300 (35%)	283,000	3,918,000
1981-82	2,538,600 (60%)	1,692,400 (40%)	321,100	4,231,000
1982-83	2,513,100 (55%)	2,056,300 (45%)	363,900	4,569,400
1983-84	2,467,450 (50%)	2,467,450 (50%)	411,150	4,934,900

[1]Numbers reflect actual allocations received from counties and matched with APF funds.

[2]Numbers reflect estimates contained in University of Illinois FY 1980 request.

[3]FY 1981 and beyond are forecasts based on annual increases in the total budget of 8% (6% for inflation and 2% for program growth).

EXPANSION OF COOPERATIVE EXTENSION SERVICE TELENET SYSTEM ($67,200)

The Cooperative Extension Service TeleNet System consists of amplified phones tied together 24 hours a day by leased dedicated telephone lines. The Telephone System was instituted in the Fall of 1970 with an initial installation at 17 county Extension offices. The system currently is operational in 62 county and regional Extension offices, leaving 51 offices unserved.

TeleNet is used for a variety of educational programming activities. Technical updating is provided to field staff members on a weekly basis. Special training for specialized advisers is offered frequently. Direct teaching of clientele by campus-based faculty is delivered via TeleNet when travel schedules and other considerations dictate its use. Short sessions with regional directors are held daily. These discussions deal with the many administrative matters that are essential to the management of Cooperative Extension Service (CES) staff that consists of approximately 1,200 professional, nonacademic and paraprofessional people. During calendar year 1977 there were nearly 69,000 person-contact hours of programming conducted for all purposes via TeleNet.

The TeleNet System has become an increasingly important part of the CES delivery system. Because of tight travel budgets, increasing travel costs, the need to conserve energy, and the expansion of CES responsibilities--particularly in urban communities--it has become apparent that TeleNet must be used to its fullest potential.

General communication and specific teaching opportunities are limited by the lack of TeleNet outlets in nearly half of the Extension offices in the State. Staff members had to duplicate efforts with alternate delivery methods for the half of the potential audience that cannot be reached via TeleNet.

The recurring costs of operating the 55 station TeleNet System in FY 1978 amounted to approximately $76,000. Of the total, almost $18,000 was from county trust accounts. In addition, there are currently 2.00 FTE staff in the College of Agriculture who coordinate activities and programming over the system. The long run plan, in addition to completing the basic network, is to provide a transmitted writing capability at

each of the TeleNet locations by means of the Gemini 100 or electronic blackboard or one of several emerging transmitted writing systems. Counties will be expected to make the major financial contribution toward the cost of these units as well as to continue to provide funds to cover a portion of the basic operating costs of the system. The long run intent is for the counties to provide one-half of the operating costs of the system.

The proposed budget will provide TeleNet capability to 26 offices currently not served by the system, leaving 25 other offices without direct access to the system.

	FY 1981	FY 1982
Academic Staff		
1.00 FTE Programming Technician (To provide graphics and visual support and to do program planning)	$ 21,000	
Expense		
Equipment Rental (Telephones, lines, and installation charges for TeleNet)	46,200	$ 45,400
TOTAL	$ 67,200	$ 45,400

COOPERATIVE EXTENSION SERVICE
NONACADEMIC SALARY ADJUSTMENTS
($49,400)

The Cooperative Extension Service of the College of Agriculture, University of Illinois at Urbana-Champaign operates offices at 122 locations throughout the State. Approximately 237 FTE staff provide clerical services to a field staff of 372 professionals and 362 paraprofessionals. The nonacademic staff are Civil Service employees of the University and are paid according to a compensation plan approved by the Merit Board.

Compensation Areas

The State has been divided into four regions or compensation areas. There are four distinct salary scales for nonacademic employees of the Cooperative Extension Service. The salary scale for each compensation area is intended to reflect "market" conditions. Market surveys are conducted periodically to determine if the University of Illinois salary scale is competitive. Adjustments in boundaries of the compensation areas are made from time to time. The entire scale also is adjusted when conditions warrant. The most recent review of market conditions and resulting adjustments to compensation areas will involve 26 counties and will cost $3,600.

Personnel Reclassification

Clerical staff of the Cooperative Extension Service housed in field offices are classed as County Extension Secretaries. There are two levels in use, Secretary I and Secretary II. The Office of Personnel Services has created a third level (Secretary III). This latter position entails supervision responsibilities and is to be assigned only where justified by complexity of work and staff size in a given office. To implement effectively three levels of County Extension Secretary positions, it will be necessary to shift 26 positions to the third level from the second level and 59 positions to the second level from the first level. Funds in the amount of $45,800 will be required to accomplish these changes.

AREA EXTENSION ADVISERS
($68,000)[1]

The delivery system of the Cooperative Extension Service (CES), in terms of professional staff, consists of 371 county advisers supervised by regional directors and 135 state specialists who are members of various academic departments of the Urbana-Champaign campus. The county staff members conduct direct educational programs in four program areas--Agriculture, Home Economics, 4-H and Youth Development, and Community Resource Development. The state specialists prepare educational materials for the county staff, do some direct teaching of extension clientele, and work in collaboration with their research colleagues on major problems affecting agriculture, the home, youth, and Illinois communities.

It has been necessary over time to supplement this staff with equally qualified persons who serve in the role of area advisers. These staff members have expertise in selected subject matter fields and they provide a capability to CES to concentrate on specific problems in a geographical region. This function cannot be accomplished by state specialists, who program for the entire State, or by county advisers, who must serve primarily as generalists. Currently, there are 18 area adviser positions in the CES staff, not counting the thirty Farm Business-Farm Management Advisers.

These positions are shown below:

--4.00 FTE Livestock Advisers
--5.00 FTE Resource Development Advisers
--1.00 FTE Dairy Adviser
--1.00 FTE Entomology Adviser
--3.00 FTE Agricultural Engineering Advisers
--2.00 FTE Horticultural Advisers
--2.00 FTE Farm Management Advisers
18.00 FTE

These people are housed off campus, generally in regional directors' offices. They are responsible for working directly with Extension clientele

[1]Of this amount, $4,000 is nonrecurring.

in designated multi-county areas. They also provide assistance in their area of expertise to county staff. The academic departments are responsible for monitoring the quality of this work, and the Area Advisers are brought to the campus several times each year for in-service training and assistance from the academic departments.

The present staff of three Area Advisers--Agricultural Engineering serves six of ten regions. This three-person staff provides back-up to county staff members who usually are not trained in agricultural engineering. The area advisers also work directly with clientele and establish demonstration sites. The program is directed toward farming operations and is concerned with technology transfer as it relates to farm structures and related mechanization. Matters of urgent concern include the application of alternative sources of energy, i.e., solar energy, modern grain drying procedures, construction of complex livestock facilities and the ventilation and sewage disposal problems inherent in such facilities, and the reduction of pollution of all kinds, including non-point sources. Many of these matters are of urgent concern to the agricultural industry of Illinois, and it is critical that CES enhance its capability to respond to these needs.

The addition of two Area Advisers--Agricultural Engineering will complete the staffing pattern and will provide the geographic dispersion of staff that is needed to provide service in this subject matter area.

Funds are requested for the following:

	FY 1981
Academic Staff	
2.00 FTE Area Advisers--Agricultural Engineering	$ 44,000
Nonacademic	
1.00 FTE Secretary	8,000
Expense	
Travel	7,000
Program Supplies	2,000
Office Rent	3,000
Equipment	
Office Equipment	4,000[1]
TOTAL	$ 68,000

[1]Nonrecurring amount.

DEFICIENCY APPROPRIATION TO MAINTAIN CURRENT SIZE OF THE ILLINOIS COOPERATIVE EXTENSION SERVICE ($178,300)

The land-grant college in each state receives Federal appropriations according to an established formula to help maintain the Cooperative Extension Service (CES). Generally, these funds must be matched by State funds, and the counties also provide funds (called "trust funds" in Illinois) to complete the cooperative arrangement. Basic support in FY 1978 for the Cooperative Extension Service in Illinois was as follows:

Source	Thousands of Dollars		Percent
Federal (Smith-Lever 3b & 3c formula)	$ 4,468.0		
Federal (Smith Lever 3d)	2,545.8		
SUBTOTAL FEDERAL		$ 7,013.8	40.5
State General Revenue	4,647.7		
Agricultural Premium Fund	2,275.8		
APF County Match	718.8		
SUBTOTAL STATE		7,642.3	44.1
County Governments	1,298.5		
Other Local Support	1,362.4		
SUBTOTAL LOCAL		2,660.9	15.4
TOTAL		$ 17,317.0	100.0

Additional Federally earmarked funds are provided for special purposes, such as pest management and direct marketing. Some additional State funds also are received for particular programs such as the Consumer and Homemaker Education Program, Energy Conservation and others. These special-purpose projects ("soft money" projects) resulted in the receipt of $239,000 additional Federal funds, $1,215,000 of additional State and Federal pass-through funds, and $53,200 in institutional funds,

making the total budgeted in FY 1978 from all sources and for all purposes $18,824,200.

These sources were budgeted in FY 1978 according to the following categories:

Source--All Funds	Thousands of Dollars Salaries	Expenses	TOTAL
Federal Smith-Lever 3b & 3c formula	$ 3,038.2	$ 1,429.8	$ 4,468.0
All Other Federal	2,093.6	691.2	2,784.8
State and Federal Pass-through	7,793.3	1,064.0	8,857.3
Local	1,708.3	952.6	2,660.9
Institutional	10.0	43.2	53.2
TOTAL	$ 14,643.4	$ 4,180.8	$ 18,824.2

Fiscal 1979 Deficiency

For FY 1979 the Executive Branch allocated Smith-Lever funds to Illinois in an amount that was not sufficient to cover budgeted salary and expense increases. This action occurred long after the University had entered its fiscal year and after the start of the contract year as well. (The Federal fiscal year begins on October 1.)

The unanticipated shortfall was met by freezing selected positions as they became vacant and by some one-time adjustments designed to produce cash savings, e.g., sixty-day freeze on the filling of all vacant positions.

The assumption in any given year is that the Federal government will provide incremental funding for salary and expense increases comparable to State funded increases and thus sufficient to maintain its share of the CES program at the current staffing level for the year in progress. This assumption has proven to be valid for most years. Only once out of the last ten years (in 1974) was it necessary to request a deficiency appropriation from the State. The request was for $135,442.

The situation for FY 1979 was as follows:

	University Approved Increment Rate	Smith-Lever Formula Base		Calculated Incremental Needs
Salaries	8%	$ 3,038,200		$ 243,050
Expenses	4.5%	1,429,800		64,350
			TOTAL	$ 307,400

Need	$ 307,400
Federal Allocation	129,100
Deficiency	$ 178,300

State resources equivalent to the deficiency are being requested so to fund the curtailed services.

In addition to the above deficiency, other adjustments had to be made--most notably the payment of approximately $130,000 from CES operating funds for the employer's share of retirement. That cost as well was covered by the generation of savings described previously. No deficiency request is being made to cover this shortfall since retirement costs are clearly a Federal responsibility. Steps have been taken to alert the Federal establishment to the difficulties created by the failure to appropriate sufficient retirement funds. The retirement deficiency is not expected to be a continuing problem.

The U.S. Congress has not yet completed its work on FY 1980 appropriations nor is it likely to do so prior to August or September of 1979. House and Senate Agriculture Committees have agreed on a level of funding that is sufficient to maintain essentially the current levels of staffing in the Cooperative Extension Service (at least those supported by formula funds). Action remains to be taken by the Appropriations Committee and by both Houses of Congress. Unfortunately, there are no defensible criteria by which to predict with accuracy the final outcome. Vigorous efforts are being made to keep the Federal establishment informed both as to needs and impacts of the work of the Cooperative Extension Service.

LIBRARY COMPUTER SYSTEM (LCS)
($88,000)

Since FY 1978, the University of Illinois has received State funding to develop and operate a library computer system providing improved accessibility and circulation services to the University and the State of Illinois. It is planned that the system will include 150 inquiry terminals at the University of Illinois, 1 terminal for each of the 18 regional library systems, and 232 terminals at other institutions throughout the State.

Presently the system includes the 150 terminals at the University of Illinois and 61 additional terminals, including 18 for the public library systems. By the end of FY 1980, it is anticipated that another 57 terminals funded through the Higher Education Coordination Act be added to the system, bringing the total network size to 268.

To insure adequate support and delivery, the implementation and expansion of LCS has been guided by a task force plan. This plan calls for expansion of the network to 332 terminals in FY 1981 and to 400 terminals by the end of FY 1982. It is anticipated that funding for these additional terminals will be provided through HECA. Therefore, for FY 1981 the University of Illinois requests $88,000 to fund the linkage and operation of 64 terminals, an annual cost of $1,375 per terminal.

Interest in the state-wide services provided through LCS has been greater than expected. Should the number of institutions wishing to participate, the availability of HECA funds, and the University's assessment of their support capability permit more rapid or greater expansion of the network than currently planned, additional operating funds will be needed.

BASES AND CALCULATION MECHANISMS FOR CONTINUING COMPONENT INCREMENTS

I. Salary Increases

A. FY 1979 Personal Services Base, excluding DSCC = $232,374.7

B. FY 1980 Personal Services Base, excluding DSCC = $253,749.2

C. Calculations for Salary Increase/Compensation

1. Annualization of FY 1980 increase of 7.5% for two months
   FY 1979 Personal Services Base x .075 x .95 x 2/12
   $232,374.7 x .075 x .95 x 2/12 = $ 2,759.4

2. Regular Increase for FY 1981 = 8% for 10 months
   FY 1980 Personal Services Base x .08 x .95 x 10/12
   $253,749.2 x .08 x .95 x 10/12 = 16,070.8

3. Compensation Increment for FY 1981 - 1.7%
   FY 1980 Personal Services Base x .017 x .95 x 10/12
   $253,749.2 x .017 x .95 x 10/12 = 3,415.0

4. Total (1 + 2 + 3) $22,245.0

II. General Price Increase Items

A. FY 1980 Base, excluding DSCC = $30,688.7

B. FY 1981 Percentage Increase = 7.5%

C. Calculation: $30,688.7 x .075 = $2,301.7

III. Utilities Price Increase Items

A. FY 1980 Utilities Base (State Funds) = $20,675.5

B. FY 1981 Percentage Increase = 20%

C. Calculation: $20,675.5 x .20 - $4,135.1

IV. Library Price Increases

A. FY 1980 Library Acquisitions Base (State Funds) = $4,261.9

B. FY 1981 Price Increase Percentage = 13.5%

C. Calculation: $4,261.9 x .135 - $575.4

RETIREMENT
($24,654,500)

For FY 1979 a significant improvement in the financing of the State Universities Retirement System (SURS) was achieved when the amount of incremental funding approved for the University was increased from the "net payout level" to the "gross payout level." In essence, this improvement meant that instead of providing funds sufficient only to cover costs of pensions for employees already retired ("net benefit level"), the State provided funds to cover current costs plus an additional amount to be placed in reserve for future costs of pensions for employees not yet retired ("gross benefit level").

The FY 1980 appropriation for retirement has maintained the gross benefit level. It appears that the need to maintain at least this level has been accepted. A need to move beyond the gross benefit level has been recognized by the IBHE, whose FY 1980 recommendation was for an amount greater than gross benefit (by one percent of covered payroll).

For FY 1981 information has been received from the SURS to indicate the following incremental needs:

FY 1981 Need	Increment
Statutory Level	$24,654,500
Gross Benefit Level	4,720,900

In keeping with the Board of Trustees policy, the University of Illinois' request for Retirement funding for FY 1981 is $24,654,500, reflecting the statutory level.

PART III

FISCAL YEAR 1981 CAPITAL BUDGET REQUEST

Introduction

There are three major segments within the overall FY 1981 Capital Budget request. The first segment contains what may be described as the "regular" request for capital projects: those high-priority building and remodeling projects which are similar in nature to projects which have been included in prior capital budget requests. The amount requested for regular capital projects totals $42,318,400.

A second segment has been developed for FY 1981 to focus upon potential energy conservation projects. The current volatility with respect to the availability of petroleum based fuel and rapidly increasing prices for virtually all fuel sources have combined to place greatly increased priority upon energy conservation projects. Such projects might not normally command top priority on the basis of their impact on repair or renovation needs or programmatic necessity, but the energy situation demands that they receive attention. These energy conservation projects are discussed as an entirely separate section. The amount requested for energy conservation projects totals $12,387,173 and the amount for fuel conversion projects totals $12,634,600.

The third segment, also discussed separately, contains the FY 1981 request for capital funds for the Food Production Research Program (Food for Century III). The amount requested for Food for Century III projects totals $4,607,300.

Emphases of the FY 1981 Capital Budget Request

The first segment of the FY 1981 Capital Budget request emphasizes a long deferred need to upgrade the University library system, and a continuing need to maintain the structural integrity of the physical plants. Table 1 presents a summary of the proposed FY 1981 Capital projects in priority order.

The libraries at the University of Illinois represent a major state and national resource and are central to the effective operation of high quality programs in instruction and research. To maintain this high level of quality, two projects are critically needed: the Library Sixth Stack Addition at Urbana-Champaign, and the library remodeling project at Chicago Circle.

The University's first priority project is the Library Sixth Stack Addition. At the Urbana-Champaign campus, stack space has not kept pace with the growth of the library's collection. Rapidly changing technologies and advances in basic scientific research have led to a dramatic increase in the number of new publications. To provide adequate support to research and teaching efforts, activities which require access to current literature, the Urbana-Champaign library has added approximately 150,000 volumes per year over the last several years to its collection.

Since 1970 there have been no additions to the General Library Bookstack. Efforts to make room for the new volumes, e.g., fore-edging books, have been unsuccessful in alleviating the problem. Finally, in FY 1979, a warehouse facility was leased by the campus to provide temporary storage for the overflowing stacks.

The second and third priority projects involve a major upgrading of the Chicago Circle library. Planning funds are requested to complete architectural and engineering specifications for a major renovation of the main library building. After 15 years of operation, this facility must undergo significant physical modifications if it is to continue to serve the campus effectively. Changes in academic program mix and the initiation of evening programs have altered the patterns of library use. The need to realign the existing space configuration whereby the major service areas are on the first floor and the more specialized services are located on the upper floors makes a major renovation project the preferred solution to the Chicago Circle library problem.

Remodeling funds are requested in conjunction with the Chicago Circle library planning project to relocate the Office of Admissions and Records which currently occupies library space. Once this unit is relocated, valuable library space can be returned to its intended function.

Following the library improvement projects are two equipment requests which will permit space renovated with FY 1979 funding to be occupied and fully utilized in FY 1981.

The next project, Major Building Rehabilitation - Segment 1, is designed to meet the Medical Center's acute need to renovate outdated space and correct building mechanical systems deficiencies. Consistent with the

Space Realignment, Renewal and Replacement (SR^3) concept, the Medical Center is requesting funds to complete building restoration work which cannot be accomplished through regular minor remodeling projects.

Project priorities 8-12 (SR^3) emphasize the University's need to preserve the structural integrity of its physical plants and to meet program related space realignment requirements. While SR^3 projects do not head the capital improvement priority list for FY 1981, their importance to the University has not diminished.

The remaining projects represent a variety of campus needs including: land acquisitions, utility improvements, site improvements, major remodeling, SR^3, equipment acquisitions, and planning. Table 2 presents a breakdown of the FY 1981 capital projects by budget category and campus.

The generation of SR^3 amounts for each campus is presented in Table 3 and a list of actual campus SR^3 projects appears in Table 4. Table 5 shows projections of future costs of projects related to those projects requested for FY 1981.

Status of Ongoing Projects

Table 6 provides a summary of the actions on capital budget requests from FY 1976 to FY 1980. Excluding special projects such as the Replacement Hospital and Food for Century III, the University has not received substantial State support in any year but FY 1976, as measured by the proportion of funds appropriated compared to the total requested.

The University's capital appropriation (new project) for FY 1979, including Food for Century III projects totalled $37,302,100, and over 97% of the appropriation has been released by the Governor (Table 7). It should be noted that although the FY 1979 appropriation bill was signed by the Governor in July 1978, release of these funds was delayed by the State's failure to increase the bond authorization levels for FY 1979 appropriations until December 1978.

Table 8 shows the status of major remodeling and new construction projects funded between FY 1976 and FY 1979. One significant project, the Replacement Hospital ($53,000,000), is nearing completion. The remainder of the projects were approved recently, and thus are in early stages of development.

Table 9 presents a summary of the FY 1980 capital projects approved by the legislature and sent to the Governor for his signature. This level of funding represents 16% of the University's FY 1980 capital budget request.

Detailed descriptions of each campus' FY 1981 capital budget request are presented in the following section. Preceding each campus' project descriptions is a table summarizing the request by budget category and one showing estimated unit costs for new construction and major remodeling projects. The Energy Conservation Package and Food for Century III are presented following the regular capital budget section.

TABLE 1
UNIVERSITY PRIORITIES - FY 1981 CAPITAL BUDGET REQUEST

University Priority	Campus Priority	Project	Budget Category	Project Cost	Cumulative Total	Chicago Circle	Medical Center	Urbana-Champaign
1	UC-3	Library Sixth Stack Addition	BLDG	$8,494,700	$ 8,494,700	$	$	$ 8,494,700
2	UC-4	Library Sixth Stack Addition	UTIL	123,000	8,617,700			8,617,700
3	CC-1	Library - Major Rehabilitation Planning	PLAN	250,000	8,867,700	250,000		
4	CC-2	Relocate Admissions and Records from Library	REMD	832,000	9,699,700	1,082,000		
5	MC-1	SUDMP - Equipment	EQUP	225,000	9,924,700		225,000	
6	UC-1	English Building - Phase II Equipment	EQUP	79,000	10,003,700			8,696,700
7	MC-2	Major Building Rehabilitation - Segment 1	REMD	4,397,400	14,401,100		4,622,400	
8	CC-3	SR^3 - Part I	REMD	1,849,600	16,250,700	2,931,600		
9	CC-4	SR^3 - Equipment	EQUP	5,800	16,256,500	2,937,400		
10	MC-3	SR^3 - Part I	REMD	1,819,200	18,075,700		6,441,600	
11	UC-5	SR^3 - Part I	REMD	2,213,300	20,289,000			10,910,000
12	UC-6	SR^3 - Equipment	EQUP	153,000	20,442,000			11,063,000
13	GU-1	Upgrade Electrical Service, Roosevelt Road Bldg	REMD	326,700	20,768,700			
14	UC-7	Pilot Training Facility	BLDG	455,900	21,224,600			11,518,900
15	CC-5	Handicapped Accessibility Remodeling	REMD	480,000	21,704,600	3,417,400		
16	UC-13	Auditorium Remodeling	PLAN	80,000	21,784,600			11,598,900
17	UC-9	Television Building Remodeling	PLAN	330,700	22,115,300			11,929,600
18	UC-11	English Building Remodeling	REMD	1,650,000	23,765,300			13,579,600
19	CC-6	Instructional Resource Access Center	REMD	100,000	23,865,300	3,517,400		
20	CC-7	Instructional Resource Access Center	EQUP	29,100	23,894,400	3,546,500		
21	MC-6	SR^3 - Part II	REMD	1,408,000	25,302,400		7,849,600	
22	UC-14	SR^3 - Part II	REMD	1,773,100	27,075,500			15,352,700
23	UC-15	SR^3 - Equipment	EQUP	105,500	27,181,000			15,458,200
24	CC-8	SR^3 - Part II	REMD	147,500	27,328,500	3,694,000		
25	CC-9	SR^3 - Equipment	EQUP	100,600	27,429,100	3,794,600		
26	MC-5	Major Building Rehabilitation - Segment 2	REMD	3,831,000	31,260,100		11,680,600	
27	UC-12	Davenport Hall Remodeling	PLAN	75,000	31,335,100			15,533,200
28	MC-7	Major Building Rehabilitation - Segment 3	REMD	3,337,000	34,672,100		15,017,600	
29	CC-10	SR^3 - Part III	REMD	327,700	34,999,800	4,122,300		
30	UC-23	SR^3 - Part III	REMD	1,288,900	36,288,700			16,822,100
31	UC-24	SR^3 - Equipment	EQUP	110,000	36,398,700			16,932,100
32	CC-11	SEL College of Engineering - Remodeling	REMD	783,200	37,181,900	4,905,500		
33	CC-12	SEL College of Engineering - Equipment	EQUP	554,000	37,735,900	5,459,500		
34	UC-8	Life Sciences Teaching Lab	PLAN	601,800	38,337,700			17,533,900
35	CC-13	Roosevelt Road Bldg - Campus Duplicating Service	REMD	447,500	38,785,200	5,907,000		
36	CC-14	Roosevelt Road Bldg - Equipment	EQUP	139,300	38,924,500	6,046,300		
37	UC-16	Life Sciences Teaching Lab	LAND	150,000	39,074,500			17,683,900
38	UC-17	Pennsylvania Avenue Street Improvements	SITE	399,300	39,473,800			18,083,200
39	UC-18	Police and Fire Station	BLDG	1,338,800	40,812,600			19,422,000
40	UC-19	Police and Fire Station	UTIL	166,600	40,979,200			19,588,600
41	UC-20	Engineering Library	PLAN	600,200	41,579,400			20,188,800
42	UC-21	Library Remodeling (Main)	REMD	407,000	41,986,400			20,595,800
43	UC-22	Campus Landscape Improvements	SITE	50,000	42,036,400			20,645,800
44	CC-15	Pedestrian Safety	SITE	100,000	42,136,400	6,146,300		
45	CC-16	Bus Stop Shelters	SITE	45,400	42,181,800	6,191,700		
46	UC-25	Willard Airport Land	LAND	84,600	42,266,400			20,730,400
47	UC-26	Intramural Athletic Fields	SITE	52,000	42,318,400*			20,782,400

*Total includes a General University project of $326,700 (Priority 13).

TABLE 2
SUMMARY OF THE FY 1981 CAPITAL BUDGET REQUEST
By Campus and Category

Category	Chicago Circle	Medical Center	Urbana-Champaign	Total
1. Buildings, Additions, and/or Structures	$ -0-	$ -0-	$10,289,400	$10,289,400
2. Land	-0-	-0-	234,600	234,600
3. Equipment	722,400	225,000	79,000	1,026,400
4. SR^3 Equipment	106,400	-0-	368,500	474,900
5. Utilities	-0-	-0-	289,600	289,600
6. Remodeling	2,642,700	11,565,400	2,057,000	16,265,100
6a. Space Realignment, Renewal and Replacement	2,324,800	3,227,200	5,275,300	10,827,300
7. Site Improvements	145,000	-0-	501,300	646,700
8. Planning	250,000	-0-	1,687,700	1,937,700
TOTAL	$6,191,700	$15,017,600	$20,782,400	$42,318,400*

*Includes a General University remodeling project of $316,700.

TABLE 3
GENERATION OF SR^3 FUNDS FOR EACH CAMPUS-ESTIMATE OF
SPACE REALIGNMENT, RENEWAL AND REPLACEMENT
FUNDS TO BE REQUESTED IN FY 1981

	Chicago Circle	Medical Center	Urbana-Champaign
1. Estimated Replacement Cost of Existing Facilities (as of Fall, 1978), escalated to January, 1981	$318,054,417	$391,166,493	$1,408,973,030
2. Existing Space (GSF) as of Fall, 1978	3,095,015	3,637,557	13,986,109
3. Average Replacement Cost ($/GSF) of Existing Facilities (Step 1 ÷ Step 2)	$ 102.76	$ 107.53	$ 100.74
4. Annual Space Realignment, Renewal and Replacement Generation $/GSF x .667 (2/3 to be Remodeled) x .01 (1 Time/100 Years)	$ 0.6854	$ 0.7172	$ 0.6719
5. Area Campus Maintained by Physical Plant (GSF) with State Funds (FY 1978 space figures adjusted for space additions and deletions through Fall 1980.)	2,782,416	4,140,196	8,797,650
6. FY 1981 Funds Generated at Each Campus (Step 4 x Step 5)	$ 1,907,068	$ 2,969,349	$ 5,911,141
		$ 10,787,558	

TABLE 4
SR[3] PROJECTS BY CAMPUS

CHICAGO CIRCLE

	Project	Amount
	Remodeling	
	Exterior Masonry Repairs	$ 210,500
	Electrical Upgrade - 12KV Underground System	38,900
	General Building Rehabilitation - Phase 1	182,200
	Lighting Modification	106,900
	Stairway and Upper Walkway Repairs	317,100
I	Communications and Theatre - Air Conditioning & Remd.	90,000
	Biological Sciences - Group IIA	236,600
	Business Administration - Case Study Rooms	94,300
	Mechanical Equipment Upgrade	209,100
	Roof, Gutter and Drain Repair - Phase 3	243,000
	Remodel Basement of Stevenson Hall	121,000
II	Biological Sciences - Group IB	81,500
	Biological Sciences - Group IIB	66,000
	Install Hand Dryers	169,800
III	Interior Graphics	60,000
	Campus Security System 7	97,900
		$2,324,800
	Equipment	
	Business Administration - Case Study Rooms	$ 5,800
	Biological Sciences - Group IB	83,659
	Biological Sciences - Group IIB	16,915
		$ 106,374

MEDICAL CENTER

	Project	Amount
	Remodeling	
	Exterior Masonry and Tuckpointing - 9 Buildings	$ 276,000
	Remodel Room 404, Pharmacy Building	148,200
	Elevator Renovation, SUDMP, Phase I	302,500
	EEI Emergency Power, Internal Distribution, Phase II	288,000
	Rehabilitate Convent Building - Boiler and Piping	76,300
I	Remodel Locker Room Area For Group Conference, CON	168,600
	Remodel Room 576-581, SUDMP, Anatomy	115,000
	Remodel Rooms 560-570A, SUDMP, Anatomy	138,000
	JCAH, OSHA, and Code Correction, EEI	115,000
	Remodel Dean's Suite, Pharmacy	80,700
	Roof Repairs, FUDMP and Laundry Building	60,700
	Provisions For The Handicapped	50,200
	Upgrade Electrical Service, Operating Rooms, BRL	48,400
	Install Enclosed Return Air System - AOB	55,000
	Remodel Transplant Research Lab, Room 525, Hospital Addn.	72,600
	Air Condition 2nd Floor South, NPI, Psychiatry	38,500
	Remodel Room W-427, General Hospital, Transplantation	41,800
	Air Condition 2nd and 3rd Floors, Convent Building	173,800
	Remodel 3rd Floor, North, RSM	104,500
II	Remodel O.B. Clinic, General Hospital	220,000
	Extend System 7/Series 1 - Phase III	55,000
	Remodel Rooms 234 and 236, FUDMP, Physiology	61,600
	Create Wet Lab Rooms 409, 409B, FUDMP, Pharmacology	39,600
	Renovate Convent Building	91,300
	Air Condition 8th Floor, South - API, Psychiatry	46,200
	Renovate Lab Hood System, 2nd Floor SUDMP, Pathology	50,600
	Remodel Room 200 Pharmacy	309,100
		$3,227,200

URBANA-CHAMPAIGN

	Project	Amount
	Remodeling	
	Animal Room Improvements	$ 105,100
	Paraplegic Ramp Improvements	72,400
	Davenport Hall - Bio Physics	531,200
	Krannert Center Performing Arts - Remodeling	301,200
	Astronomy Building - Remodeling	202,200
I	Rest Room Accessibility	78,600
	Roger Adams Laboratory Remodeling	154,100
	Natural History Building - Remodeling	90,400
	Sprinkler Systems	265,000
	David Kinley Hall - Room 114	259,700
	Elevator Installations	153,400
	Elevator Replacement	177,300
	Roof Replacement	535,200
	Noyes Laboratory - Remodeling	130,900
	Visual Arts Laboratory	141,600
	Library Safety Improvements	123,300
II	Stair Enclosures	184,900
	Bevier Hall - Remodeling	154,000
	Burrill Hall - Remodeling	74,800
	Steam Distribution Remodeling and Replacement	39,200
	Fume Hood Improvements	33,000
	Classroom Renovation	126,500
	Exterior Stair - Handrails	52,400
	Armory Security Improvements	131,300
	Electrical Modernization	39,900
	College of Veterinary Medicine - Remodeling	269,600
	Remodeling Cooling Towers	130,700
	Institute of Aviation - Remodeling	74,400
	Fire Alarm and Signal Replacement	33,600
III	Remodel Steam Absorption Machines	91,400
	Magnetic Door Holders	49,900
	Install Eyewash and Safety Showers	102,400
	Replace Centrifugal Freon Compressors	165,000
	Metallurgy and Mining Building	87,300
	Loomis Laboratory of Physics - Remodeling	65,000
	Mechanical Engineering Laboratory	48,400
		$5,275,300
	Equipment	
	Animal Room Improvements	$ 32,500
	Davenport Hall - Bio Physics	80,000
	Astronomy Building - Remodeling (Equip)	33,000
	David Kinley Remodeling (Equip)	7,500
	Visual Arts Laboratory	82,500
	Classroom Renovation (Equip)	23,000
	College of Veterinary Medicine Remodeling (Equip)	100,000
	Metallurgy and Mining Building	10,000
		$ 368,500

CC: part I = $1,849,600; part II = $147,500; part III = $327,700
MC: part I = $1,819,200; part II = $1,408,000
UC: part I = $2,213,300; part II = $1,773,100; part III = $1,288,900

TABLE 5 ***
PROJECTIONS OF FUTURE COSTS OF PROJECTS REQUESTED
BY CAMPUSES FOR FY 1981

	Total Cost	Approved Prior To FY 80-81	Budget Year FY 80-81	2nd Year FY 81-82	3rd Year FY 82-83	4th Year FY 83-84	5th Year FY 84-85
Buildings, Additions, and/or Structures	$11,267,400	$ -0-	$10,289,400	$ 195,000	$ -0-	$ 718,000	$ 65,000
Land	234,600	-0-	234,600	-0-	-0-	-0-	-0-
Equipment	2,305,016	-0-	1,026,400	1,278,616	-0-	-0-	-0-
SR^3	474,900	-0-	474,900	-0-	-0-	-0-	-0-
Utilities	1,163,600	50,000	289,600	-0-	-0-	824,000	-0-
Remodeling and Rehabilitation*	63,926,160	2,182,020	16,265,100	11,629,840	11,177,200	11,226,200	11,445,800
SR^3	10,827,300		10,827,300				
Site Improvements	646,700	-0-	646,700	-0-	-0-	-0-	-0-
Planning*	26,109,600	-0-	1,937,700	22,056,900	750,000	865,000	500,000
TOTAL	$117,282,560	$2,232,020	$42,318,400**	$35,160,356	$11,927,200	$13,633,200	$12,010,800

*Excludes future costs associated with Chicago Circle Library rehabilitation.
**Includes General University project at $326,700.
***Excludes energy projects.

TABLE 6
HISTORY OF RECENT CAPITAL BUDGET REQUESTS

	FY 1976	FY 1977	FY 1978	FY 1979	FY 1980
Campus Requests					
Chicago Circle	$ 8,447,100	$10,939,113	$12,775,128	$ 7,788,520	$ 4,439,095
Medical Center	8,146,300	7,227,319	10,731,019	12,409,965	12,889,300
Urbana-Champaign	23,152,700	16,001,929	26,609,843	16,937,056	15,795,600
Total	($39,746,100)	($34,168,361)	($50,115,990)	($37,135,541)	($33,123,995)
IBHE Recommendations					
Chicago Circle	$ 1,109,320	$ 9,699,428	$ 3,203,420	$ 3,311,200	$ 1,810,400
Medical Center	5,640,000	4,228,342	4,878,227	5,111,500	4,489,800
Urbana-Champaign	9,951,100	5,203,520	11,887,700	13,524,100	9,144,500
Total	($16,700,420	($19,131,290)	($19,969,347)	($21,946,800)	($15,444,700)
Appropriation*					
Chicago Circle	$ 1,504,920	$ 177,500	$ -0-	$ 1,715,000	$ 1,710,400***
Medical Center	4,907,200	148,400	296,800	2,430,900	1,336,600***
Urbana-Champaign**	10,982,900	234,130	1,273,600	4,440,500	2,252,700***
Total	($17,395,020)	($ 560,030)	($ 1,570,400)	($ 8,586,400)	($ 5,299,700)***
Appropriations for Special Projects					
Replacement Hospital	$51,250,000	$ -0-	$ 6,000,000	$ -0-	$ -0-
Food Production Research	-0-	-0-	2,450,000	28,715,700	4,329,000
Total	($51,250,000)	($ -0-)	($ 8,450,000)	($28,715,700)	($ 4,329,000)
Total University of Illinois Appropriation	$68,645,020	$ 560,030	$10,020,400	$37,302,100	$ 9,628,700***

*Excludes Replacement Hospital and Food Production Research
**The FY 1979 figure includes $110,000 for a Capital Project appearing in SB 1524
***Based on projects included in HB 2427

TABLE 7
STATUS OF FY 1979 CAPITAL APPROPRIATIONS (NEW)
Senate Bills 1601 & 1524
As of August 15, 1979

Project/Category	Campus	Appropriation	Release Requested* Date	Release Requested* Amount	Release Date	Release Amount	Source of Funds
Buildings, Additions, and/or Structures							
Vet. Med. Basic Sciences Bldg.	UC	$21,027,800	02/21/79	$21,027,800	06/27/79	$21,027,800	CDB
Ag. Engineering Sciences	UC	7,612,900	02/22/79	7,612,900	06/27/79	7,612,900	CDB
Subtotal		(28,640,700)		($28,640,700)		(28,640,700)	
Land							
Subtotal		(-0-)					
Equipment							
SUDMP Equipment	MC	227,000	09/12/78	227,000	11/03/78	227,000	CDB
Animal Room Improvements	UC	70,200	05/10/79	70,200	07/10/79	70,200	CDB
English Bldg. Renovations	UC	35,000	05/10/79	35,000	07/10/79	35,000	CDB
Vet. Med. Research Bldgs.	UC	75,000	04/13/79	75,000	05/30/79	75,000	CDB
Freer Gymnasium (SR^3)	UC	25,000	05/10/79	25,000	07/10/79	25,000	CDB
Gregory Hall (SR^3)	UC	60,000	05/10/79	60,000	07/10/79	60,000	CDB
Noyes Laboratory (SR^3)	UC	8,000	05/10/79	8,000	07/10/79	8,000	CDB
Subtotal		(500,200)		(500,200)		(500,200)	
Utilities							
Central Supervisory Control	UC	710,000	08/10/78	71,000	10/26/78	710,000	CDB
Urbana-Champaign Sanitary District	UC	110,000	08/10/78	110,000	10/26/78	110,000	CDB
Subtotal		(820,000)		(181,000)		(820,000)	
Remodeling and Rehabilitation							
RSM Building Systems Improvements	MC	251,000	08/10/78	25,000	11/03/78	251,000	CDB
Animal Room Improvements--Morril Hall	UC	520,000	08/10/78	520,000	11/03/78	520,000	CDB
SUDMP Remodeling	MC	1,339,500	08/10/78	134,000	12/13/78	1,339,500	CDB
Building Equipment Automation	CC	1,010,000	01/18/79	1,010,000	04/17/79	1,010,000	CDB
English Bldg. Remodeling	UC	1,500,000	08/10/78	150,000	01/02/79	1,500,000	CDB
Roof & Gutter Replacement (SR^3)	CC	650,000	01/18/79	650,000	05/16/79	480,000	CDB
Roof & Window Replacement (SR^3)	MC	613,400	08/10/78	613,400	02/06/79	613,400	CDB
Energy Cons., Code Compliance (SR^3)	UC	1,402,300	08/10/78	442,700	10/26/78	1,402,300	CDB
Subtotal		(7,286,200)		(3,545,100)		($ 7,116,200)	
Site Improvements							
Pedestrian Safety	CC	55,000					CDB
Subtotal		(55,000)					
TOTAL		$37,302,100		$32,867,000		$37,077,100	

reg. cap 8,586.4

* At the time appropriation releases were requested, the capital development board authorization level had not been increase sufficiently to permit the total amounts appropriated for the FY 1979 projects to be released. Therefore, in cooperation with the Bureau of the Budget, only a portion of each projects' total funding was initially requested.

TABLE 8
STATUS OF BUILDING & MAJOR REMODELING PROJECTS

(as of August 15, 1979)

Project	Year Authorized	Estimated Cost	Estimated Completion	Status
Chicago Circle				
Building Equipment Automation	1979	1,010,000	5/81	Bids Due 9/79.
Medical Center				
Replacement Hospital	1976	53,000,000	10/79	98% Complete
SUDMP Remodeling	1979	1,339,500	12/80	Bids for demolition due 9/79 Construction bids due 12/79
Urbana-Champaign				
Energy Management System	1979	710,000	8/80	Design & Develop. of Ph. II prog. in progress.
English Building Renovation	1979	1,500,000	11/80	Construction Documents Phase. Bidding Anticipated 11/79.
Food for Century III				
Veterinary Medicine Basic Sciences Building	1979	21,027,800*	3/82	Mechanical bids due 9/79. General Construction bids due 10/79/
Agricultural Engineering Science Building	1979	7,612,900*	3/82	Mechanical and General Construction bids due 10/79.

*Construction Funds

TABLE 9
FY 1980 REGULAR CAPITAL PROJECTS IN HB 2427
AS SENT TO THE GOVERNOR

1.	Buildings, Additions, and/or Structures	
	Medical Center - Convent Building Acquisition	$ 242,000
2.	Land	-0-
3.	Equipment	-0-
3a.	SR^3 Equipment	
	Chicago Circle	58,800
	Urbana-Champaign	124,000
4.	Utilities	-0-
5.	Remodeling and Rehabilitation	-0-
5a.	SR^3 Remodeling and Rehabilitation	
	Chicago Circle	1,499,100
	Medical Center	1,094,600
	Urbana-Champaign	2,128,700
6.	Site	
	Chicago Circle - Handicapped Accessibility	152,500
7.	Planning	-0-
	TOTAL	$5,299,700*

*See Food Production Research section for anticipated FY 1980 Food for Century III appropriation.

CHAPTER TWO

DETAILS OF THE FY 1981 CAPITAL BUDGET REQUEST

CHICAGO CIRCLE

The Chicago Circle request for capital funds for Fiscal Year 1981 contain projects which are essential to support academic programs, maintain the physical plant, and enhance the utilization of existing space. The highest priority request is for funds for planning the remodeling of the Library. Improvement of the library collection and services to support changing academic programs is critical to fulfillment of the campus mission. The remodeling of the library will be a major step in carrying forward a clearly defined program of meeting the needs of all library users.

Chicago Circle's capital improvement plan for the 1980's emphasizes attention to the maintenance needs of the plant. Repair and rehabilitation must be an ongoing process if the campus is to use existing facilities as effectively as possible. Hence, the SR^3 projects are ranked high on the priority list. Within the SR^3 grouping, the rankings take into consideration the urgency of the requests.

Providing services to handicapped persons has been for some time a growing consideration on this campus. For fiscal year 1980 the campus requested $152,000 in capital funds to be used to improve accessibility on the campus. For FY 1981 the campus is proposing initial funding in order to make major strides towards a six-phase accessibility improvement plan. In addition, an Instructional Resource Access Center which would bring an important academic support program within the reach of handicapped students is also requested. In keeping with the spirit of Section 504 of the Rehabilitation Act of 1973, these programs have been assigned a high priority in Chicago Circle FY 1981 capital budget.

Subsequent items in the request are geared to the support of academic research and more efficient and cost effective administrative services. Additional projects deal with improved services to all persons using the campus, and improved security.

TABLE 1
CHICAGO CIRCLE CAMPUS
LIST OF FY 1981 PROJECTS BY CATEGORY

	Projects	Estimated Cost
1.	Buildings, Additions, and/or Structures	$ -0-
2.	Land	-0-
3.	Equipment	
	Instructional Resource Center Equipment	29,100
	SEL - College of Engineering	554,000
	RRB - Campus Duplicating Service	139,300
	Subtotal	($ 722,400)
3a.	Equipment Related to Space Realignment, Renewal and Replacement Projects	106,400
	Subtotal	($ 106,400)
4.	Utilities	-0-
5.	Remodeling and Rehabilitation	
	Remodel SES (Relocate OAR)	832,000
	Handicapped Accessibility Remodeling	480,000
	Instructional Resource Access Center	100,000
	SEL - College of Engineering	783,200
	RRB - Campus Duplicating Service	447,500
	Subtotal	($ 2,642,700)
5a.	Space Realignment, Renewal and Replacement	
	Generated Amount	1,907,100
	Additional Projects	417,700*
	Subtotal	($ 2,324,800)
6.	Site Improvements	
	Pedestrian Safety	100,000
	Bus Stop Shelters	45,400
	Subtotal	($ 145,400)
7.	Planning	
	Library Major Rehabilitation Planning	250,000
	Subtotal	($ 250,000)
	TOTAL FY 1981 CAPITAL BUDGET REQUEST - CHICAGO CIRCLE	($ 6,191,700)

*Some additional projects moved to energy conservation package

TABLE 2
COST PER SQUARE FOOT OF NEW BUILDING AND MAJOR REMODELING PROJECTS
Chicago Circle Campus

Category/Project**	Project Cost*	Gross Square Feet	Assignable Square Feet	Efficiency ASF/GSF	$/GSF	$/ASF
New Buildings						
Major Remodeling (FY 1981 Request)						
Remodel SES (Relocate OAR)	$ 832,000	16,000			$52.00	
Library Remodeling	2,875,000	111,924			25.69	
Instructional Resource Access Center	100,000	3,060	1,408	.46	32.68	71.02
SEL - College of Engineering	783,200	29,400	18,088	.62	26.63	43.29
RRB - Campus Duplicating Service	447,500	15,151	10,000	.66	29.53	44.75

*Construction Costs
**Includes FY 1982 projects for which planning funds are requested in FY 1981

Equipment

Business Administration - Case Study Rooms - ($5,800)

This project will create three rooms of 500-600 square feet each for use in the case study method of teaching business management courses. Rooms will require construction of two tiers of fixed tables arranged in a semi-circular or U-shape. The case method involves the assignment of a particular case to the class. During class meetings, various students present their analysis of the case for class comment and discussion. Often this type of class places as much emphasis on student-student confrontation as it does on student-instructor confrontation; in fact, the instructor serves only to direct discussion. The College of Business Administration undergraduate and graduate students should benefit from the improved instructional program being offered in these facilities.

The following equipment will be required: 105 ASE L(L) Side chairs without arms.

Instructional Resource Access Center - ($29,120)

This project compliments the remodeling of rooms 104 and 106 Grant Hall (1408 NASF) to accommodate the Instructional Resource Access Center.

The following equipment will be required to make the remodeled space functional:

1. Captioning equipment for one video terminal.
2. Braille keysets.
3. Booster amplifiers.
4. Headsets with microphones for audio carrels.
5. Cassette tape decks.
6. Color video tape players.
7. Color monitors to be connected to tape players.
8. MEK 6800D2 microprocessor kits with power supply for use with audio carrels.
9. Study carrels meeting the specifications for handicapped accessibility and adjustable stools.

Biological Sciences - Group IB - ($83,659)

The Biological Sciences Department has three projects for remodeling in the Science and Engineering South Building (SES) in the priority Group IB.

The following equipment will be required to make the remodeled space functional:

1 SORVAIL RC-5 ultra centrifuge with rate control, SS-34 and GSA high speed rotors.
1 SORVALL GLC-2B centrifuge with type HL-4 horizontal rotor, trunion rings and buckets.
1 Model 250 Gilford UV-Vis spectrophotometer with ACC, chart recorder, auto cuvette positioner, wavelength scanner, dual light source.
1 Beckman model LS3100 liguid scintillation counter 3 channel with teleprinter.
1 Beckman preparative ultracentrifuge model L5-65.
1 Fixed angle rotor type 65.
1 Swinging bucket rotor SW65 Ti
1 Swinging bucket rotor SW27
1 Zeiss universal microscope with optical equipment and special illuminator for fluorescence and bright field.

Biological Sciences - Group IIB - ($16,915)

The Biological Sciences Department has three projects for remodeling in the Science and Engineering South Building (SES) in Group IIB.

The following equipment will be required to make the newly remodeled space operational:

1 Sorvall RC-5 ultracentrifuge with SS34 and GS3 rotors
1 Beckman model 3500 pH meter with conbination electrodes
1 Model TCF10 amicon high performance thin channel ultrafiltration system
1 Stirrer hot plate-Corning PC 351
1 Shaker incubator New Brunswick model G-25
1 AO-#820 Spencer rotary microtome
1 Omego D-4 enlarger with lenses and ACC

SEL-Remodeling - College of Engineering - Phase II - ($554,000)

Remodeling of the Science and Engineering Laboratories (SEL) is required to continue the development of doctoral and/or master programs for departments in the College of Engineering.

In FY 1976, $200,055 was appropriated for the first phase of remodeling SEL. In FY 1981 another $554,000 is required for this second phase of remodeling.

These equipment funds will provide for the necessary and appropriate movable equipment to outfit the remodeled space to establish the graduate educational program for Bio-engineering, Energy Engineering, Information Engineering, Materials Engineering, and Systems Engineering.

The following equipment is required:

Bio-engineering

1	Chalkboard (48" x 96)
3	Hardwood and Plastic Laminate
5	Storage Cabinets (78" x 36" x 18")
10	Student Chairs with Writing Arms
1	Biocontrol Laboratory Set-up: Specialized Electronic and Mechanical Equipment
3	Strip Chart Recorders (2 channels)
1	Video Terminal with Hard Copy Capability
6	DC Power Supplies, variable
2	Variable Filters
3	Pulse Generators
3	Low Level Amplifiers
1	Polaroid Copy Camera for Graphics
1	High Frequency Oscilloscope
1	Set of Line Drivers (6 channels) and Receivers
1	Centrifuge (refrigerated)
1	Polarized Microscope with Camera
1	Spectrophotometer
1	Scintillation Counter
1	Electrophoresis Cell Setup
1	Tonometer
1	Oxihemoglobin Analyser
1	Digital Disc
1	X-Y Plotter
1	Cytological Flow Chamber
1	X-ray Illuminator
1	Camera and Lenses
1	IBM 370/PdP-8 Interface

Energy Engineering

1	Data Acquisition System
1	Laser Anenometer System
1	Gas Chomatograph
1	Precision Vertical Mill
1	Pyroheliograph

Information Engineering

12	Laboratory Benches
10	Storage Cabinets
18	Stools
19	Lamps
9	Tables
4	File Cabinets
2	Desks
3	Chairs
1	Reduction Camera

Information Engineering (Continued)

1 Transilluminator
1 Expitaxial Reactor
1 E-beam Gun Crucible and Power Supply
1 Thickness Monitor
1 6-Barrel Diffusion Furnace
1 Programmable Temperature Controller
1 Photo Plotter
1 Mask Aligner
1 Profilometer
1 Bonder
1 Microscope/attachments
1 Scriber
1 Sectioning Machine
1 4-Point Probe
1 Oven
2 Instrument Storage Cabinets
4 Small Parts Cabinets

Materials Engineering

1 Perkin Elmer Model DSC-2
Differential Scanning Calorimeter
1 Schwabenthan Polytest 22 Laboratory Extruder
1 Balscan Scanning Electron Microscope, Cat. No. 42-74-01-04

Systems Engineering

4 Tektronics Terminal with Scope Display Complete with Hardware to Produce Graphic Display (Scan Converter) and Accessories
4 Copier to Reproduce Terminal Displays
16 T.V. Monitors to enable all students in class to view activity at terminals, demonstrations during lecture, and closed circuit programs of movies from T.V. studio, or live demonstrations from other parts of the campus such as the Computer itself.
4 T.V. Camera for Lecture Demostrations

RRB Remodeling - Phase III - Duplicating Service ($139,300)

New presses are required to maintain and improve the capacity of the Duplicating Service to meet the needs of the campus. Funds for this equipment were lapsed in FY 1978 as the remodeling for the area was not approved. Purchase and installation of the equipment will be feasible and cost-effective with the relocation of the Duplicating Service from Burnham Hall to the Roosevelt Road Building.

The following equipment will be required:

1 Nu Arc 20 x 24 Process Camera, self contained including Nu Arc PS36 Plate Sink
1 Mehle 20 x 28 Sheet Fed Offset Press
1 ATF Chief 15 with Chain Delivery, Offset Press
1 Baum Folder, Model 23, Mark I
1 Halm Jet Envelope Press JT1A
1 Line Up Table, Nu Arc Model RR31S
1 Numbering Equipment, V50 Mehle Vertical (used)

Remodeling and Rehabilitation

Handicapped Accessibility - ($480,000)

Section 504 of the Rehabilitation Act of 1973 provides that "no otherwise qualified handicapped individual shall, solely by reason of his handicap be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal assistance." Each program and activity, viewed in its entirety must be readily accessible and offered in the most intergrated setting appropriate. Handicaps as defined in the legislation, include: mobility and sensory impairments, major physiological illness, emotional and psychological illnesses, learning disabilities, mental retardation and chemical dependency. For institutions of higher education this means that complete physical and programmatic accessibility must be available to all students, staff and faculty.

During the Summer of 1978, in order to identify physical obstacles, the Physical Plant Department surveyed the campus and collected data concerning the physical accessibility of rooms, lavatories and drinking fountain facilities in each building and the availability and usability of elevators in each building. An analysis of these data revealed that the primary obstacles facing handicapped students involved getting on to the campus, approaching buildings, and using exterior doors.

A multiphase program has been developed to improve accessibility by making rooms accessible and providing accessible toilet, lavatory, drinking fountain, and telephone facilities within each building of the campus.

Phase 1 is planned to improve the accessibility of approaches and exterior doorways of campus buildings. It will provide for:

1. Construction of elevated or pitched walkways that will eliminate exterior stairs and give unobstructed entry into the following buildings:

Building	NASF	GASF
A. Plant Research Laboratory	3,790	5,611
B. Utilities Building	3,035	33,343
	6,825	38,954

2. Installation of electronic devices in the following twenty-one buildings so that at least one exterior door in each building can be opened by a handicapped person without assistance.

Building	NASF	GASF	Primary Use
Education and Communications Building	80,875	131,864	Lab, Office
Library	184,420	264,242	Study

Building	NASF	GASF	Primary Use
Science and Engineering Laboratories	279,093	453,647	Lab, Class Lab
Behavioral Sciences Building	136,066	231,900	Office, Lab
Lecture Center	47,241	85,549	Classroom
University Hall	147,548	278,246	Offices
Science and Engineering Offices	73,540	152,452	Offices
Science and Engineering South	199,825	330,924	Class Lab and Non class Lab
Roosevelt Road Building	76,904	113,180	Office
Physical Education Building	153,528	221,621	Athletic/Phys. Ed. Facilities
Plant Research Laboratories	3,790	5,611	Special Lab
Burnham Hall	21,042	30,920	Classrooms
Addams Hall	8,120	16,635	Classrooms
Douglas Hall	14,185	22,969	Classrooms and Labs
Grant Hall	7,761	16,868	Classrooms and Special Class Labs
Lincoln Hall	13,786	22,995	Classrooms
Henry Hall	8,066	12,875	Offices
Jefferson Hall	7,830	16,729	Offices
Stevenson Hall	19,498	30,763	Classrooms
Taft Hall	14,214	23,026	Classrooms
Services Building	88,648	109,980	Shop, Storage
TOTAL	1,585,980	2,572,996	

Instructional Resource Access Center - ($100,000)

This project calls for the remodeling of rooms 104 and 106 in Grant Hall (1408 NASF) to accommodate the Instructional Resource Access Center, a physically accessible facility which will house equipment and services required for the Audio-Visual Instructional Program.

Presently, audio visual instructional facilities, including the Language Laboratory, PLATO, video tape playback facilities, and slidetape facilities are scattered throughout the campus and in many cases are inaccessible, or accessible with great difficulty, to handicapped students, faculty, and staff.

The program will provide an Instructional Resource Access Center which is accessible to, and serves the needs of, physically handicapped persons; and thus, may be considered part of our long range plan to comply fully with the spirit of the Rehabilitation Act of 1973.

The IRAC will offer instructional support for programs in foreign languages (i.e., Spanish, Chinese, Japanese, Polish, Russian, French and Italian), speech, psychology, physical education, music and pharmacy. A diversity of instructional media will be housed in a single area. The center will house all campus PLATO terminals, video playback terminals, audio playback terminals, and slide-tape facilities. A facility for individual testing of students will also be provided. The Center will provide the following advantages:

1. Improved access to playback facilities for the physically handicapped.
2. Fixtures constructed to accommodate handicapped students.
3. New carrels will be wired to accommodate different information delivery functions.
4. Consolidated instructional resource facilities will be more convenient for handicapped students.
5. All equipment will be available during class hours.
6. Personnel and security problems will be reduced.
7. Provisions will be made for visually and aurally handicapped.

Remodeling will include:

1. Widening of entrance doors to 104 and 106 Grant Hall.
2. Installation of study carrels and stools meeting the specifications for handicapped accessibility.
3. Wiring and ducting as necessary to furnish each carrel with two standard A.C. power outlets delivering 115 volts A.C. at 3 ampers maximum current.
4. Cables and ducts to be installed to provide service between carrels in rooms 104 and 106 Grant Hall, and equipment located in room 311 Grant Hall.
5. PLATO Terminals:
   A. Moving of PLATO terminals from the basement of Burnham Hall to room 106 Grant Hall.
   B. Moving of all telephone lines necessary to service these terminals from the basement of Burnham Hall to room 106 Grant Hall.
6. Equipment:
   A. Captioning equipment for one video terminal.
   B. Braille keysets.
   C. Booster amplifiers.
   D. Headsets with microphones for audio carrels.
   E. Cassett tape decks.
   F. Color video tape players.
   G. Color monitors to be connected to tape players.
   H. MEK 6800D2 microprocessor kits with power supply for use with audio carrels.
   I. Study carrels meeting with specifications for handicapped accessibility and adjustable stools.

SEL - Remodeling College of Engineering - Phase II - ($783,200)

The first phase of a multiphased remodeling of the College of Engineering Laboratories in the Science and Engineering Laboratories Building (SEL) funded in FY 1976 has been completed and occupied. The second phase of this project was requested in the FY 1977, FY 1978, FY 1979, and FY 1980 Capital Budgets. The scope of this year's request is a portion of the total program documented in FY 1976, and is a logical progression in the completion of this phased redevelopment of underutilized undergraduate laboratories to meet the needs of the growing graduate programs.

The amount of space to be remodeled in this phase has been carefully chosen to meet the pressing needs of graduate level teaching and research and to minimize the disruptive effect of remodeling activities taking place in the midst of on-going academic enterprise.

The specific areas designated for FY 1981 funding are listed below:

Department	Room	NASF
Bio Engineering	4264	2028
		(2028)
Energy Engineering	1295	2774
	3294	2684
		(5458)
Information Engineering	3257-1	318
	3257A-1	264
	3263-1	450
	2	450
	3	450
	3267	1248
		(3280)
Materials Engineering	1070	1799
	1100D	507
	E	163
	F	163
	G	152
		(2784)
Systems Engineering	4029A	1102
	B	520
	4209	1014
	4211	1902
		(4538)
TOTAL		18088

Summary by Room Use:

(210)	Class Lab	7222
(215)	Class Lab Service	1799
(250)	Non-Class Lab	8915
(255)	Non-Class Lab Service	152
TOTAL		18088

RRB - Campus Duplicating Service - ($447,500)

This FY 1981 project will complete the phased remodeling begun with FY 1975 funds. At that time, the building was determined to be a permanent campus structure and its restoration and modification to serve the University was programmed. Intervening fiscal periods have provided resources to accomplish that program except for those now requested.

This final phase will provide facilities for the Campus Duplicating Service Department. The space to be modified in the Roosevelt Road Building (RRB) is the basement and first floor of Building #2. The modifications will provide storage space in the basement (for curing stock) and production and processing space on the first floor.

The summary of space needs designated for FY 1981 are listed below:

DESCRIPTION	NASF
Platemaking	
Dark Room	460
Plate Room	250
Stripping Room	250
Production Area	
Press Room	2,650
Bindery	1,325
Office and Office Service	
Superintendent's Office	230
Assistant Superintendent's Office	175
Clerk's Office	150
Plate/Negative Area	250
Conference Room	200
Employee Rest Area	120
Storage Areas	
Paper	3,480
Materials	460
TOTAL	10,000

SUMMARY BY ROOM USE	
Office	555
Office Service	120
Conference Room	200
Shop	4,935
Shop Service	4,190
TOTAL	10,000

Relocate OAR from Library - ($832,000)

This project will provide the necessary funding to move the Chicago Circle Office of Admission and Records out of the Library and into a more suitable location. The relocation of this campus unit will allow valuable Library space to be returned to its intended function. A portion of the first floor (approximately 16,000 GSF) of the Science and Engineering South Building will be remodeled to accommodate OAR.

The space to be remodeled in Science and Engineering South (SES) is presently assigned to Food Services. Completion of remodeling work in the Chicago Illini Union makes it possible to give up the Food Services space in SES. Use of this space will also meet the need of keeping the Admissions and Records office located in space that is relatively central to the major activities of the campus and readily accessible to present and prospective students.

As proposed, the remodeling in SES includes approximately 10,000 square feet of existing first floor space, and 1,500 square feet of existing second floor space. In addition, due to the fact that the Food Service space was open 2-story space, new second floor space of approximately 4,500 square feet will be created, for a total of approximately 16,000 square feet. The Office of Admissions and Records presently occupies 15,275 square feet of space in the Library. The combination of the need to move OAR from the Library, the need to keep it centrally located, and the availability of the SES space make this 16,000 square foot remodeling project significantly the best alternative for relocation.

Space Realignment, Renewal, and Replacement

Exterior Masonary Repairs - Phase III - ($210,500)

This project is for the following major masonary repairs:

1. Completion of repairs to east/south walls, terrace, and exterior theater walls of the Education and Communications (ECB); additional repairs at Physical Education (PEB) and Roosevelt Road (RRB). This is the third phase of masonary repairs. (The first phase concerns the north wall of ECB as an FY 1979 project. The second concerns any uncompleted work on the north, south, or east walls.)

2. This project will require grinding out of mortar joints on exterior brickwork, removal of weathered caulking, removal of bricks and stone where necessary, replacing flashing, modifying shelf angles, tuckpointing where indicated, and recaulking and reinstalling the exterior masonary temporarily removed during the project.

Electrical Upgrade of 12KV Underground System - ($38,900)

This project will rehabilitate and realign, at two locations, the underground concrete six-cell electrical ducts carrying the Chicago Circle campus primary 12KV electrical distribution system.

At two locations, the Lecture Center and Services Building, the ducts have broken away from the buildings and are settling, causing the high voltage cables serving the buildings to be "pinched". Further settlement of these ducts could sever these cables, causing a complete electrical outage in these buildings and other buildings interconnected to the same primary cabling system. No alternate means of primary electrical supply is available to these buildings should the cables be cut, since both the primary and emergency high voltage cables running to each building are located in the same duct. New cables require approximately six months for delivery.

General Building Rehabilitation - ($182,200)

This project will provide replacement of the existing carpeting in the high traffic areas of several campus buildings. These high traffic areas are primarily practice and lecture rooms located in the following buildings: The Architecture and Art, Behavioral Sciences, Education and Communications, and the Science and Engineering South buildings. The practice rooms, lecture rooms, and theater need this carpeting to provide an accoustical damper. In all but the Architecture and Art building, the existing carpets have worn out because of the heavy use of these areas over the past ten (and in some cases fifteen) years. Some of the worn carpets have holes in them, creating safety hazards. Approximately four thousand square yards of carpeting will be used in the theater and in the lecture rooms.

In the Architecture and Art building, the carpeting was destroyed as a result of roof leaks. These roof leaks are being corrected as a part of a separate project funded in FY 1979 by the Capital Development Board.

The seating in the lecture rooms must be removed in order to remove and re-lay the carpeting. Those seats that must be replaced or repaired will be corrected before reinstallation. The existing upholstered plastic shell seats are an integral part of a system of seats and articulated tablet arms, mounted on a structural frame. The proposed replacement plastic shell seats will be more resistant to vandalism. In order to avoid a patchwork look, all of the seats will be replaced in the smaller rooms, and any good seats will be used to replace damaged ones in the larger rooms.

A carpeting schedule, giving the breakdown of the areas to be re-carpeted, appears below.

Carpeting Schedule

BUILDING	Room No.	Approx. Sq. Yds.	Approx. Sq. Yds. Building Total
Behavioral Sciences	140	160	
	145	300	
	250	590	1,050
Science and Engineering South	130	230	
	138	140	
	230	230	
	238	140	
	250	870	1,600
Education and Communications	L280	320	
	L280A0 A	90	
	L285	460	870
Architecture and Art	2422	90	
	3304	160	250
TOTAL			3,770

In addition to the large lecture and practice rooms and the theater, the classrooms in the classroom buildings constructed during Phase I and II also contains similar, fixed seating that requires repair and/or replacement. The buildings to be accommodated in this work are as follows:

Addams Hall
Douglas Hall
Jefferson Hall
Lincoln Hall
Burham Hall
Grant Hall

Lighting Modification - ($106,900)

This project will provide the Architecture and Art Building (A&A) and Lecture Center (LC) with improved interior lighting levels. Exterior stairway lights will be removed where overhead fluorescent fixtures have been installed.

Interior lighting modifications will include the installation fixtures, replacement of incandescent lights and converting from plastic diffuser lenses to acrylic prismatic lenses. These measures will provide higher and more acceptable light levels.

Stairway and Upper Walkway Repairs - Phase II - ($317,100)

The Circle Campus has an elevated or upper walkway system that extends in a north-south direction much like a spine running through the center of the campus. The north segment begins in a concrete ramp at the Rapid Transit terminal on the Eisenhower Expressway and continues southward to Harrison Street. At this point the elevated walkway becomes a system of granite slabs supported by concrete columns. The north segment continues southward terminating at the Lecture Center, which is the focal point or central core of the campus.

There are a number of bridge type links between the walkway and the second floors of the classroom buildings connected to it. A north branch of the system extends westward to accommodate the northwest buildings. The central section of the elevated walkway connects the Circle Center and the Library to the upper part of the Lecture Center and it also extends southward connecting classroom buildings and the Science and Engineering Laboratory Building. At this point the upper walkway once again becomes a reinforced concrete structure. It continues southward through the Science and Engineering Laboratory Building across Taylor Street and through the Science and Engineering South Building.

The upper walkway was designed to provide a two level system of handling peak student pedestrian traffic loads (almost twenty thousand persons in a four block area). The table below shows the lineal footages of walkway on the campus.

Upper Walkway Schedule

	Walkway System (In Lineal Feet)		
Walkway Segment	Concrete	Granite	Steel with Concrete Topping
A	835		
B		230	
C	220		
D		950	
E	30		200
F	30		

G	45		
H	4,800*		
I	4,000*		
J	60		
K		500	
L	450		
M	430		
TOTAL	2,100	1,680	200

*Figure in square feet not included in lineal footage total.

Movement of the walkway structures over a 13 year period has resulted in broken concrete stairways, and numerous separations of the granite slabs. Some initial repairs to several of the more than a dozen different concrete stairways leading to the upper walkway have been completed. The remaining stairway repairs as well as several ramp repairs have been combined with the first phase of correcting conditions to meet OSHA standards.

The project includes planning Code Corrections plus handrail height modification on the second level of the walkway system to meet OSHA standards. Future phases will replace the bollards and chains on the upper walkway and make other changes deemed necessary by the consultant. In addition, recaulking, replacing stops and flashing in the walkway, resetting some existing granite pieces, replacing some damaged stairs, and other work necessary to restore this facility to an acceptable state of repair will be accomplished as part of this program.

This project will be coordinated with the Lecture Center roof repair project that has been funded through the Capital Development Board for FY 1979, so that the rehabilitation work on the walkway above the Lecture Center will not be duplicated nor interfered with.

Communications and Theater - Theater Air Conditioning and Upgrading - ($90,000)

This project will provide for the installation of a complete heating, ventilating and air conditioning system in Room 2180. This room is where the new theater lighting dimmers (funded for FY 1980) will be located.

The existing location for the lighting dimmers is at the ceiling level of the three story theater, Room L-280. The dimmers are at approximately the same level and physically mounted in the upper catwalk adjacent to the lights they control. Continuous use of the lighting increases the temperature to a level that the dimmers cannot tolerate, causing most of the dimmers to break down. Consequently, the replacement dimmers will be moved to Room 2180, a separate room adjacent to, but separate from, the Theater during the first phase of the Communications and Theater Project. This will be the first step

in counteracting the overheating and subsequent dimmer failure caused by the close proximity to the theater lighting.

This project, representing the second phase, will provide an HVAC system (ductwork, fan, insulation and thermostatic controls) that will maintain the required temperature level for the lighting dimmers in Room 2180, thereby preventing any future breakdowns of the replacement dimmers.

Also included in this project will be the move of the Theater Box Office from its present location, Room L282 in the basement, to the proposed first floor location in the theater lobby, Room L280A. The present location of the Theater Box Office is in the basement. This location is remote from the public entrance to the Theater, forcing patrons to go down a flight of stairs and through a door at the basement level to get tickets. The basement area should not be made accessible to the general public, because it compromises the security of the entire building. Therefore, this project proposes to construct a new Box Office in the main Theater Lobby L280A where the general public enters the theater. This main Theater Lobby L280A is directly accessible from Harrison Street and is a natural location for the Box Office.

The following items will also be installed in the main lobby, Room L280A, as a part of this project:

1. A new display case to match the existing one located on the west wall of the lobby.
2. New graphics identifying the University Theater as well as the new Box Office.
3. New fixed public seating to accommodate those waiting to enter the Theater. This seating will be vandalproof molded fiberglass.

Biological Sciences - Group II A - ($236,600)

The Biological Sciences Department has four remodeling projects in the Science and Engineering Laboratories (SEL) in Group II A. One project modifies a portion of an existing herbarium into two research laboratories for graduate students. The work involves construction of a new concrete block wall in the north one-third of room 4068 SEL. A new double door is to be installed leading from this new room to the corridor. A new door at the center of the existing wall between the new room and 4067 is also to be installed. The second project converts a seminar room (Room 4281) into a graduate student and faculty research facility. New laboratory furniture and utilities will be required.

The third project involves modifying 160 carrels in four undergraduate teaching laboratories (3084, 3036, 3092, and 3100) for Introductory Biology classes and the conversion of a large preparation room into 4 individual prep rooms for the introductory teaching laboratories. The 160 carrels are to be removed or modified to be more efficient as a teaching tool. Room 3092 SEL is to have two concrete block walls constructed to divide the room into 4 individual prep rooms for the individual introductory teaching laboratories.

The fourth project will remove an existing x-ray room facility which is not used by the department and create a more efficient graduate student and faculty research facility in this area. The work includes the removal of existing partial height concrete block walls enclosing area 1017 SEL.

Business Administration - Case Study Classrooms - ($94,300)

This project will create 3 rooms of 500-600 square feet each for use in the case study method of teaching business courses in management. Rooms will require construction of two tiers of fixed tables arranged in a semi-circular or U-shape.

The case method involves the assignment of a particular case to the class. During class meetings, various students present their analysis of the case for class comment and discussion. Often this type of class places as much emphasis on student--student confrontation as it does on student--instructor confrontation; in fact, the instructor generally serves only to direct discussion. The College of Business Administration undergraduate and graduate students should benefit from the improved instructional program being offered in these facilities.

Mechanical Equipment Upgrade - ($209,100)

The project consists of the rehabilitation and upgrading of various mechanical items. Included are the following:

1. The venting of approximately 90 pressure vessels to outside atmosphere in 20 University buildings.
2. The rehabilitation of air handling unit housings in the Lecture Center. Because of lack of maintenance, many housing and drip pans are completely rusted through. Included also is the reinsulation of the fan housings and ductwork in the Lecture Center Building.
3. The construction of OSHA approved ladders and catwalks in various mechanical rooms in the Science and Engineering Laboratories and Science and Engineering South buildings.
4. The replacement of domestic water flow control valves at various campus locations. These valves have become so clogged that water flow in many laboratory sinks has been reduced to a dribble.

Roof, Gutter and Drain Repair - Phase III - ($243,000)

This project will provide for the repair and/or replacement of leaking roofs over sections B and E of the Lecture Center (LC) and for completion of the work begun in phases I and II.

Due to movement of the Lecture Center structure, the flashing and counter-flashing for the roof has been ruptured, causing leakage of water into the interior areas. Replacement and/or repair of the roofs is required to prevent additional damage to the buildings.

The work will require the exposure of structure and slabs above LC Buildings B and E. Sections of the upper granite slabs, as well as the lower concrete roof and the planter in-fill, will be removed, exposing the waterproof membranes. These membranes together with the drains, vents, gutters, etc. will all be inspected, repaired and/or replaced.

Remodel Basement of Stevenson Hall - ($121,000)

This project calls for the remodeling of the basement of Stevenson Hall and the conversion of this space from locker room to office space.

Of the 8,001 lockers on campus, 1,654 (20.7%) are located in the basement of Stevenson and an additional 548 lockers are located elsewhere in the building. The utilization rate of lockers on campus is less than 50%. Therefore, there will still be adequate locker accommodations after the removal of the Stevenson basement lockers.

The basement will be remodeled into four large office areas. These spaces will be used to house grant and contract projects funded for relatively short durations (one to three years). The internal office layouts will use a "landscape" philosphy. The long range advantage will be the reduction in the number of disruptive and costly moves which must be made to house new projects, the reduction of remodeling costs to accommodate the special needs of new projects, and the addition of some much needed office space to the inventory.

The project is consitent with the campus plan to increase income and asset generation from non-State funds through the expansion of organized research activity.

Biological Sciences - Group IB - ($81,500)

The Biological Sciences Department has three projects for remodeling in the Science and Engineering South Building (SES) in Group IB. The first project creates two distinct laboratories within the existing space in Room 1431. The room is to be subdivided in an east-west direction with two concrete block walls. A new double door entrance is to be provided for the new laboratory facility.

The second project converts a storeroom into a research laboratory facility. The existing concrete block wall between Rooms 3226 and 3228 is to be removed and the door to Room 3228 is to be sealed for security. A concrete block wall is to be installed between Rooms 3228 and 3386.

The third project converts two office facilities, Rooms 3182 and 3186, into new wet laboratory facilities. The existing concrete block wall between Room 3182 and 3186 is to be removed. New laboratory furniture (base and wall cabinents) is to be installed along inner perimeter of the newly enlarged room.

Biological Sciences Group IIB - ($66,000)

The Biological Sciences Department has three remodeling projects in the Science and Engineering South Building (SES) in priority Group IIB. The first project will convert part of a storeroom (Room 3118) for the installation of an incubator for cultivating houseflies and will also permit the installation of a small media preparation facility. This isolated facility will serve faculty and graduate students who do not have proper facilities for this kind of research.

This work involves the removal of a portion of an existing wire mesh partition and the construction of a concrete block wall to accommodate the incubator. A door is to be installed for entry from the corridor to the incubator. The remainder of the room is to be used for media preparation.

The second project converts an existing storeroom (Room 1421) into a graduate student and faculty research facility. New laboratory furniture (base cabinets and wall cabinets) and all supporting utilities will also be requested.

The third project creates a darkroom and a room to house delicate microtomes, which must be maintained in a carefully controlled environment. The work provides for a light safe approach to the darkroom from several areas, accomplished with special revolving darkroom doors. Also involved is the installation of wet darkroom areas for developing and a dry area for printing. An isolated room for use of delicate instruments will materialize as a result of traffic pattern established with the darkroom facility

Install Hand Dryers - ($169,800)

With the exception of some pilot areas already equipped with electric hand dryers, the campus washrooms are presently equipped with cloth towel (rolls) dispensers.

In order to eliminate the need to utilize manpower to inventory the rolls and to service all the dispensers (as usage varies by washroom), as well as to eliminate an increasing cost for a "disposable" type item, it is proposed that electric hand dryers be installed.

In each of the public Men's and Women's washrooms in the attached schedule of buildings, the following would be done:

1. Remove existing towel dispenser(s), especially where wall space is limited.
2. Patch existing tile walls and patch and paint existing plaster walls as required.
3. Furnish and install electric hand dryer(s), including extending the electrical power to dryer location(s).

Building	Number Dryers Per Building[1]
Jefferson Hall	4
Lecture Center	8
Science and Engineering Lab	56
Library	16
Utilities Building	8
Services Building	11
Behavioral Sciences	24
Science and Engineering South	37
Roosevelt Road Building	13
Education and Communications	19
Attendant House	1
Patrick Henry Hall	4
Architecture and Art Building	12
Science and Engineering Offices Building	13
Physical Education Building	28
Plant Research	1
TOTAL	255

[1]The number of dryers per washroom is based on an evaluation of the traffic, number of face bowls, and present towel roll turnover. The total number per building is the sum of its individual washroom needs.

Interior Graphics - ($60,000)

The buildings constructed in the Phase III development of this campus were designed by Skidmore, Owings & Merrill, using a rotated square concept. This design presented a very interesting but somewhat complicated system of corridors and public access to the various building elements. At the time the buildings were designed, the architect recommended that a Graphics Consultant be hired to study the problem of informing people as to where they were and how to get where they wanted to go. Based upon the study, the consultant was to develop a system of interior directional graphics. The Illinois Building Authority (the State bonding agency responsible for funding the building) refused to fund this consultant, and the buildings were constructed with little interior signage. In order to reduce confusion, temporary signs were made and installed throughout the buildings. These temporary signs have, in some cases, been defaced or removed and, in other cases, are not appropriate.

The only interior graphics in any of the later buildings (Phase III and beyond) are Room Number signs and Bulletin Boards in the elevator lobbies. There is no directional signage or any information to direct visitors to the various elements of these buildings. The buildings to be considered are: Science and Engineering South Building, Behavioral Sciences Building, and Physical Education Building.

The Science and Engineering South and the Behavioral Sciences Building are both designed in the rotated square concept. As previously stated, this type of design creates corridors that wind throughout the building. These many directional corridors are confusing to people not familiar with the buildings, and directional graphics are absolutely necessary. The Physical Education Building is not designated in the rotated square concept; however, the building has many vast arena type spaces together with many small areas, all linked by a vast network of corridors. These various elements, combined with a great flow of visitor traffic to the building complex, create a need for directional graphics.

In addition to the directional graphics, International Symbols will be added denoting handicapped facility availability to all of the toilet rooms that have been modified to accommodate the handicapped. It is recommended that a consultant be hired to study these problems and provide a system of signage that will blend in with the existing campus graphics and will also provide the directional information that is needed. This project will be coordinated with a separately funded program for providing Exterior Directional Graphics.

Campus Security System - Series 1 - ($97,900)

This project would complete the computerized controlled access system to all buildings, compatible with the Medical Center campus security system, by installing additional trunk and building cables, identification badge readers and electric door strikes on specific exterior doors. The identification cards, which have been issued to all staff, faculty, and student already have readable magnetic stripes which could be used to activate the electric strike.

Currently, the University Police are verifying ID's in response to a request for after-hour access. This requires a trip to the building by a policeman. The proposed system, which has proven to be highly successful at the Medical Center campus, would eliminate this need for a policeman to go to the building and would also automatically record the name and time of each entry.

Approximately thirty-five entrances are included in this project.

The Series 1 computer is replacing the System 7, necessitating the title change.

Site Improvements

Pedestrian Safety - Phase II - ($100,000)

This project continues the work planned for Phase I. In Phase I (funded in FY 1979) traffic flow will be interrupted on Morgan Street with the installation of a curb across the Morgan Street right of way as an extension of the south Harrison Street curb. Street drainage at this point will be altered as a result of this curbing, and the intersection of Harrison and Morgan will become a "T" type of interchange. Approximately 300 feet south of the Harrison Street curbing, additional curbing will be constructed, creating a gentle curve that will cause traffic to flow from Vernon Park Place (eastbound and westbound) into Morgan Street (northbound and southbound). This first plase essentially isolates the area.

The Phase II project concerns work that will provide a pedestrian mall in the area between Harrison Street and Vernon Park Place in the vacated Morgan Street right of way. This mall will contain one limited access service drive for University Hall and one for the Behavioral Sciences Building. In addition, a network of pedestrian walks will also be constructed. Planter areas will be provided throughout the mall. These areas, together with the rest of the mall, will be provided with an underground drainage system. Proper sub-soil and top soil will be provided to fill these areas to grade. All necessary dismantling work, such as paving, curbing, sub surface drainage, etc., will be included in the project.

There is approximately 20,000 square feet of abandoned right of way that is to be re-developed in this mall project. In addition to the right of way area, there is approximately 5,000 square feet of building access to the Behavioral Sciences Building and 10,000 square feet of building access to University Hall to be considered in the mall project.

Bus Stop Shelters - ($45,400)

The Chicago Circle campus was designed as a "Commuter Campus". While many students travel by private automobile, the majority of students use public transportation. Most of the students using public transportation arrive and depart via CTA buses. Even students who commute from the suburbs to the downtown area via the various commuter trains, travel from the downtown area to the campus by the CTA buses (especially in inclement weather).

One of the most prevalent complaints regarding public transportation is a lack of shelter from the elements at the loading points. The CTA has installed a bus stop shelter at the southeast corner of Halsted Street and Polk Street. Since the Transit Authority must provide a network of shelters throughout the metropolitan area, they do not wish to add any more shelters to accommodate this campus. A campus committee recommended several years ago that shelters be placed in the following locations:

1. Northwest corner of Halsted Street and Taylor Street
2. Southwest corner of Morgan Street and Harrison Street
3. Southwest corner of Halsted Street and Harrison Street

There is no need for shelters underneath the elevated walkway where it intersects Harrison Street and Taylor Street, since the walkway itself provides moderate shelter from rain and snow.

Because of the incidents of both vandalism and rape in the metropolitan area, the bus stop shelters must be both strong and transparent. Because campus maintenance is an important consideration, the bus stop shelters must literally take care of themselves. These considerations have forced a difficult design problem that cannot be accommodated by pre-fabricated stock enclosures. The latest recommendations call for a panel material called "Lexan". This material, in the ¼" thickness, is bullet proof and transparent. However, it is easily cut, and it deflects considerably upon impact. The deflection problem can be solved by placing the lexan in special stops that will contain the material even when deflected. The poor resistance to scratching is something that will have to be tolerated, or some other material will have to be substituted. The shelters must be mounted on a maintenance-free base, and they must be mounted in such a way that air and debris, such as paper, will not be trapped in the shelters; however, they still must provide comfort from cold winter winds. All of these requirements necessitate custom enclosures that have a relatively high initial cost with little, if any, subsequent maintenance costs.

Planning

Library Renovation - ($250,000)

This project will involve developing architectural and engineering design specifications for renovating the Library. The program for remodeling the Library can, for the purpose of explanation, be separated into three parts:

1. Found space, the recovery of space by a) filling in the remaining wells on the fourth floor; b) enclosing the balconies on the second, third, and fourth floors; c) designing library space in the north and south ends of the basement in space originally designed for mechanical equipment; d) remodeling space presently occupied by the Office of Admissions and Records but designed originally as Library space.
2. First floor remodeling.
3. Second floor remodeling.

With the completion of this remodeling program, the campus will have recovered all available space in the UICC library building.

FOUND SPACE

Space found by enclosing the balconies on the second, third, and fourth floors will represent a gain of approximately 3,300 square feet per floor, or a total gain of 10,000 square feet. The space found by filling in the wells on the fourth floor will represent a gain of 2,400 square feet. Space on this floor will be used for patron seating and decreasing the stack deficiency by freeing an equivalent amount of space elsewhere in the building for additional bookstacks.

The areas to be remodeled in the basement will be used for the storage of manuscript and archival materials now stored in various locations inside and outside the library. If space permits, the Staff Lounge will be relocated on the first floor and the basement space previously used as a lounge will be converted to materials storage. Compact shelving installations will be planned for these areas. Existing shelves will be used for expansion on other floors of the building.

Approximately 13,000 square feet will be recovered from OAR space on the first floor. The use of the space is described in the first floor remodeling.

The total found space is approximately 18,850 NASF. The total of found and recovered space is about 31,850 NASF.

FIRST FLOOR - REMODELING

The first floor will become the location for the most heavily used and basic public services--reserve books, current journals and newspapers, the circulation desk, and seats for studying one's own material between classes as well as for using library books and other media. Commuting students and faculty will be able to rapidly locate and use these vital services. These areas also will be designed to remain open while the rest of the building is closed. In other peripheral, but strategically located spaces, the appropriate technical service units will be grouped around the loading dock. The administrative offices and the personnel office will be located at the Morgan Street door.

SECOND FLOOR - REMODELING

The second floor of the Library is as important as the heavily used first floor. The second floor entrance will be closed and the front stairs leading to the first floor removed. Round tables and informal seating will be provided so as to create an attractive area for users.

The original reference counter will be removed, thereby allowing the reorganization of the reference and bibliographic collections on second floor north with accessibility for the reference librarians on duty at the information desks, the bibliographers in the Collections Development offices, and the staff members of the Cataloging Department. Offices for the reference librarians will also be provided in three locations surrounding the card catalog, the reference and bibliographic collections, and the information desks.

MEDICAL CENTER CAMPUS

Preparation of this capital budget request is based upon a review of projected capital needs through 1984-85 for each of the Medical Center's regional components; Chicago, Peoria, Rockford and Urbana-Champaign. Needs projected for the 5-year budget period total about $150 million. Many of these needs represent long-deferred capital requirements in Chicago. Many of these needs also represent maturing of programs in the Peoria, Rockford and Urbana-Champaign regions.

Through discussions in the Campus Planning Committee it has been agreed that the Medical Center Campus will defer all new building proposals financed by State funds in favor of meeting the need to upgrade the older buildings on the Chicago campus. It has become apparent that the lack of remodeling funds over many years has contributed to deteriorated, out-dated and worn-out facilities. It has become apparent also that the quantity and quality of facility resources is contributing directly to a problem of attracting and retaining the desired quality of personnel and programs.

This budget request is directed toward the initiation of a multi-year, major building rehabilitation program. The size and complexity of the program requires an organized approach to upgrading of building components, building systems, code requirements, energy conservation measures, and space remodeling. Accordingly, this budget contains a series of request presented in categories and coordinated by buildings. Successful implementation of this program will provide for an improved environment and an organized upgrading of facilities which will allow for timely assignments of space to individuals and programs.

TABLE 1
MEDICAL CENTER CAMPUS
LIST OF FY 1981 PROJECTS BY CATEGORY

Projects	Estimated Cost
1. Buildings, Additions, and/or Structures	$ -0-
2. Land	-0-
3. Equipment	
Equipment SUDMP - Project II	225,000
Subtotal	($ 225,000)
3a. Equipment Related to Space Realignment	
Renewal and Replacement	-0-
4. Utilities	-0-
5. Remodeling and Rehabilitation	
Major Building Rehabilitation - Segment 1	4,397,400
Major Building Rehabilitation - Segment 2	3,831,000
Major Building Rehabilitation - Segment 3	3,337,000
Subtotal	($11,565,400)
5a. Space Realignment, Renewal and Replacement	
Generated Amount	2,969,349
Additional Projects	257,851*
Subtotal	($ 3,227,200)
6. Site Improvements	-0-
7. Planning	-0-
Total FY 1981 Capital Budget Request - Medical Center	($15,017,600)

*Some projects moved to energy conservation package

TABLE 2
COST PER SQUARE FOOT OF NEW BUILDING AND MAJOR REMODELING PROJECTS
Medical Center Campus

Category/Project	Project Cost*	Gross Square Feet	Assignable Square Feet	Efficiency ASF/GSF	$/GSF	$/ASF
New Buildings						
Major Remodeling (All Phases)						
Pharmacy Building	4,564,000	270,738	167,523	.62	16.86	27.24
Hospital Addition	8,127,000	240,000	128,676	.54	33.86	63.16
General Hospital	4,620,000	193,428	100,354	.52	23.88	46.04
1919 W. Taylor Street Unit	3,215,000	183,148	109,190	.60	17.55	29.44
First Unit DMP Building	11,738,000	179,600	95,879	.53	65.36	122.43
Research and Library Unit	4,108,000	49,600	26,657	.54	82.82	154.11
AOB Annex	2,171,000	44,600	30,074	.67	48.68	72.19

*Estimated cost of remodeling for the period FY 1981 - FY 1985.

Equipment

Moveable Equipment for Project II, SUDMP Remodeling - ($225,000)

DESCRIPTION

This project includes both scientific, communications, and office equipment. One group of items for the Center for Educational Development will be located on the tenth floor of Building 910. It will be comprised of desks (7), Chairs (45), files (15), tables (12), typewriters (2), and communications studio equipment: television monitor (1), television camera (1), recorder (1), microphone (2), amplifier (1), and speakers (2).

Another group of items for the School of Basic Medical Sciences will be located on the eleventh and fourteenth floors, and includes both office furniture and scientific equipment: desks (12), chairs (24), files (20), stools (24), refrigerators (15), freezers (3), and other items of scientific equipment such as water baths, incubators, laminar flow hoods, auto-claves, and centrifuges.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

State capital funding has been provided (in 1979) to remodel approximately 11,000 net square feet of space on floors 10 to 14 of Building 910. Approximately 2,500 NSF of this space is assigned to the Center for Educational Development, which has its main offices on the nineth floor of Building 910. The tenth floor space will be utilized as 1) a television studio classroom, and 2) a secure area in which examinations will be developed, processed, and stored. Several offices will be utilized by personnel working on the same floor.

Services related to development of examinations, and to instruction in television programming will be provided to campus clientele.

Floors 11 through 14, approximately 8,500 NSF, will be developed into a research center by the School of Basic Medical Sciences. The design for the space as it is being developed places an administrative suite including conference rooms on the fourteenth floor, with each of the three lower floors to contain research laboratories, faculty offices and support services such as tissue culture, instruments, and cold rooms.

The facility will provide a focus for interdisciplinary research, particularly in the field of genetics; faculty and academic staff assigned to and working in the Center will most probably hold joint appointments in a basic science and a clinical discipline. Equipment to be purchased for this area with funds requested for this project will be supplemented by other equipment now in possession of the researchers, or that which will be purchased from research grant funds.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Project II, Second Unit, D.M.P. Remodeling actually is the fourth State-funded remodeling project for this Building, which was the former College of Dentistry Building. The Building became available to the College of Medicine in stages as Phase I and II of the New Dentistry Building were completed (about 1975).

Phase I Remodeling included renewal of mechanical systems, construction of a mechanical tower, and remodeling of floors 6, 7, and 9.

Phase II, Project I included installation of a 400-ton air conditioner unit, continued mechanical systems work, and remodeling of floors 6 and 7.

Phase II, Project I A, included remodeling of about 3,500 NSF of space on floor 3.

Phase II, Project II includes floors 10 through 14, as indicated previously.

Subsequent phases of this work must include elevator remodeling, augmentation of the air conditioning system, and remodeling of about 30,000 NSF of space on floors 1, 2, 3, 4, and 5.

TABLE 3
MEDICAL CENTER MAJOR BUILDING REHABILITATION SEGMENTS

Project Component	Total Cost	Segment 1*	Segment 2*	Segment 3*
Pharmacy Building				
Air Conditioning & Ventilation	$ 2,267,400	$1,275,400	$ 917,000	$ 75,000
Remodel Room 346	362,000		362,000	
Subtotal - Pharmacy Building	($ 2,629,400)	($1,275,400)	($1,279,000)	($ 75,000)
Hospital Addition				
Vertical Distribution of Utility Space				
Laboratory Utility Risers	131,500	131,500		
Electrical Power Riser	198,200	198,200		
Emergency Electrical Risers	86,500	86,500		
Electrical Grounding Risers	53,000	53,000		
Equipment Automation Riser	22,000			22,000
Fire Alarm Riser & System Modification	101,000			101,000
Telephone and TV Riser	28,800	28,800		
Domestic Water and Waste Risers	198,200	198,200		
Valving for Service Piping	132,500	132,500		
Acid Waste Riser	33,400	33,400		
Fire Sprinkler System Riser	647,000			647,000
Construct Utility Shafts	92,200	92,200		
Building Services				
Install Chilled Water Loop	92,200	92,200		
Water Treatment	12,700	12,700		
Ventilation				
Revise and Install Ventilation System	576,200	576,200		
Install Fume Hood Exhaust System	110,000			110,000
Building Components				
Repair Foundation Wall & Tunnel	160,000	160,000		
Space Remodeling				
Remodel Outpatient Registration, Medical Records & Offices	220,000		220,000	
Remodel 2nd floor, Pathology	393,700	393,700		
Remodel 3rd floor, Radiology	75,900	75,900		
Remodel 4th floor, Surgery	391,100	281,100	110,000	
Remodel floors 5 through 14	1,430,000			1,430,000
Subtotal - Hospital Addition	($ 5,186,100)	($2,546,100)	($ 330,000)	($2,310,000)
General Hospital				
Install Chilled Water Riser	78,000		78,000	
Water Treatment	8,000		8,000	
Subtotal - General Hospital	($ 86,000)	($ 0)	($ 86,000)	($ 0)
1919 W. Taylor Street Unit				
Emergency Electricity Internal Distr.	220,000			220,000
Install Air Conditioning	483,300	483,300		
Subtotal - 1919 W. Taylor	($ 703,300)	($ 483,300)	($ 0)	($ 220,000)
First Unit DMP Building (FUDMP)				
Install Chiller and Mechanical Tower	2,136,000		2,136,000	
Chilled Water Riser	144,000			144,000
Water Treatment	8,000			8,000
Upgrade Electrical System	306,000			306,000
Subtotal - FUDMP	($ 2,594,000	($ 0)	($2,136,000)	($ 458,000)
Research & Library Unit (R/LUNIT)				
Extend Chilled Water Loop	84,600	84,600		
Water Treatment	8,000	8,000		
Subtotal	($ 92,600)	($ 92,600)	($ 0)	($ 0)
A.O.B. Annex				
Install Elevator & Ramp	274,000			274,000
Subtotal	($ 274,000)	($ 0)	($ 0)	($ 274,000)
TOTAL - All Buildings**	$11,565,400	$4,397,400	$3,831,000	$3,337,000

*Segments represent priorities; buildings and projects within segments are not prioritized
**Only buildings for which some funding is requested in FY 1981

Remodeling and Rehabilitation

Major Building Rehabilitation Pharmacy Building - ($2,629,400)

DESCRIPTION

The University of Illinois College of Pharmacy, the only Pharmacy School in Illinois, is located at 833 South Wood Street, Chicago, in the center of the Medical Center District. The building in which the College is housed was built in several phases. The original facility was built in 1952 with three subsequent additions built in 1956, 1958, and 1968.

There are three major physical problems within the building: lack of air conditioning and adequate ventilation, configuration of rooms which have not kept pace with curriculum changes, and inadequate space for the College of Pharmacy.

The renovation relates to the urgent upgrading of building systems, particularly the air conditioning and ventilation systems. The space remodeling involves reconfiguration of several large laboratories and other vacated units as a means of improving utilization and providing much needed office/laboratory space. Other aspects of the renovation are items necessary to maintain the building in good physical repair at an energy-and cost-efficient level.

Air Conditioning and Ventilation--

The need for this project cannot be overstated. The problem dates back to the original construction of the building. The building design and appropriation request were based on the development of an enclosed "T" shaped building with the air conditioning capacity to be located in the back of the building. However, the appropriation was sufficient only to construct the front part of the building, creating a building with fixed windows, insufficient ventilation, and no air conditioning. These factors create an unhealthy, unsafe, and counterproductive environment for students and faculty. The three small additions were constructed with air conditioning, however, these areas encompass a very small part of the facility and include very few instructional areas.

The American Council on Pharmaceutical Education, in its 1974 accreditation report, cited the problem in its evaluation of the College's physical facilities. "Unfortunately, the building is inadequately ventilated and sealed without provision for air conditioning which leads to discomfort and inefficiency."

The combination of no air conditioning and inadequate ventilation manifests itself in several ways: the extreme heat (temperatures often reach 90^{0} and higher), in both the winter and summer; extreme fluctuation in temperature; the introduction of noxious and toxic fumes exhausted from several laboratories into other areas; and the introduction of large amounts of black soot into areas. The latter two problems in particular are hazardous to the health of the occupants.

Due to the aggregate problems, much time, money and patience have been exhausted in trying to correct or at least tolerate the situation.

This project relates to the original Pharmacy Building's ventilation system upgrade by incorporating proper air conditioning into this building. Replacement of many existing systems will be necessary, as well as, the development of mechanical equipment rooms on the roof of the first floor Pharmacy Addition. Existing systems vary in age from 20 to 30 years old, and vary in adequacy of properly ventilating the occupant.

Phase I--

New Work

1. Installation of HVAC system 4th and 5th Floor North Labs. (Equipment in Attic)
2. Installation of HVAC System 4th and 5th Floor Lab Core. (Equipment in Attic)
3. Installation of HVAC System 2nd and 3rd Floor North Labs.
4. Installation of HVAC System 2nd and 3rd Floor South Labs.
5. Installation of HVAC System 2nd and 3rd Floor Floor Core Area.
6. Equipment Rooms for above items 3-4-5- shall be constructed on roof of 1st floor.
7. Installation of new chilled water riser throughout building.

Upgrade Existing Equipment/HVAC Systems

1. Replace HVAC Unit upgrade System S-15, 4th and 5th floor South Lab perimeter system.
2. Replace HVAC Unit upgrade System S-15A, 4th and 5th Floor South Lab. Central system.
3. Replace HVAC Unit upgrade System S-21, 4th and 5th Floor North Lab. perimeter system.
4. Replace HVAC Unit upgrade System S-38, upper floors, general corridor system.
5. Replacement HVAC Unit/upgrade system serving S.W. section of 1st floor.
6. Replacement HVAC Unit/upgrade system serving N.W. section of 1st floor.
7. Replace miscellaneous heating and ventilating units - HVAC units serving isolated basement areas to suit program needs.
8. Upgrade existing 35 hood exhaust system controls.
9. Upgrade electrical system to provide service to new HVAC units and replacement units of larger size.
10. Replace ceilings in Lab Areas, corridors, offices, patch walls.

Phase II--

Second and Final Phase

1. Purchase and installation of a 1,000 ton refrigeration machine in the Central Refrigeration Plant Building.
2. New chilled water piping from new chiller to the existing system and extending chilled water mains to Pharmacy Building.
3. Upgrading of the electrical system to provide the new chiller, as well as, providing new service to additional loads in the Pharmacy Building.

Space Remodeling--

The space remodeling portion of the major building rehabilitation relates to the need to change the physical configuration of large instructional laboratories due to revisions in the curriculum, and those areas to be vacated by current occupants. The original design of the building provided for students taught in large groups in large laboratories, with emphasis upon training dispensing pharmacists. In recent years, however, emphasis has been placed on smaller teaching groups and training clinical pharmacists, rendering the old laboratories inefficient. The remodeling would reduce the size of each lab and free space for other uses. Spaces vacated by the relocation of Biocommunication Arts, the occupancy of the new hospital, and the planned relocation of the Business Office are to be redesigned for Pharmacy.

Room 346, consisting of 5,680 NASF, is outmoded instructional technology and consequently, inefficiently utilized. The remodeling would create a smaller laboratory, a laboratory demonstration area and several staff offices.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The air conditioning and ventilation component of this project is primarily a health, safety, and environmental improvement. Programmatically it contributes substantially to the productivity of personnel and programs which are now displaced, cancelled or otherwise inconvenienced by the existing environmental problems. Programs which are jeopardized by extreme temperature or infiltration of particulates can be conducted in safety.

Remodeling of the large teaching laboratory, Room 346, will provide badly needed office-laboratory space for graduate students and faculty, space which is not otherwise available. Teaching in pharmacology will be enhanced by the provision of lecture-demonstration facilities in this area.

Remodeling of vacated spaces will provide limited but contiguous capability for the departments of the College. Most critical will be accommodations for clinical pharmacy programs which are now only in their infancy.

Space needs analysis conducted by the Task Force on Space Vacated by the Replacement Hospital estimated additional space needs for the College of Pharmacy through 1984-1985 at 32,500 net assignable square feet. Provisions of this major building renovation will provide approximately 18,300 NASF toward meeting this need.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The Comprehensive Development Plan, currently under study by our planning consultant, anticipates maintaining the present pharmacy zone for pharmacy. It has not yet been determined if all needs can be met in existing space or if new construction will be required.

The Pharmacy Building is included in the overall Master Plan - Air Conditioning - Medical Center.

As described, the Pharmacy Building is included in Load Area B, which also includes the Replacement Hospital, Administrative Office Building, Library of the Health Sciences and the Old Illini Union.

The Load Area B ultimate plan includes the following:

1. Expand the REPLACEMENT HOSPITAL LOAD CENTER plant by the installation of additional 1,000 ton air conditioning machine.
2. Extend the primary chilled water loop in the REPLACEMENT HOSPITAL to include all buildings within the LOAD AREA.
3. Construct a primary chilled water riser system in the College of Pharmacy Building, (924) to accommodate the total air conditioning needs of that facility.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The additional chiller capacity (1,000 tons) included in this project is planned to be physically accommodated in the Central Refrigeration Plant facility located adjacent to the Steam Plant and developed as part of the Replacement Hospital project. This chiller will service Load Area B as outlined earlier.

Major Building Rehabilitation Hospital Addition - ($5,186,100)

DESCRIPTION

Of the five buildings involved in space vacated by the Replacement Hospital, the Hospital Addition represents the structure having the greatest amount of space available for reuse. It is most suitable for conversion to laboratory facilities and is capable of providing for the most critical needs of the College of Medicine. For these reasons its reuse has been evaluated more closely that the other structures and selected for priority rehabilitation consideration.

The building consists of 240,000 gross square feet and 128,676 net assignable square feet. It is 14 stories in height; is structurally sound; and is in reasonably good repair. It was constructed in the early 1950's and has subsequently become outmoded for modern patient care delivery. The building contains 6 floors of patient rooms; 1 floor of diagnostic radiology; 2 floors of surgery and support; 1 floor of food services, 1 floor of outpatient services and administration; and the basement accommodates emergency services and central services. The balance of the structure contains departmental offices and laboratories; most of which are related to clinical activities of the faculty and residents.

Upon occupancy of the new replacement hospital, approximately 95,000 net assignable square feet of space will be vacated for reuse. About 49,000 square feet of this space has been reassigned to the Hospital and the remaining 36,000 square feet to the College of Medicine for use by the clinical departments of the Abraham Lincoln School of Medicine. The Hospital will utilize its assigned space to accommodate administrative and service functions deleted from the replacement hospital when construction plans required reduction in the scope of the project. Clinical laboratories, medical records and patient accounts are examples of functions affected. The Hospital will also utilize its assigned space to provide temporary relief to outpatient services pending construction of new ambulatory care facilities. The College of Medicine will utilize its assigned space to provide badly needed faculty offices and laboratories.

Funding requested in FY 1981 is intended to initiate the rehabilitation of this building by installing the vertical distribution of utility services; installing essential building services and ventilation needs; tending to the building's structural frame and enclosure components requiring immediate attention; and beginning of the space remodeling program. Specifically this request provides for:

Laboratory Utility Risers
Electrical Power Risers
Emergency Electrical Risers
Electrical Grounding Risers
Equipment Automation Riser
Fire Alarm Riser and System Modification
Telephone and TV Risers
Domestic Water and Waste Risers
Valving for Service Piping
Acid Waste Riser
Fire Sprinkler System Riser
Construct Utility Shafts
Install Chilled Water Loop
Water Treatment
Revise and Install Ventilation System
Install Fume Hood Exhaust System
Repair Foundation Wall and Tunnel
Remodel Outpatient Registration, Medical Records and Offices
Remodel Second Floor, Pathology
Remodel Third Floor, Radiology
Remodel Fourth Floor, Surgery
Remodel Floors 5 - 14

The selection of work identified in this request is critical to a successful and meaningful remodeling program. Failure to provide basic building services and vertical distribution of utility services will result in costly, wasteful and dangerous interim arrangements. The Building Use and Condition Study conducted by the consulting firm of Richardson, Severns, Greene, Rishling, and Associates, has been utilized in the development of this rehabilitation plan. Space assignments were recommended by the Task Force on Space Vacated by the Replacement Hospital and approved by the Campus Planning Committee.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The portion of the building remodeling accommodating Hospital functions are critical to the continuing operation of inpatient services and essential to making interim improvements in ambulatory care programs.

Remodeling for the College of Medicine marks the beginning of an extended program required to provide the long-deferred facility resources of the clinical departments of the Abraham Lincoln School of Medicine. Faculty, residents and medical students, long deprived of office, laboratory and meeting space, will at last be able to plan programs of research and instruction previously unattainable because of a lack of physical space. Faculty recruitment can proceed with the prospect of attracting quality personnel who require physical space to conduct quality programs. Post-graduate training in all clinical disciplines can anticipate new initiatives in regional coordination.

As a by-product of space provisions for the clinical departments, space which these departments are now utilizing in the DMP Building will subsequently be returned to the basic science departments for their needs. Such expansion is critical to the successful implementation of the Urban Health Program and other curricular initiatives anticipated by the basic science faculty.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

For the past 15 years plans for construction of new buildings for Pharmacy, Nursing, Dentistry, Library, Administration, and the new hospital anticipated remodeling of vacated areas for College of Medicine needs. This remodeling plan is in lieu of new construction for the College and represents its facility planning for the foreseeable future.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Remodeling of the Hospital Addition is the first phase of an intricate rehabilitation plan for the older buildings on the main block of the campus. Because these buildings are interconnected physically; linked by common utility services; and housing the same or closely related departments or programs, a coordinated sequence of improvements must be planned. Because ambulatory care and hospital support functions will continue to be housed in this and adjacent structures, pending construction of a new ambulatory care facility in 5 - 10 years subsequent remodeling must anticipate this later series of space vacations and remodeling.

The budget categories of Energy Conservation and Space Realignment, Renewal and Replacement contain 4 projects in this building which will be coordinated with the building rehabilitation.

Major Building Rehabilitation General Hospital - ($86,000)

DESCRIPTION

The General Hospital Building, like the Hospital Addition, is scheduled for major rehabilitation. Although the Fiscal Year 1981 request emphasizes work in the Hospital Addition, funds are also requested for chilled water

risers in the General Hospital Building as a means of providing chilled water capacity to accommodate minor remodeling which will be undertaken while awaiting the major rehabilitation work.

Subsequent remodeling of this building will also require replacement of major building systems, restoration of some building components, and space remodeling.

The building, constructed in 1925 consists of a basement and five floors, and a partial sixth floor. It contains a total of 193,428 gross square feet and 100,354 net assignable square feet. Approximately 56,000 net assignable square feet will be vacated and reassigned upon occupancy of the Replacement Hospital. At a later time construction of a new ambulatory care facility will allow vacation and remodeling of an equal amount of space. The principal recipient will be the College of Medicine.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Of the 56,000 square feet to be vacated by occupancy of the new hospital, approximately 14,000 square feet is reassigned to the Hospital with the balance assigned to the College of Medicine. The Hospital will utilize its space allocation to provide some interim relief for outpatient services and support. The College of Medicine will provide expansion capability for its clinical departments. Although the contribution to outpatient services is a token response compared to the magnitude of the needs, the added space will allow some limited service improvements.

The chilled water riser installation requested for funding in FY 1981 will contribute to the interim usefulness of some of vacated areas. It will allow for occupancy of some spaces with minor remodeling.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The campus development plan based in part upon the Building Use and Condition Study, anticipates retention and rehabilitation of most of the General Hospital. Only the south wing of this building is being considered for potential demolition. Reuse of this building by the College of Medicine is compatible with development plans. Remodeling in lieu of new construction continues to be pursued.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Remodeling of this building is part of an intricate and comprehensive remodeling plan for the older buildings on the main block of the campus. A few minor remodeling projects in this building are requested in the Space Realignment, Renewal and Replacement category of the budget request.

Major Building Rehabilitation 1919 W. Taylor Street Unit - ($703,300)

DESCRIPTION

The 1919 W. Taylor Street Building, formerly the Public Health Hospital and Clinics, was transferred to the University in June, 1975. The building, constructed in the early 1950's, has approximately 183,000 GSF and 109,000 NSF.

The upgrading of this facility was apparent before the University assumed operational responsibility for it. The facility houses the Geriatrics, Alcoholism and the Family Practice programs. Three curricula of the School of Associated Health Professions are also housed in this facility: Occupational Therapy, Physical Therapy, and Biocommunication Arts. This project provides installation and upgrading of the systems required for current and future occupants.

Included in the FY 1981 request are the following:

1. Internal distribution of emergency electricity.
2. Installation of central air conditioning systems.
3. Window replacement, Phase 1. (It should be noted that the window replacement project is requested under the energy conservation category.)

Funds provided in FY 1979 and FY 1980 will have provided a 12 KV system and extension of emergency power from the Eye and Ear Infirmary. This phase of the electrical upgrading will distribute emergency power within the building.

As part of this request, work on the central air conditioning system will begin. The building is presently ventilated by 100% outside air supply through the corridors. There are no ventilation units or ducts serving individual rooms. The scope of work includes installing a new chiller, cooling tower, chilled water risers and pumps, distribution branches, and secondary pumping stations. In subsequent years, the remainder of the necessary work to complete distribution of air conditioning will be scheduled.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Internal distribution of emergency electricity is a code requirement. The violation has been cited by the Joint Commission on Accreditation of Hospitals.

Air Conditioning is required throughout the building. Some package and window units exist in selected areas but these represent only a small portion of the area. Both the patient care programs and the curricula programs will ultimately benefit from the provision.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The Task Force on Space Vacated by the Replacement Hospital recommended, and the Campus Planning Committee approved a proposal that the programs of the College of Associated Health Professions be consolidated in the 1919 W. Taylor Street Unit. This proposal is a long-term plan contingent upon discontinuation of patient care programs on the fifth through eighth floors and their remodeling for new uses. The work planned for this building is compatible with the present and long-term use of the building.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The electrical distribution portion of this request is a continuation of work commenced in FY 1979 and FY 1980. The air conditioning portion of this request is an initial phase of work which will provide the chilled water capacity and vertical distribution of chilled water. Subsequent funding will be needed to finance the horizontal distribution and installation of fan coil units. This work may be undertaken as air conditioning projects or may be integrated in space remodeling projects.

Major Building Rehabilitation First Unit DMP Building - ($2,594,000)

DESCRIPTION

The First Unit DMP Building was constructed in 1931 and has served these past 48 years as the principal home of the College of Medicine, basic science departments. The building contains approximately 180,000 gross square feet and 96,000 net assignable square feet. The building is connected directly at each floor level with the Medical Sciences Addition and the Research Library Unit of the DMP Complex. It occupies the northwest corner of the main block of campus.

Since its original construction this building has undergone no major remodeling. Some areas have undergone partial upgrading over the years, but the greater portion of the building is configured and equipped as originally provided. Building systems, utility systems, and building components are essentially the same as originally installed. Deterioration of time and use is evident. Outmoded and inadequate services prevail. Partial and temporary improvements have been made over time to meet urgent needs. Cross connections and partial systems prevail, creating a uncoordinated maze of operational requirements.

It is anticipated that this building will be rehabilitated and retained for basic science instruction, research, and administration. Rehabilitation will be extended over many years due to the intensive use of this building. The FY 1981 request for funds proposes construction of a mechanical tower, installation of a chiller and chilled water riser, and electrical upgrading. By providing these basic services, subsequent space remodeling can be undertaken on a coordinated, cost efficient scale.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

A major portion of the basic science instruction to medical, dental, nursing, pharmacy and associated health professions students occurs in the building. Much of the office and laboratory resources of the basic science departments are also in this building. Upgrading of this building will therefore directly effect the instructional environment of the students and work environment of many faculty and graduate students. Hot, unventilated, odoriferous areas will become cooled and ventilated over time. Dark, poorly illuminated work areas will be relighted and brightened. Ill-fitting windows and portable fan ventilation which circulate dust and grime will be replaced with filtered air handling systems. Worn-out floors, peeling paint and plaster, and deteriorated tile will be replaced and restored.

The morale and pride of students and faculty will be significantly enhanced by improvements in their presently outmoded environment. Presumeably the productivity and performance will be effected also.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

Major rehabilitation of this building for use by the College of Medicine is compatible with the campus development plan. Development of a chilled water center at this location is compatible with the master plan for air conditioning.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Like other buildings scheduled for major rehabilitation, the First Unit DMP Building is an integral component of a larger plan for the main block of the campus effecting primarily the College of Medicine. All of these building projects are interrelated programmatically and physically.

A few minor remodeling projects in this building are included in the Space Realignment, Renewal and Replacement category of this budget request.

Major Building Rehabilitation Research and Library Unit - ($92,600)

DESCRIPTION

The Research and Library Unit of the DMP building complex, like the First Unit DMP Building is scheduled for major rehabilitation. Although the FY 1981 request emphasizes funding for work in the First Unit, this work will also facilitate building and utility services to the Research and Library Unit. Funds are requested under this project heading to extend the chilled water line from the Second Unit DMP Building, through the Research and Library, to the First Unit DMP. This work will provide interim chilled water capacity to assist minor remodeling projects.

Subsequent remodeling of this building will also require replacement of major building systems, restoration of some building components, and space remodeling.

The building, constructed in 1925, consists of a basement and five floors. It contains 49,600 gross square feet and 26,657 net assignable square feet. All space is currently occupied, primarily by the basic science departments of the College of Medicine, and will be remodeled in cost-efficient segments after basic building systems are available to connect into.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Most of this building has had no major work done on it throughout its 54 years. Renovation of the building systems and remodeling of space, particularly on the second, third, and fourth floors will enhance the working conditions of the departments.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

Major rehabilitation of this building for use by the College of Medicine is compatible with the campus development plan. Extension of the chilled water loop is part of the master plan for air conditioning. Retention of the Old Quine Library Reading Room as an architectural feature is part of the campus plan.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This project is most closely related to rehabilitation of the First Unit DMP Building because the vertical distribution of major building services will be housed in that building and distributed horizontally, floor by floor.

Some minor remodeling of this building is included in the Energy Conservation and Space Realignment, Renewal and Replacement categories of this budget request.

Major Building Rehabilitation Adminsitrative Office Building Annex - ($274,000)

DESCRIPTION

This building, located at 715-721 South Wood, has served many functions since its initial construction in 1927. It presently contains administrative, academic, physical plant, and recreational units. The building consists of a basement and four floors and contains 44,600 GSF and 30,000 NSF. The campus has determined that this building can be utilized to meet its need for administrative office space.

The relocation of Physical Therapy to the 1919 West Taylor Street Unit; eventual relocation of Physical Plant; and the program to construct new gymnasium facilities, will provide sufficient space in this building for campus administration for the foreseeable future. To realize this potential, it is necessary to install and renovate building systems and components, and to rearrange space to accommodate planned new functions.

Funds are requested in FY 1981 to install a passenger elevator and ramp.

Space remodeling, air conditioning, electrical upgrading and other building improvements are deferred to subsequent fiscal year requests.

Deferred space remodeling includes completion of the second and third floors; remodeling of the basement and first floor upon relocation of the Physical Plant Department; and remodeling of the fourth floor following completion of the Chicago Illini Union Building Addition.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Several administrative functions have been initiated or expanded and others are pending which create a demand for additional space. Continuing Education Services, automated student records system, Center for the Study of Patient Care and Community Health, Urban Health Program, and Risk Management are examples of these functions.

Considerable physical reorganization of administrative functions must be undertaken as space permits. The acquisition and remodeling of this space will allow for this to occur. Also, fundamental to the planned use of this building is elevator access to the units housed.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The long-term plan of the Campus is to provide an addition to the Administrative Office Building to accommodate current and future needs. The realities of capital funding suggest such a plan could not be accomplished in the foreseeable future.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Some minor remodeling projects for this building are incorporated in the Energy Conservation and Space Realignment, Renewal and Replacement category of this budget request.

Space Realignment, Renewal and Replacement

Exterior Masonary and Tuckpointing Various Buildings - ($276,000)

DESCRIPTION

This project represents another phase of an ongoing campus tuckpointing program. There are nine campus buildings involved in this phase ranging in age from ten to fifty-four years old.

Due to the deterioration of mortar joints, window caulking and rusting of steel lintels, this work is an absolute necessity if we are to preserve the integrity of the exterior masonary and stop further deterioration of interior plaster walls.

The following is a list of the buildings involved and a brief description of the work that will be performed on each.

1. Old Illini Union (907 Bldg.)--Baker Building wing only--general tuckpointing, all elevations.

2. Research and Library Unit (908 Bldg.)--General tuckpointing--north elevation only.

3. First Unit DMP (909 Bldg.)--Wolcott Street Wing--general tuckpointing, east and west elevations. Polk Street Wing--general tuckpointing from the fifth floor level down to grade, north elevation only. South elevation work was completed under another phase.

4. Second Unit DMP (910 Bldg.)--General tuckpointing--north and east walls. The south and west elevations, in the inner court, were completed under a previous phase.

5. 1919 W. Taylor Street (916 Bldg.)--Re-caulking of the wall coping joints and tuckpointing of the roof penthouses.

6. Hospital Addition (920 Bldg.)--Tower Section/third through fifteenth floors--replacement of approximately 60 steel lintels and general tuckpointing and window frame caulking, all four elevations. The low-rise portion of this building (first and second floors) was completed under a previous phase.

7. College of Pharmacy (924 Bldg.)--General tuckpointing, all elevations. In addition, the marble joints at the main entrance will be re-caulked.

8. Biological Resources Laboratory (932 Bldg.)--West Wing (one story portion) general tuckpointing all elevations. East wing (two story portion)recaulking of the brick panels laid into the exposed structural steel framing.

9. Medical Research Addition (935 Bldg.)--General tuckpointing and re-caulking of all window frames, all elevations.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Maintaining building in good repair will provide a secure environment free of water seepage and deteriorating walls and ceilings.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The buildings provided for in this project are to be retained for use for the foreseeable future. Attention to the integrity of the basic building structure is appropriate.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Additional work on all of these buildings is included elsewhere in this budget request. This work can be undertaken independent of other requested work, however.

Remodel Room 404, Pharmacy Building - ($148,200)

DESCRIPTION

Room 404 is an instructional laboratory consisting of about 3,300 NASF and comprising approximately one-half of the north bay of the fourth floor of the Pharmacy Building. The east section of this room would be partitioned to provide two faculty office-laboratory suites, with the balance of the room retained as instructional laboratory. Existing lighting, ceiling, electrical services, laboratory benches and utility services and flooring will require alteration or replacement to accommodate the new arrangement.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The original design of the Pharmacy Building provided for students taught in large groups in large laboratories, with emphasis upon training dispensing pharmacists. In recent years, however, emphasis has been placed on smaller teaching groups and training clinical pharmacists. Curricular revisions have also necessitated that a new Department of Pharmacy Practice be formed. The latter department in now one of the College's largest departments and this has necessitated that space of the more traditional departments be shared with them. This project would reduce the current overcrowding of graduate students and provide needed office and research space.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The Campus recognizes that the College of Pharmacy has a deficit of faculty office and research space and an excess of undergraduate laboratory space in the Department of Medicinal Chemistry. Maintenance of program quality in the face of critical space shortages can only be accomplished through efficient use of space currently available. This remodeling project is designed to meet that objective.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This project is proposed to be undertaken independent of, or in concert with the major rehabilitation of the Pharmacy Building, depending upon the provision of funds.

Elevator Renovation Second Unit DMP - Phase I - ($302,500)

DESCRIPTION

This project relates to modifications to two passenger elevators in the SUDMP Building. Renovation of a third elevation has been deferred to a future date.

The scope consists of replacing the existing elevator equipment which has been in service for over thirty years, with new geared equipment, automated controls, new car platform, sides and ceiling and installation of new governors, buffers and doors. The speed of the new elevators would be increased within the limitations of a geared operation to approximately 500 feet per minute. The project will meet the demands of the new occupants and meet the code requirements for handicapped, City Fire Department and highrise buildings.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Manual operation of these elevators restrict access to floors of this building by faculty and students after normal working hours. Access is needed in evenings and during weekends to maintain research projects and individual assignments. The cost of continuous manual operation is prohibitive. The College of Medicine considers this need sufficiently important to place it ahead of all of its space remodeling requests.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

Major rehabilitation of the SUDMP Building has always included and anticipated rehabilitation of the elevators. Undertaking this work is compatible with the plan.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Other items of work in the SUDMP Building are included elsewhere in this budget request. The work planned herein can be undertaken independent of this other work.

IEEI Emergency Power Internal Distribution - Phase II - ($288,000)

DESCRIPTION

In order to comply to National Code Requirements in Health Care Facilities as far as emergency power distribution is concerned for hospital buildings, the Building Emergency Power Distribution System must be updated and/or modified to cover the following:

1. Emergency service for Pharmacy.
2. Emergency service to supply and exhaust fans connected to operating rooms.
3. Emergency service to Laser on second floor.
4. Emergency service to Clinics at second floor.
5. Emergency service for Clinics at first floor.
6. Emergency service for water pump (serving at fire pump).
7. Emergency service for air compressors.
8. Emergency service vacuum pumps.
9. Emergency service sewage ejector pumps.
10. Emergency service sump pumps.
11. Emergency service kitchen refrigerators.
12. Increase campus emergency generator system for the above.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The Joint Commission on Accreditation of Hospitals has cited numerous electrical code violations in the Eye and Ear Infirmary. Commitments to correcting these violations have been made. Implementation of this program will provide a safe and secure environment to patients and staff in the event of general power failures.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The Campus has been developing a master plan for emergency electricity, particularly as it relates to health care facilities. The Infirmary has been connected to this planned system and the internal distribution is a natural extension of work previously undertaken.

The Eye and Ear Infirmary will continue to serve as a patient care facility for the foreseeable future. Improvements made within the scope of this project will serve the Campus for many years.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This internal distribution of emergency power is a continuation of the program initiated several years ago. The previous work extended emergency power to the building, provided switchgear necessary to prepare for the internal distribution and connected emergency power to some building systems. Subsequent work of this type in this building will be of a minor nature, related to evolving patient care and research needs.

Other code violation work in this building is requested elsewhere in the SR^3 category of this budget request.

Rehabilitation Convent Building Boiler Piping - ($76,300)

DESCRIPTION

The project consists of replacing the existing oil-fired boiler which is over 20 years old. The base shows extensive rusting and the flue end is particularly bad. On initial ignition, the resulting firing causes a slight leakage of fumes at breeching. In addition, the domestic water storage tank and large capacity heater will be removed and replaced with a small gas-fired storage heater.

Also included as part of the project is the installation and replacement of some piping and valves, and upgrading of convectors to improve the heating deficiencies on the second and third floors. Necessary electrical upgrading is also included.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Upgrading of these Convent Building utilities will assure relatively maintenance free service for some years. As a major resource for the School of Public Health, the faculty and staff have had to endure numerous utility breakdowns and unstable environmental conditions. The added improvements will contribute to a more stable work and study atmosphere.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The purchase of the Convent Building has been requested and is expected to be approved for funding in FY 1980. Use of this building by the School of Public Health has been an integral part of the Campus Plan beginning at the time the 2121 W. Taylor Street Building was selected as a site for the School. The upgrading of the facility following its purchase is compatible with the plan.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The work described in this project is a portion of a larger plan for improvements in this building. The other portions of the work are included in this SR^{3} request and consists of air conditioning the second and third floors, and general upgrading of building components. All of the work will be coordinated whether funded together or in parts.

Remodel Locker Room for Group Conference, C.O.N. - ($168,600)

DESCRIPTION

The College of Nursing space (approximately 4,800 square feet) was initially planned as a locker room which is no longer needed. The project includes the removal of existing concrete block partitions, the purchase and installation of movable partitions, installation of new doors, new carpeting and revisions to the existing ceiling, ventilation, lighting, power distribution and air conditioning.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

At the present time the space in not utilized except for equipment storage. After renovation it would afford space for clinical nursing conferences for undergraduate students and seminars for graduate students. These groups number 6-12 students and one or more faculty numbers. At the present time no space is available for conferences in clinical settings (West Side V.A., 1919 W. Taylor, etc.). The College of Nursing building was not planned to accommodate these groups in the number now existing.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

Facilities of the type required have not been provided in clinical settings in the numbers required. The College of Nursing will maintain the major portion of its activities in this building and improved utilization of existing space is most appropriate.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Some provision for nursing programs have been made in the space allocations of the Task Force on Space Vacated by the Replacement Hospital. Space remodeling for these nursing program areas are included in the deferred portion of major building rehabilitation.

Remodel Rooms 576-581, SUDMP, Building 910 - ($115,000)

DESCRIPTION

This project consists of remodeling of approximately 2,000 NSF of space vacated by the College of Dentistry into an administrative office suite for the Department of Anatomy, School of Basic Medical Sciences. In certain cases existing interior walls will be removed and new configuration for the space will be designed. Appropriate lighting, heating, and electrical services will be provided, a suspended ceiling installed, as well as new floor covering. The suite will be connected with the new mechanical system now available in the mechanical tower.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The Department of Anatomy is a major department in the School of Basic Medical Sciences, providing fundamental instruction to medical students in human anatomy. A new department head has been involved in strengthening the department in order to expand instructional and research capabilities; to this end, he has employed additional faculty, and has acquired newly remodeled space in Building 910 for these faculty. He has relocated the departmental offices from Building 909 to this suite of rooms in Building 910, and has occupied the space unremodeled. It is believed that the condition of this suite must be improved to better accommodate its new occupants.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Remodeling of Rooms 576-581 of Building 910 has been part of an overall program of remodeling for this vacated dentistry space. Funding was not

sufficient in earlier projects for this remodeling. However, the work contemplated for this SR^3 project will be part of the total program necessary to place Building 910 into full operation.

Remodel Rooms 560-570A, SUDMP, Building #910, Anatomy - ($138,000)

DESCRIPTION

This project consists of remodeling approximately 2,400 NSF of vacated dentistry space to provide wet laboratories and faculty offices for the Department of Anatomy of the School of Basic Medical Sciences. The work will consist of refurbishing and renewal of mechanical services, purchase and installation of new laboratory benches, and connection of the rooms to the new mechanical systems in the new mechanical tower. New flooring, lighting, and suspended ceilings will be part of the project.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTIONS TO SERVICES

A new head of the Department of Anatomy has proceeded to strengthen the instructional and research programs; to accomplish this, he has employed new faculty members who require research laboratories and offices. This project will provide additional facilities to accommodate the Department's new personnel.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The Campus Planning Committee has declared that expansion of the School of Basic Medical Sciences will take place in Buildings 908, 909, 910, and 935. The Departmental offices for Anatomy now are, and will continue to be on the fifth floor of Building 910. Use of this suite of rooms, now assigned to Anatomy, is in keeping with the Campus Planning Committee intent, as well as serving to provide a measure of contiguity for the Department.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Remodeling of the fifth floor of Building 910 has been and remains part of the overall program of remodeling for the Building. Work done in this SR^3 project will serve to move the total project toward completion.

JCAH, OSHA, and Code Corrections - IEEI - Phase III - ($115,000)

DESCRIPTION

This project is a continuation of a program started in FY 1976 to correct all building deficiencies and code violations and to meet the requirements of the Occupational Safety and Health Administration and the Joint Commission of Accreditation of Hospitals.

This scope of work for this phase of the project relates to the following items:

1. Replacement of combustible material in patient areas.
2. Replacement of existing glass panels in corridors with wire glass and steel frames.

3. Installation of electric hold-open devices for corridor doors.
4. Installation of handrails in corridors for patient floors.
5. Extension of building public address systems to various areas.
6. Modification to existing building fire protection, fire pump and fire alarm system including building annunciator panel.
7. Replace corridor transoms with fire retardant materials.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The Joint Commission on Accreditation of Hospitals has sited many code violations in the Eye and Ear Infirmary. Commitments have made for the corrections of these violations. These corrections will help prevent future accreditation problems and will provide considerable assurance against law suits emanating from negligent attention to public safety codes.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The Physical Plant Department maintains an extensive list of code violations cited by various public agencies. This request is compatible with the campus plan to correct all outstanding code violations. Modification of the fire alarm system is compatible with the plan to bring all fire alarm systems up-to-date with Chicago Fire Department requirements.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Code corrections is a long-standing continuing program. Other code violation projects in this building are presented elsewhere in the SR^3 category of this budget request.

Remodel Dean's Suite, Pharmacy Building - ($80,700)

DESCRIPTION

The space occupied by the Dean of the College of Pharmacy has not been modified since original occupancy several years ago when it was vacated by campus administration. The area involved is approximately 1,245 NASF and involves partitioning of space and attendant upgrading of ventilation, lighting, air conditioning, etc. The Dean's Suite would be furnished with equipment as part of the project.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION

Administrative responsibilities associated with expanded enrollments, curricular changes and special programs mandate a more efficient design of space to accommodate the necessary administrative support functions and personnel. Such changes would be more responsive to the needs of the people served, students, faculty, parents, alumni, visitors, etc.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The campus development plan anticipates retention of the College of Pharmacy in its existing facilities for the foreseeable future. The space to be remodeled, together with adjacent administrative space on the first floor is expected to be sufficient for the foreseeable future also.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This project is described in the broader context of major rehabilitation of the Pharmacy Building elsewhere in this budget request. This project is relatively independent of other planned remodeling.

Roof Repairs - FUDMP and Laundry Building - ($60,700)

DESCRIPTION

This project involves general roof repairs to the First Unit DMP Building and Laundry Building.

On the First Unit DMP, the roof is a pitched tile roof. While none of the tiles are apparently missing or cracked, many are misaligned. This work will involve removing the roofing tile in certain areas (where the misalignment has occurred) and renewing the shingle strips. Approximately 15% of the roof area is involved.

The Laundry Building roof is composed of tar and gravel. The work will consist of cutting out various sections of deteriorated and blistered roofing and replacing it with new material. Also, extensive flashing repairs will be made to the numerous sheet metal ventilators that penetrate this roof.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Maintenance of these buildings will stop and will prevent further damage to these buildings thereby avoiding greater future costs.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

These buildings are to be retained for use for an indefinite period of time. Repair of this type will maintain the integrity of these structures for long-term use.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The energy conservation category of this budget request contains considerable additional roof repair in combination with roof insulation work. The insulation of these two roofs will be undertaken at a later date. The repair work cannot be deferred.

Provisions for the Handicapped - ($50,200)

DESCRIPTION

This project covers the installation of concrete ramps at the entrance to various campus buildings in order to provide accessibility for wheelchair persons. These accessibility modifications are required by the Federal Government under the Section 504 of the Rehabilitation Act of 1973.

This is the second phase of a multi-phased program. The building involved in this phase is the administrative Services Building (907).

A ramp to the Convent Building will be constructed at the courtyard entry. Some doorway modifications will be required.

A permanent ramp and new entry into the Administrative Services Building will be provided.

Ramp construction will consist of excavating work, poured concrete sidewalks and ramp surfaces, and wrought iron handrails. The ramps will be 5'0" wide and all will require at least one intermdediate level landing due to the length requirement. Ramp slopes will not be greater than 1'0" in 12'0" (8.33%). Ramp surfaces will have a non-slip surface which will be provided by troweled in "Alundum" or similar non-slip material.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The Campus is commited to comply with Section 504 of the Rehabilitation Act of 1973. Continuing attention to meeting compliance requirements will assure continuation of federal funding of programs upon which the Campus is very dependent.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The campus plan for removal of architectural barriers to the handicapped has been developed only in an outline form. This project is a second step toward removing entrance barriers to building entries. Subsequent work will be programmed as part of building rehabilitation or as separate handicapped provisions.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

These ramp construction projects are independent of other projects included in this budget request. They are a continuation of a program initiated in FY 1980 which will be continued in subsequent fiscal years.

Upgrade Electrical Services Operating Room, B.R.L. - ($48,400)

DESCRIPTION

The upgrading of the electrical services in operating rooms of the 932 Building involves the ten original surgical suites and the support areas in the Phase I section. This area (3,500 sq.ft.) is currently being used for limited experimental surgery, animal manipulation and physiological monitoring by various departments on the campus. The efficient usage of this area will be significantly increased when the electrical deficiencies are corrected.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The present electrical system in this area does not meet building codes for receptacles, has substandard wiring, and has cross connected circuits between rooms. These deficiencies prevent the usage of many monitoring systems and create tremendous problems in terms of overloading the circuits. This area represents a potentially significant hazard to those working in the rooms. With the increasing usage of sophisticated electrical equipment for experimental monitoring, this area cannot effectively meet the needs of the funded research projects requiring this type of support.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The Medical Center Campus has consolidated animal holding and surgery facilities in the Biological Resources Laboratory. This centralization plan is to be retained as a critical research and teaching support service in all subsequent facilities planning. Efficient operation of the facility is important.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This project is independent of all other projects included in this budget request although an energy conservation project is requested in the same building.

Install Enclosed Supply and Return Air System - AOB Building - ($55,000)

DESCRIPTION

This project is a continuation of a on-going project to correct the building air distribution deficiencies which is approximately 60% completed.

The work relates to the replacement of the existing air distribution system with ductwork distribution and diffusers to provide the interior areas with adequate ventilation.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The plenum for distribution of air to interior sections of the Administrative Office Building has not functioned as designed, creating many areas of overheated, underventilated areas. Key operated windows are opened to provide relief to some areas, but this is hazardous. Installation of ductwork to provide efficient air handling will improve the comfort of staff housed in those areas and thereby improve production and morale.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

This project is unrelated to the campus development plan except insofar as this building is a permanent campus building and should be modified to function efficiently.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This project is unrelated to other projects in this budget request. No subsequent requests related to this problem is anticipated.

Remodel Transplant Research Lab, Room 525, Hospital Addition, Surgery - ($72,600)

DESCRIPTION

Remodeling of Room 525 HA (920 Bldg.), will convert this area from a Biochemistry Laboratory (Department of Surgery) to a Tissue Typing Laboratory. The present Room 525 is an old Biochemical lab with stand-up benches, no provision for sterile areas, and a non-functional chemical hood. Remodeling is being requested to provide sterile spaces, a dark room for fluorescent microscope work. A small office for the laboratory supervisor in charge of the research and development in tissue typing will also be created.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Space is urgently needed. The Tissue Typing Laboratory is engaged in histocompatibility studies and service for a large group of renal, corneal, bone marrow, and pancreas recipients. All currently available space is fully occupied by these ongoing activities.

The recent funding (renewal) of a major research project involving studies of pancreas transplantation in subhuman primates depended heavily on the proposed histocompatibility studies to be undertaken. This work cannot be completed in the facilities presently available. Similarly, an ongoing project concerning immunologic modification by blood transfusion in histocompatible canine model, funded for pilot studies by BRSG and in preparation for extramural grant request, cannot be accommodated in present facilities. New developments in clinical histocompatibility (DRW and DW matching, disease associations, etc.) await space for implementation.

RELATIONSHIP WITH CAMPUS DEVELOPMENT PLAN

The new Replacement Hospital Facility will include emphasis on specialized clinical services, especially services, especially transportation. Transpolantation services will be expanded from purely renal to cardiac and pancreatic grafts when we occupy the new hospital. It is most important to be prepared to offer appropriate state-of-the-art histocompatibility services. We cannot develop such methodology without a laboratory. The proposed remodeling of Room 525 will provide an acceptable facility in which to conduct the research necessary for the University to keep up-to-date.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

With vacation of the existing hospital, the Department of Surgery will continue to occupy presently assigned space on the fifth floor of Building 920, and will receive additional space on the fifth and sixth floors of Buildings 911 and 920. This will allow consolidation of the Department for administrative and research purposes. Major systems remodeling is required for both buildings, and major space remodeling will also be necessary in order for the vacated hospital space to be properly utilized.

However, the laboratory activities in Room 525 now are supported by existing systems, and the remodeled laboratory will make no significant increases to the existing load. Also, space remodeled with this project will fit appropriately into an overall remodeling program for the building.

Air Condition Second Floor, South, NPI, Psychiatry - ($38,500)

DESCRIPTION

This project will consist of the extension of the central chilled water system from piping risers on the second floor, south wing of Building 950, and installation of fan coil units in rooms 208, 209, 212, 213, 214, 215, 216, 218, 219, 220, 221, and 222. Necessary electrical work will be done, plus patching where the piping has been installed.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

All of the second floor of the south wing of NPI houses the teaching faculty and support staff for the medical student training program in psychiatry. These rooms are not only used as office space for faculty and staff but are used also for small group teaching of students and for interviewing of patients. Room 216 is a large room used for multi-purposes; e.g., for our Supportive Care Clinic one morning a week; for conference room space; group therapy with patients; and for special group activities for in-patients after working hours. Use of this space will continue as indicated above.

The rooms in this area are on the south and west sides of the NPI building and get the sun for a good part of the day. Our medical student clinical training program continues during the summer quarter and our faculty utilizes these rooms all during the summer months. The lack of air conditioning for this area reduces work efficiency and lowers morale considerably.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The air conditioning of the psychiatry wing of NPI has been a high priority item in the capital development program for the psychiatry wing of NPI for many years. Up to this time, the air conditioning of patient floors 4 South, 5 South, 1 South, and some areas of 3 South have been accomplished as part of the long range development program for psychiatry. The air conditioning of 2 South and 8 South are the next most desirable phases in this long range program which should be accomplished.

The Department of Psychiatry will continue to occupy the south tower of Building 950 for the foreseeable future.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

No major remodeling is now planned for the south wing of Building 950.

Remodel Rooms W-472 and W-429, General Hospital, Transplantation Surgery - ($41,800)

DESCRIPTION

The rooms listed above will be remodeled to create an organ preservation laboratory, several faculty offices, and a service room. The work will include renovation of the heating system, central air conditioning, the appropriate electrical services, new laboratory benches and storage cabinets, new wall construction as required, patching and painting.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

There is at present no satisfactory space in the Abraham Lincoln School of Medicine, the Department of Surgery, for organ preservation prior to transplantation, nor for patient donor examination, medical staff, and record retention areas for transplant patients. This remodeling project will provide the needed facilities adjacent to a major surgical suite of University Hospital.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

There will be increasing programmatic emphasis on the Medical Center campus upon teaching of organ transplant techniques. The space available for this project, if it can be appropriately remodeled, will support this programmatic emphasis, and thus augment total implementation of the Medical Center campus development.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The Medical Center Campus is requesting major capital funds to upgrade Building 911, as portions of the building are released from hospital service and assigned to academic units for teaching and research activities. Remodeling of the space for this project will fit appropriately into the total remodeling for this facility.

Air Conditioning Second and Third Floors Convent Building - ($173,800)

DESCRIPTION

This project consists of installing new through-wall heating units on the second and third floors and the renovation or modifications to the existing temperature control systems.

The existing hot water heating convectors on the second and third floors will be replaced with the new combination heating and air conditioning units.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

Upgrading of these Convent Building utilities will assure relatively low maintenance needs for some years. As a major resource for the School of Public Health, these improvements will alleviate the unstable environmental conditions the faculty and staff have had to endure.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The purchase and upgrading of the Convent Building is an integral part of the campus plan for the School of Public Health.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The work included in this project is closely related to the boiler replacement and piping project SR^{3}.

Remodel Third Floor, North Building, Rockford School of Medicine - ($104,500)

DESCRIPTION

Existing space--3,600 NASF--will be remodeled to provide a patient waiting area, testing and examination rooms, toilet rooms, supporting services and records space, and student areas. The work will consist of the demolition of existing walls and structure as required, reconstruction of new walls and doorways, reconfiguration of lighting and building services, and the installation of new flooring and suspended ceiling.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The Rockford School of Medicine proposes to develop a primary care internal medicine residency program that closely coordinates with its currently functioning Office for Family Practice. The ambulatory care unit of this program will be housed in the North Wing on the third floor using the space vacated by shifts of service departments to more suitable areas and by the consolidation of buisness activities supporting the Office for Family Practice.

At present, the Rockford School of Medicine has only one residency training program and therefore, at best, can only offer approximately one-fourth of its graduating class opportunities for graduate medical education in Rockford. Medical students at the School need more contact with house staff in the learning process, and likewise appropriate teaching contributions by residents will improve their training experiences. It is proposed that the format for the residency will closely parallel that used in the development of the family practice residency. A group of three dedicated and committed internists will be selected to supervise and participate in the health services provided by the residents in the proposed ambulatory setting. Hospital experiences during the first year of the program will closely parallel those of first year residents in family practice training and will occur primarily in the community hospitals of Rockford. In the subsequent two years, organized exposures to tertiary care fields will be planned to augment the ambulatory care experience in primary internal medicine. Without the proposed remodeling, the program cannot be started.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

In Rockford, the best, if not only appropriate field in which to develop expanded residency training opportunities, is internal medicine. Without elaboration of graduate training opportunities, not one of the community hospitals can be designated as a major teaching institution. The Rockford School of Medicine cannot be satisfied with training undergraduate medical students. The latter, of necessity must seek other locations for their residencies, unless they are committed to family practice per se and as a consequence, many of them are lost to "downstate" Illinois. Since residents tend to practice in the general area where they take their graduate training and since residents are an important role model for medical students, the development of internal medicine residency training is considered important and consistent with the overall goals of the Rockford School of Medicine in primary care. Therefore, providing of this remodeled suite will aid the Rockford School in achieving its mission and retaining medical professionals in Illinois.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This program stands alone and will not affect other planned capital projects. Also, it is space that can be effectively shared with the Office for Family Practice. The entire facility can be created by the remodeling of currently available space which is conveniently located.

Remodel O.B. Clinic, General Hospital - ($220,000)

DESCRIPTION

The area for which remodeling funds are being requested is the present OB-GYN Clinic which is an area of 2,652 GSF located on the first floor of the University of Illinois Medical Center General Hospital Building 911. This area is now and has, for numerous years, been used as an Obstetric and Gynecology Clinic. Following remodeling, this area will continue to be used as a general OB-GYN Clinic or for specialty clinics related to this service. The Obstetrics and Gynecology service is part of the clinical training of all medical students and represents one of the major residency and post-graduate training specialities here at the Medical Center.

It is recommended that the new facility contain the following elements:

	CLINICAL AREA	NASF
1.	Six examination rooms--6 x 120	720
2.	Two patient toilets	NIN*
3.	One special procedures room--1 x 150	150
		870
	SUPPORT AREAS	
1.	Soiled utilities room	120
2.	Clean utilities room	120
3.	Supply and storage room	120
4.	Personnel lockers, lounge, and toilets	NIN*
5.	Janitors closet	NIN*
		360
	ADMINISTRATIVE AREAS	
1.	Waiting room and toilets	360
2.	Nurse/receptionist station with records office and medi-prep station	120
3.	Two patient consultation rooms One staff consultation room Two exit interview rooms	120
		600
	Total NSF	1,830

*NIN = Not in net square footage.

The space standards on room sizes were calculated on HEW requirements and/or standards used for ambulatory care an other space studies.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The University of Illinois Hospital embarked on a program of remodeling and upgrading its ambulatory care clinic space approximately seven years ago. This clinic is part of that continuing program. A recent study completed by the Space Vacated by the Hospital Task Force recommends the future development of a separate ambulatory care service and the turning over of existing ambulatory care to other college units for other purposes. The hospital remodeling program continues to address only minimal renovating and remodeling needs for this area. This project continues this philosphy. Any upgrading of utilities and services to these areas only enhances it for future occupancy.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The patient population served by the OB-GYN Clinic requires a total of approximately 20 exam rooms plus support facilities. The facilities currently used for ambulatory services do not lend themselves to the development of a single large clinic to serve this population without the relocation of remodeling of other adjacent clinic areas. Because of this, it was decided to develop two OB-GYN Clinics. The FY 1979 Capital Budget Funds were for the remodeling of a vacated patient floor area in the Orthopedic Hospital, Building 913. Upon completion, the present OB-GYN Clinic will move into this newly remodeled setting and continue to serve the entire OB-GYN population until such time as the

remodeled clinic involved in this request is completed. At that time, this service will be split between the two clinics.

Extend System 7 - Series I - Phase III - ($55,000)

DESCRIPTION

Phase III of the Series I (Formerly System 7) Controlled Access Program will provide controlled building access for the outlying Medical Center Buildings which were not included as part of the earlier phases of this program.

Those buildings considered to be incorporated and connected to the system are:

1. Building 907 - Old Illini Union
2. Building 915 - Public Helath Building (St. Mary's Convent)
3. Building 916 - U. of I. Hospital - 1919 W. Taylor St. Unit T.B. San.)
4. Building 930 - School of Public Health

PROGRAMMATIC NEED AND EXPECTED CONTIBUTION TO SERVICES

Commitment to building security afforded by this computerized system 7 is required before the system can be fully realized. The control of keys, relief of security personnel and general safety of persons and property will result.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

An automated security system of building entries is part of the campus development plan. System 7 is the system selected and installed in the buildings.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This project is unrelated and independent of other projects in this budget request.

Remodel Rooms 234 and 236, First Unit, DMP, Physiology - ($61,600)

DESCRIPTION

Rooms 234 and 236 are located in the Department of Physiology and Biophysics in the first unit of the DMP building. Room 234, an area of approximately 176 square feet, is currently used as a faculty office. Remodeling plans include installation of central aid conditioning, new vinyl floor and suspended ceiling. It will continue to be used as an office after remodeling.

Room 236, adjacent to room 234, is a research laboratory of approximately 272 square feet. Remodeling will consist of the installation of central air

conditioning, vinyl floor and suspended ceiling. A conventional four foot fume hood is to be purchased and installed, and existing wooden laboratory benches are to be replaced. Utilities (air, gas, vacuum) will be relocated and the number of jets will be reduced from eight to three for each service. Power strips for 110V and 208V will be added along the North wall. A 110V power strip will be added along the East wall.

Presently there are two sinks in this laboratory. The smaller sink on the East wall will be removed and replaced with the fume hood mentioned above. The hood is to have the usual laboratory services, air, gas, vacuum, steam and cold water. A new sink with metal base cabinet to match other new furniture will replace the larger existing sink.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The Department of Physiology and Biophysics is a major unit in the School of Basic Medical Sciences. Its teaching programs encompass many students in addition to medical students. The Department is at present under-strength, and additional faculty are being employed to provide adequate services for the teaching program. Room 236 will continue to be used as a research laboratory for new faculty members.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The School of Basic Medical Sciences, including the Department of Physiology and Biophysics, will continue to function in Buildings 908, 909, 910, and 935. No relocation, nor any large quantity of new space will be available to this department. Therefore, upgrading of existing facilities must be accomplished to increase efficiency and productivity of department members. It is desirable to maintain University facilities in the best possible and usable conditions. This space has not been upgraded in a number of years and because of the continuing expansion of the Department of Phsyiology and Biophysics, all available space must be made conducive to modern scientific research.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Work of remodeling and upgrading will be accomplished project by project as funds become available. Because no change in building use is contemplated, work called for in this SR^3 project will be in continity with the total scheme of remodeling for Building 909.

Creation of a New Wet Laboratory, Room 409, 409B, FUDMP - ($39,600)

DESCRIPTION

Room 409 and 409B presently house the departmental electronics and machine shop in 850 sq. ft. of space. Because of the diminished importance of the machine shop in departmental operations, this proposal involves vacating Room 409 DMP by condensing the electronics and machine shop into Room 409B and converting Room 409 into a new wet laboratory. This new wet laboratory (300 sq. ft.) will expand facilities to accommodate post doctoral staff associated with the adjacent laboratories.

PROGRAMMATIC NEED

One of the crucial problems, occuring with increasing frequency, is the accommodation of sudden expansion and contraction of research programs induced by the intermittent injections and withdrawal of research funding. To accommodate sudden shifts in need, the department is seeking to create several small, unassigned research laboratories which can be committed according to programmatic needs. Room 409 is ideal for this function. It is located in close proximity to four larger research laboratories and could readily be assigned to any of these laboratories according to programmatic need. Its size would be ideal for accommodating a post doctoral fellow or research associate.

RELATIONSHIP TO CAMPUS DEVELOPMENT PROGRAM

This strategy of creating unassigned, wet laboratory space at the departmental level is an extension of the campus-wide decision to commit space according to programmatic need. The creation of modest amounts of readily reassignable space at the departmental level will increase the speed of response to sudden local changes, as well as cushion the impact of large changes in space needs on reassignable school and college spaces.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

Remodeling of Building 909 is in high priority for the College of Medicine. No major work has been done in this building since its construction. However, the work required is principally that of replacement, renewal, and up-grading. The building will continue to be utilized as a research laboratory/faculty office/classroom facility. Therefore, remodeling in Rooms 409 and 409B that will be accomplished in this SR^3 project will be part of the total program of remodeling envisioned for this building.

Renovate Convent Building - ($91,300)

DESCRIPTION

This project will consist of general renovation of the building which presently houses some administrative offices and classroom facilities of the School of Public Health.

Generally, renovation work in the building has been "stop-gap" since it was occupied by the University in 1973. Major renovation work is now in order if a modicum of livability is to be maintained. Specifically, the following work should be done in the near future:

1. Major roof repairs.
2. General tuckpointing.
3. Window replacement. Ultimately all the windows should be replaced; however, this program covers approximately 60% of the windows which are in need of immediate replacement.

4. Repairs to damaged and deteriorated plaster throughout the building.
5. Repair and replacement of floor coverings. Some to be replaced in kind, others with carpeting; on a selected basis.
6. General interior painting and decorating.
7. Stairwell handrail repairs.
8. Replace concrete stoop, stair and handrail at south elevation.
9. Convert second floor bathroom to a toilet room.

The above described work is the most pressing time and was selected on the basis of life safety, environmental comfort and abortment of accelerated deterioration.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The work included in this project scope will provide a safer, more comfortable environment and will forstall deterioration otherwise expected to accelerate.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The purchase and retention of use of this building for the School of Public Health is an integral part of the campus plan. Repairs as planned will assure the integrity of the building for long-term use.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The project is the third of three projects for this building included in the SR^3 category of this budget request. All three projects are related but can be undertaken separately.

Air Condition Eighth Floor, South, NPI, Psychiatry - ($46,200)

DESCRIPTION

This project will be comprised of the extention of central chilled water to the eighth floor, and distribution to and installation of fan coil units in Rooms 804, 805, 806, 807, 809, 809A, 809D, 809E, 809F, 809G, 809H, 809I, and 809J. Necessary electrical work plus patching and painting where piping has been installed will be part of the project.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICE

The eighth floor of the south wing of NPI houses the child psychiatry division of the Department of Psychiatry. The space on this floor provides office space for all the professional and support staff of the child psychiatry division. The major functions of this division are: medical student teaching, professional training in child psychiatry, psychology, and social work, out-patient treatment for children with behavioral problems and mental disturbances, and group therapy programs for their parents. Medical students assigned to the psychiatry clerkship rotate through child psychiatry as do residents in adult psychiatry. Also this division provides professional training for future specialists as child psychiatrists, child psychologists,

and social workers specializing in work with children. The above space includes a playroom for children with adjoining rooms for observation of play activities, and a conference room for small group meetings and group therapy sessions with parents. It is planned to continue to use this space as indicated above.

It is noted that the rooms in this area are on the south and west sides of NPI and get the sum for a good part of the day. The rooms are used for teaching purposes and clinical activities throughout the summer months. The lack of air conditioning for this area reduces work efficiency and provides much less than optimal pleasant working conditions. Also, without air conditioning the space provides a much less favorable physical environment for patients and their families.

RELATIONSHIP TO CAMPUS DEVELOPMENT PROGRAM

The air conditioning of the Psychiatry Wing of NPI has long been a high priority for the capital development program of the department. Some patient areas have been air conditioned under this program already. The air conditioning of the eighth floor along with the second floor of NPI should be our next priority in pursuing the long range goals for the complete air conditioning of NPI.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

No major remodeling work has been done or is now planned for Building 950, the south tower.

Renovate Laboratory Hood System Second Floor, SUDMP, Pathology - ($50,600)

DESCRIPTION

The project consists of the installation of a new exhaust duct system for the existing fume hoods on the second floor. The existing 10" horizontal stainless steel exhaust duct will be reused in some floors and connected to a new riser in the mechanical tower, a new fan and motor of sufficient capacity to exhaust the existing hoods and the new hood on the second floor will be installed. This project will benefit both the Department of Pathology and the Center for Craniofacial Anomalies.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

At present, the existing hoods have lost face air velocity. With this loss, both noxious fumes and particulate matter are not being exhasted, but are leaking back into the employees work area causing a health hazard for employees working in the area. In addition, the employees of CCFA are working with known carcinogens. Completion of this project will allow the laboratory testing and service functions to continue in the laboratories on the second floor of Building 910 for the foreseeable future.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

While the new hospital will contain certain laboratory facilities, there is no plan nor sufficient space to remove these laboratories from their present location. However, should such relocation occur, the laboratory areas on the second floor will be acquired by the School of Basic Medical Sciences, and functional fume hoods are a necessity in much basic science research.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

The total plan for remodeling of Building 910, the Second Unit, DMP, includes remodeling of the second floor. In the new mechanical tower now completed, duct raceways have been provided to accommodate the fume hoods for the building. This project will connect the existing fume hoods to the new duct system.

Remodel Room 200, Pharmacy Building - ($309,100)

DESCRIPTION

Room 200 is a large laboratory, located in the north bay on the second floor of the Pharmacy Building. It consists of 6,600 NASF and a capacity for 225 students. The remodeling project would reduce the size of the laboratory, and create research space for approximately ten graduate students. This remodeling will substantially reduce the present overcrowding of graduate students in the Department of Pharmacy. The scope of work requiries dividing partitions; allocation of existing laboratory benches; installation of new lab benches, fume hoods, and lab furniture; and rearrangement of lighting, ventilation, electrical and laboratory services.

PROGRAMMATIC NEED AND EXPECTED CONTRIBUTION TO SERVICES

The original design of the Pharmacy Building provided for students taught in large groups in large laboratories, with emphasis upon training dispensing pharmacists. In recent years, however, emphasis has been placed on smaller teaching groups and training clinical pharmacists, rendering old laboratories such as Room 200 inefficient. The remodeling would reduce the size of this laboratory and increase free space for other uses.

RELATIONSHIP TO CAMPUS DEVELOPMENT PLAN

The campus recognizes that the College of Pharmacy has a deficit of faculty office and research space. Maintenance of program quality in the face of critical space shortages can only be accomplished through efficient use of space currently available. This remodeling project is designed to meet the objective.

RELATIONSHIP TO OTHER CAPITAL PROJECTS

This project is described in the context of major rehabilitation of the Pharmacy Building elsewhere in this budget request. This project is proposed to be undertaken independent of, or in concert with the major rehabilitation, depending upon the provision of funds.

URBANA-CHAMPAIGN CAMPUS

The FY 1981 Capital Request represents 26 projects and involves a cost of $19,600,200, excluding energy conservation projects. Only three of the 26 projects are in the Building category, namely, the Library Sixth Stack Addition, the Pilot Training Facility, and the Police and Fire Station. The Library Sixth Stack Addition will provide additional shelf storage space for the constantly growing General Library book collections used by students, staff, and citizens of the State. In addition to alleviating the present crowded conditions, the Library Sixth Stack Addition will improve the operating efficiency of the entire library. The Pilot Training Facility is a small but desperately needed project which has been given a high priority by the Campus Administration because of the badly deteriorated condition of the existing facility which this project will replace. The Police and Fire Station is intended to create a new facility to replace the inadequate frame building currently used by the Police Department and make way for the imminent razing of the old structure. The new facility will also provide a much needed sub-station for the University Fire Department to serve the south campus area.

A second major emphasis of the FY 1981 Capital Request deals with the Remodeling and Rehabilitation category. There are two Major Remodeling requests (English Building Renovation and Main Library Remodeling) involving a total cost of $1,870,000 and each represents specific and real needs. The three Space Realignment, Remodeling, and Replacement (SR^3) packages, each containing about 15 projects, account for approximately three-quarters of the FY 1981 Remodeling Request. These SR^3 projects relate heavily to accessibility for the handicapped, general safety, and academic space improvements.

A third important category involves the request for Planning Funds. The funds requested are for the preliminary planning and designing related to the new Building and Major Remodeling projects to be requested for construction funds in FY 1982. It is important that these funds be provided in order that planning progress on the projects can proceed during FY 1981. Planning funds are requested for three new Building projects (Life Sciences Teaching Laboratory, Television Building Addition, and Engineering Library) and two Major Remodeling projects (Davenport Hall Remodeling and Auditorium Remodeling).

TABLE 1
URBANA-CHAMPAIGN CAMPUS
LIST OF FY 1981 PROJECTS BY CATEGORY

Projects	Estimated Cost
1. Buildings, Additions, and/or Structures	
Library Sixth Stack Addition	$ 8,494,700
Pilot Training Facility	455,900
Police and Fire Station	1,338,800
Subtotal	($10,289,400)
2. Land	
Life Sciences Teaching Lab	150,000
Willard Airport Land	84,600
Subtotal	($ 234,600)
3. Equipment	
English Building Remodeling	79,000
Subtotal	($ 79,000)
3a. Equipment Related to Space Realignment, Renewal and Replacement Projects	368,500
Subtotal	($ 368,500)
4. Utilities	
Library Sixth Stack Addition	123,000
Police and Fire Station	166,600
Subtotal	($ 289,600)
5. Remodeling and Rehabilitation	
English Building Remodeling	1,650,000
Library Remodeling (Main)	407,000
Subtotal	($ 2,057,000)
5a. Space Realignment, Renewal and Replacement	
Generated Amount	5,911,141
Additional Projects	*
Subtotal	($ 5,275,300)

TABLE 1 (Cont'd.)

Project	Estimated Cost
6. Site Improvements	
Pennsylvania Avenue Street Improvements	$ 399,300
Campus Landscape Improvements	50,000
Intramural Athletic Fields	52,000
Subtotal	($ 501,300)
7. Planning	
Life Sciences Teaching Lab	601,800
Television Building Addition	330,700
Davenport Hall Remodeling	75,000
Auditorium Remodeling	80,000
Engineering Library	600,200
Subtotal	($ 1,687,700)
Total FY 1981 Capital Budget Request - Urbana-Champaign	($20,782,400)

*Additional projects moved to energy conservation package

TABLE 2
COST PER SQUARE FOOT OF NEW BUILDING AND MAJOR REMODELING PROJECTS
Urbana-Champaign Campus

Category/Project	Project Cost	Gross Square Feet	Assignable Square Feet	Efficiency ASF/GSF	$/GSF	$/ASF
New Buildings*						
Library Sixth Stack Addition	$ 8,494,700	76,860	63,000	.82	$110.52	$134.83
Pilot Training Facility	455,900	4,500	3,960	.88	101.31	115.13
Police and Fire Station	1,338,800	13,533	9,530	.70	98.93	140.48
Life Sciences Teaching Lab	10,874,000	80,143	50,000	.62	135.63	217.48
Television Building Addition	5,139,300	35,164	21,000	.60	146.15	244.73
Engineering Library	10,847,300	88,630	62,400	.70	122.39	173.83
Major Remodeling (All Phases)						
English Building Remodeling	1,650,000	31,428	16,343	.52	52.50	100.96
Library Remodeling (Main)	407,000	258,626	193,970	.75	Not Applicable	
Auditorium Remodeling	1,795,000	43,380	20,153	.46	43.38	89.06
Davenport Hall Remodeling	4,170,000	190,573	68,237	.62	38.05	61.11

*Includes FY 1982 projects for which planning funds are requested in FY 1981

Buildings, Additions and/or Structures

LIBRARY SIXTH STACK ADDITION

Estimated Total Project Cost	$8,712,700
Estimated Bond-Eligible Funds Required in FY 1981.	8,617,700
Total Non-State Funding for Which the Project is Eligible.	-0-
Estimated Non-State Funding.	-0-
Gross Square Feet.	76,860
Net Assignable Square Feet	63,000
Building Efficiency.	82%

This project will provide urgently needed storage space for the continuously growing Universtiy General Library book collection. To meet the instructional and research needs of students and faculty, the University Library adds approximately 120,000 to 150,000 bound volumes a year to its collections as well as an additional 50,000 items of Library material such as maps, photographs, sound recordings, music scores, audio-visual cassettes, microtexts, newspapers, etc. The University Library also serves as a "last copy" book repository for the State Library System and is both a state and national resource.

The General Library bookstack, which houses approximately 80% of the collection of over 9,000,000 items is 100% full. The 34 departmental libraries, which house the remaining 20% of the collection have reached capacity and can no longer transfer their less frequently used materials to the main bookstacks to make room for new material in their working collections. This severe overcrowding has occurred in spite of the fact that the Library has been conducting an extensive program of compacting storage facilities, and fore-edging for several years. Each of these procedures is time consuming, inconvenient for staff and users, and expensive. Fore-edging, this is shelving the books on the front edge, is especially wasteful because bindings are not visible, and locating and servicing the collection becomes several times more exhaustive of staff.

During FY 1979, the University Library was forced to lease storage space at a remote location in order to house Library materials. Even the remote storage space (12,258 sq. ft.) will be filled by July 1980. In addition, the use of remote storage for Library materials is expensive and servicing the collection puts a severe strain on the Library's already overtaxed budget and staff. A conservative estimate is that it will cost the Library $30,000 a year to operate the remote storage, not including the cost of the initial move into the space.

The proposed Libary Sixth Stack Addition would alleviate the present overcrowded conditions, improve the operating efficiency of the entire Library, and allow the funds now spent on remote storage to be redirected to other urgent Library needs. The project's planned 63,000 NASF would accommodate about 1,050,000 volumes and provide approximately 150 closed reading carrels.

The Library Sixth Stack Addition has been a high priority campus request in each of the last four capital budget requests and has been supported by the State Board of Higher Education. However, the project has been deferred by the General Assembly and the Governor due to insufficient State resources.

The Library Sixth Stack Addition is programmed to contain the following types and amounts of space:

Room Type and USOE Code	NASF in Proposed Addition
Office (310)	500
Reading/Study Rooms (410)	3,300
Stack (420)	59,200
TOTAL	63,000

This project is planned for completion by November, 1982. The total estimated project cost is $8,712,700 of which $8,617,700 will be required for authorization in FY 1981 and the remainder in FY 1982. The estimated total project cost (by budget category) and the amount requested for FY 1981 are as follows:

	Estimated Total Project Cost	Requested for FY 1981	Requested for FY 1982 and Beyond
Basic Building Cost (Including Fixed Equipment and Professional Fees)	$8,494,700	$8,494,700	-0-
Funds to Complete Bond-Eligible Buildings	-0-	-0-	-0-
Equipment	95,000	-0-	$95,000
Utilities	123,000	123,000	-0-
Planning (Included in Basic Building Cost Above)	(357,700)	(357,700)	-0-
TOTAL	$8,712,700	$8,617,700	$95,000

Upon completion of this project, the lease will be terminated for the remote storage facility at 401 Broadway, Urbana.

PILOT TRAINING FACILITY

Estimated Total Project Cost	$480,900
Estimated Bond-Eligible Funds Required in FY 1981.	455,900
Total Non-State Funding for which the Project is Elibible.	-0-
Estimated Non-State Funding.	-0-
Gross Square Feet.	4,500
Net Assignable Square Feet	3,960
Building Efficiency.	88%

This project has been given a high priority by the campus administration because of the badly deteriorated condition of the Facility which this project will replace. The building area now occupied by Pilot Training for its academic program in Aviation was constructed in 1945. The present facility is a lean-to building attached to Hangar #1. This hangar was originally erected in Grady, Arkansas during World War II. It was dismantled and shipped to the University of Illinois-Willard Airport and re-erected. The building has been upgraded (on a temporary basis) and remodeled to furnish minimum facilities, however, these facilities are rapidly deteriorating and need replacement. The walls are poorly insulated, the roof leaks, the heating is poor, and the air conditioning is minimal.

Deterioration due to aging and weather damage has occurred to the point where current educational functions are seriously jeopardized. Instructor personnel are not being protected from leaking structures, and expensive electronic flight simulators ($300,000) are being damaged from moisture and furnace residues. Instructors' and students lives are endangered by the potential for severe electrical shock which could occur from the operation of electrical equipment in an area having water collecting on the floor. The present space is also extremely energy wasteful and must be corrected in consideration of energy conservation.

This small request is intended as a stop-gap measure to meet the Pilot Training Program's most critical space needs. Two additional phases of this project are anticipated for funding in later years.

This first phase project will be of low-cost construction (concrete block with a flat roof) and will provide the following types and amounts of space:

Room Type and USOE Code	NASF in Proposed Project
Instructional Lab. (210)	1,965
Office (310)	1,995
TOTAL	3,960

This project is planned for completion by the Fall of 1981. The total estimated project cost is $480,900 of which $455,900 will be required for authorization in FY 1981 and the remainder in FY 1982. The estimated total cost (by budget category) and the amount requested for FY 1981 are as follows:

	Estimated Total Project Cost	Requested for FY 1981	Requested for FY 1982 and Beyond
Basic Building Cost (Including Fixed Equipment and Professional Fees)	$455,900	$455,900	-0-
Funds to Complete Bond-Eligible Buildings	-0-	-0-	-0-
Equipment	25,000	-0-	$25,000
Utilities	-0-	-0-	-0-
Planning (Included in Basic Building Cost Above)	(32,300)	(32,300)	(-0-)
TOTAL	$480,900	$455,900	$25,000

POLICE AND FIRE STATION

Estimated Total Project Cost	$1,580,400
Estimated Bond-Eligible Funds Required in FY 1981	1,505,400
Total Non-State Funding for which the Project is Eligible	-0-
Estimated Non-State Funding	-0-
Gross Square Feet	13,533
Net Assignable Square Feet	9,530
Building Efficiency	70%

The Fire and Police Station is intended to create new facilities for the Police Department and expanded space for the Fire Department. The building which the Police Department is currently using for its headquarters is an Army barracks type building constructed in 1945. The building is expensive to maintain and is grossly inadequate for police operation both in the quality and the configuration of the space. The effectiveness of the campus security force is greatly hampered by the lack of adequate space. In order to help alleviate the crowded space conditions, the Police Department was assigned space in the nearby Engineering Research Laboratory. The space is primarily basement space which frequently floods, experiences extreme temperature fluctuations, and is poorly arranged.

The new facility will replace the inadequate facilities currently used by the Police Department, make way for the imminent razing of the old structure, and will eliminate the present efficency and coordination problems caused by dispersed and inadequate quarters.

The new facility will also provide space for a sub-station for the University Fire Department. The establishment of a fire station on the south part of campus was recommended in January, 1957, by the National Board of Fire underwriters (and reaffirmed by the recent review--June, 1971, of the University's fire protection facilities, by the Illinois Inspection and Rating Bureau) to provide adequate protection for all buildings on the campus not in reasonable proximity to the existing fire station. Since that recommendation was made, new construction in the south campus area has added considerable urgency to and justification for the facility requested.

The Police and Fire Station is programmed to contain the following types and amounts of space:

Room Type and USOE Code	NASF in Proposed Addition
Office (310, 315, 350)	4,200
Lounge (650, 655)	1,290
Locker Rooms (690)	1,230
Shop Facilities (720)	150
Storage (730)	280
Vehicle Storage (740)	1,000
Other Supporting Facilities (590)	500
Dormitory (910)	880
TOTAL	9,530

This project is planned for completion by the Spring of 1983. The total estimated project cost is $1,580,400 of which $1,505,400 will be required for authorization in FY 1981 and the remainder in FY 1982. The estimated total project cost (by budget category) and the amount requested for FY 1981 are as follows:

	Estimated Total Project Cost	Requested for FY 1981	Requested for FY 1982 and Beyond
Basic Building Cost (Including Fixed Equipment and Professional Fees)	$1,338,800	$1,338,800	-0-
Equipment	75,000	-0-	$75,000
Utilities	166,600	166,600	-0-
Planning (Included in Basic Building Cost Above)	(72,000)	(72,000)	(-0-)
TOTAL	$1,580,400	$1,505,400	$75,000

Upon completion of this project, the Physical Plant Service Building Annex (2,027 NASF) will be vacated by Campus Security, and this 34-year-old building will be razed. Additionally, Campus Security will vacate its presently assigned space in the Engineering Research Laboratory (2,551 NASF), and that space will be reassigned to other units.

Land Acquisition

Life Sciences Teaching Laboratory Land ($150,000)

This request is for funds to acquire the balance of land needed as a site for the proposed Life Sciences Teaching Laboratory. The site for this building is adjacent to the recently completed Medical Sciences Building. The University has been acquiring land in past years to have a site for this building. These funds would complete the property acquisition for this site. This request is for two small parcels of land on Goodwin Avenue. Although the two properties involve only 2,515 square feet of land area, the estimated cost is high because of the present commercial use of the properties.

Willard Airport Land ($84,600)

This request is for funds to reimburse the Foundation for 23 acres of a 68 acre plot that was purchased for Willard Airport expansion. The other 45 acres were funded from federal funds. The amount needed for the 23 acres is $84,600 and it is all needed in FY 1981. Willard Airport will be used for teaching and commerical purposes for the foreseeable future.

Equipment

English Building (Equipment) - ($79,000)

This request is intended to directly support the Phase II remodeling request currently under construction (funded for FY 1979). Since it takes 2 - 2½ years to bid and do the actual construction work on a project of this size, it was apparent that requesting the major portion of the equipment funds should be delayed 1 - 2 fiscal years after the major remodeling project was approved to eliminate the storage and reappropriation problems. This request will be used to purchase audio visual equipment, classroom equipment, and office furniture to support the $1,500,000 remodeling in Phase II. This request ties with the remodeling project to give the Department of English a functional and pleasant environment in which to work. For more information regarding the actual remodeling of the English Building refer to the Major Remodeling section of this request.

Animal Room Improvements - Equipment - ($32,500)

This request supports the Animal Room Improvements project in Electrical Engineering Annex. The major portion of the equipment to be purchased will be stainless steel cat and rodent cages. There will be some general support equipment purchased such as a wet-dry vacuum and storage cabinets. The caging equipment in particular is needed to meet federal guidelines for the safe and humane housing of laboratory animals.

Davenport Hall--Biophysics Equipment - ($80,000)

This request supports the Davenport Hall--Biophysics remodeling project. The major portion of the equipment involves centrifuges, a laminar flow fume hood, bench top growth chambers, and office furniture. This movable equipment allows the Biophysics Division of the Physiology Department to use the remodeled space in an effective manner.

Astronomy Building Equipment - ($33,000)

This request supports the Astronomy Building remodeling project. The major part of the equipment will be telescopes which will be used in Astronomy's instructional program for night sky observing sessions. Office furniture and research equipment items comprise the balance of the equipment needs.

David Kinley Remodeling--Equipment - ($7,500)

This project coincides with the revamping of Room 114, a major lecture room in David Kinley Hall. The basic remodeling of the room is being done to make it possible to use audio-visual methods for instruction. The necessary equipment consists of a motion picture projector, slide projectors, an overhead projector, a lectern and stand, and a screen.

Visual Art Laboratory Equipment - ($82,500)

This request relates to the Visual Arts Laboratory project in the Fine Arts Building. The major part of the equipment will be cinematography cameras and related equipment. The equipment used in this type of instruction is a very important part of the course since the students are evaluated based on their use of the equipment.

Classroom Renovation--Equipment - ($23,000)

This project is a companion request to the upgrading and modification of 36 classrooms over 50 years old. The project consists of purchasing approximately 650 new movable arm chairs to replace only fixed chairs that will be removed. The chairs will be located in Engineering Hall, Altgeld Hall, David Kinley Hall, Mumford Hall and Noyes Laboratory. The acquisition of this equipment is an effort to replace outdated facilities and better accommodate the instructional methods used today.

College of Veterinary Medicine Remodeling--Equipment - ($100,000)

This request supports the College of Veterinary Medicine Remodeling project in the unfinished basement area of the Small Animal Clinic. This request involves the purchase of animal caging and research equipment such as a water still, centrifuges, an analytical balance, and microscopes. This equipment is necessary to allow the remodeled space to be fully utilized upon completion of the remodeling. The caging equipment is particularly needed to meet federal quidelines for the safe and humane housing of laboratory animals.

Metallurgy and Mining Building--Equipment - ($10,000)

This request supports the Department of Metallurgy and Mining project to remodel four rooms supporting the polymer science program. This request basically involves the purchase of a differential thermal analyzer, and x-ray equipment. These equipment items will allow the occupants of the space to use it in an effective manner.

Utilities

Library Sixth Stack Addition - ($123,000)

This request represents the cost for planning and construction of the utility improvements related to the Library Sixth Stack Addition. The project involves additions and/or connections to the electrical, steam, potable water, air conditioning, and storm and sanitary sewer systems. The electrical service is the most extensive utility need since it involves a 4,160 volt delta service requiring approximately 500 lineal feet of duct run, three manholes and 700 lineal feet of high voltage cable. The other utilities require only minor extensions from the existing Library. The total cost of the project has been estimated at $123,000 with all the funds required in FY 1981.

Police and Fire Station - ($166,600)

This request represents the cost for planning and construction of the utility improvements related to the Police and Fire Station. This project will require very special electrical equipment due to the intended use of the building. Over 60 percent of the utility cost will be used for electrical services. The balance of the funds will be used for water, storm sewer and sanitary sewer extensions. The utilities will be extended to the proposed site of the building at the corner of Pennsylvania Avenue and Maryland Drive.

Remodeling and Rehabilitation

English Building - ($1,650,000)

This request represents the third of a multi-phased project to completely renovate the English Building. The renovation program is estimated to cost approximately $4,770,000 and extend one more phase in addition to this phase. After the total remodeling project is completed, the English Building will be for all practical purposes new inside. The remodeling is estimated to cost 50-60% less than construction of a new facility of the same size. The total remodeling program involves a new heating and air conditioning system for the buildng, construction of a new fire rated stair, enclosing two existing stairs, installation of an elevator, additional rest rooms and new plumbing installations, new structural flooring in west half of the building as well as the typical partitioning, lighting and ceiling improvements.

The overall thrust of this project is to remodel the 61,490 NASF and 118,140 GSF English Building, located on the west side of the quadrangle, into an office/classroom building. This project will match the facility with the program to be housed in the facility for the foreseeable future. The English Building was originally constructed as a Women's Building some 75 years ago, with two subsequent additions in 1913 and 1923, to provide a facility to house the home economics and the women's physical education program. The nature of the original building design dictated a need for large rooms which make the current use of building very awkward for accommodating the English Department. The gymnasiums and locker rooms previously used by physical education are inappropriate for any other use without extensive remodeling. The proposed remodeling will give the Department of English adequate classroom and office space in which to conduct its program. The remodeled facility will permit the faculty of the Business and Technical Writing Division of the Department to be located in the same area as other members of the English Department. Until now the consolidation of the English faculty into one location has not been possible due to space limitations.

The phase currently requested involves renovation of the northwest section of the building as well as the west center portion of building on the second and third floors. The remodeling will involve the installation of an elevator and the construction of new structural floors in the areas to be remodeled. The scope of the remodeling in this phase will be substantial, since everything will be new within the outside walls.

The remodeling is justified because the English Building is a permanent building and will provide good service for years to come after remodeling. The remodeling will basically provide office space and instructional areas and will involve remodeling 16,500 NASF. There is an equipment request in FY 1981 for the Phase II currently under construction and there will be an equipment request in FY 1982 to support this Phase III request. Due to the period of time necessary to complete a project of this size, it is better to request equipment funds the year after the remodeling funds are approved.

Library (Main) - ($407,000)

This request involves three different types of work. Two parts of the project involve safety related improvements while the third portion of the project involves doing some studies to determine if it is feasible to undertake a major renovation project in the Library. The planning portion of the project involves a study to determine if it is possible to gain additional usable spaces and to improve traffic patterns by developing additional floors in certain areas of the building. Many of the areas now have unusually high ceilings and it is thought that a considerable amount of additonal space could be gained by constructing additional floor levels to help alleviate the existing crowded conditions in the reading and processing areas of the Library. If this approach appears feasible, it would provide additional space without constructing an addition to the building.

The major thrust of this year's request involves the installation of a fire detection system in the bookstack area of the Main Library. The bookstacks comprise some five acres of floor space (190,970 NASF) distributed over ten levels. The values of the over eight million catalogued and uncatalogued items housed in the stacks, their vulnerability to the hazards of fire, and the tragic academic consequences to the University which would result from the loss of any significant portion of the books is reason enough for requesting this project. However, the added factor of potential loss of life from smoke or fire in the bookstack area is just as significant a reason for undertaking the improvement and should not be disregarded.

The final portion of the project involves the development of a corridor to connect the northwest wing of the building with the east portion of the building. Construction will involve some partition wall changes in the basement as well as heating and air conditioning revisions in the new corridor. The safety aspects of this project fit in with the Urbana campus long range plan of making the major high use buildings as safe as possible for the users of the facility while protecting an extremely valuable resource.

If the study requested as a part of this project indicates that it is feasible to add additional floors in high ceiling areas, there will be future remodeling requests associated with the Main Library.

Space Realignment, Renewal, and Replacement

Animal Room Improvements--Electrical Engineering Annex - ($105,100)

This projcct involves upgrading the existing animal holding facilities in the Electrical Engineering Annex to a level to meet Federal Regulations. Federal grant agencies have threatened to withhold research funds unless our facilities are improved. This is the third of a five-phased program to bring our existing facilities into compliance with the U.S. Department of Health, Education and Welfare standards and regulations governing the humane handling, care, and treatment of laboratory animals.

The work to be done in Electrical Engineering Annex involves remodeling 853 NASF on the first floor. The remodeling will involve modification of the ventilation system, dropping ceilings, installing sinks, partition changes, installing a cage washer and a bottle filler. These improvements will allow the Department of Electrical Engineering to do a better job of caring for the animals while the cage washer and bottle filler will save animal caretaker time. The Urbana campus anticipates that this facility after remodeling will serve the animal holding needs for the Department of Electrical Engineering for a number of years. There is an equipment request associated with this project.

Paraplegic Ramp Improvements - ($72,400)

This project involves the installation of new paraplegic ramps in Mechanical Engineering Building, Woodshop and Foundry Laboratory, Institute of Labor and Industrial Relations Building, and the Student Services Building. The existing means of entrance/exit in all four buildings do not meet current requirements for paraplegic use. The ramps are much to steep, or in the case of the Mechanical Engineering Building, it is necessary for the paraplegic to enter the building through a laboratory which is not a safe situation for paraplegics. These four buildings are heavily used by students making it necessary that the entrances meet Section 504 of the Rehabilitation Act of 1973. This request is a portion of an overall accessibility improvement program at the Urbana campus to make permanent buildings readily accessible to the handicapped. There will be similar requests in future years for this type of improvement at the Urbana-Champaign campus.

Davenport Hall - Biophysics - ($531,200)

This request involves remodeling the space formerly occupied by the Meats Laboratory into laboratory space for the Biophysics Division of the Department of Physiology. This remodeling project would provide space at an excellent location to help alleviate the crowded conditions in the School of Life Sciences. This project would create the core of space needed to develop a Center of Biophysics Research for graduate education.

Additionally, the space on the floor directly above this project will be occupied by a group of scientists from Life Sciences and the College of Agriculture who have a common interest in the study of photosynthesis. The physical location of these two groups will provide meaningful interaction that will be beneficial to both groups of scientists.

Approximately 3,000 NASF would be remodeled into wet laboratory and office space. The work would involve a new floor, partitions, air conditioning, plumbing, lighting and ceiling improvements. This work is planned in conjunction with the major remodeling in Davenport Hall. It was the Urbana campus' original plan to remodel this area as a part of the major renovation of Davenport Hall. Since that request has not been funded, it is necessary to move forward with this request because the Biophysics unit is now using space in Noyes Laboratory currently on loan from Chemistry which has space needs of its own. A separate equipment request in the amount of $80,000 is included in this budget request to properly equip this project.

Krannert Center Performing Arts - Remodeling - ($301,200)

This project involves resolving three serious safety problems and remodeling four different areas of the Krannert Center for Performing Arts. The areas to be improved support Drama, Dance, Scenery and Piano Storage.

The safety items include repairs to smoke/fire doors in both the Festival and Playhouse fly galleries. During a recent test of the sixty-eight doors in the two theaters sixteen of them wouldn't open. When the doors are opened, the hardware fails and falls some 90 feet to the floor below because of inadequate rigging. Heavy duty rigging and hardware must be installed on all the doors before they can operate as the original design intended.

Four sets of double doors between the parking levels and the Krannert Center Theaters swing in toward the lobby areas. Should a sudden evacuation of the building be required, these "lobby" areas could become death traps for patrons, students and staff. These doors should be reversed so they will swing out into the garage structure.

Presently, no railing exist to prevent workers from falling from the edge of the grid to the stage floor approximately 96 feet below. As a part of this project railings will be installed on the grids in both the Festival and Playhouse Theaters.

The remodeling portion of this project includes the removal of the existing wooden floor in the Drama Rehearsal area and installation of a Tarquet dance linoleum over a plywood sub-floor on steel spring supported wood sleepers. The installation of a minimal lighting system would make the space more useful for classroom performance/workshop area for both Dance and Drama. Acoustical treatment of both the Drama Rehearsal area and the Dance Studio must be improved to reduce noise level for instruction to be conducted properly.

This project will provide a storage room with climate control systems in the backstage area of both the Great Hall and the Festival Theater to properly store Steinway Concert Grand pianos. They are presently deteriorating rapidly because of the lack of humidity and temperature control caused by tuning off the ventilation systems to save energy.

Each one of the three largest theaters in the Center do not provide adequate storage. By installing chain link fence in several areas, storage space could be provided adjacent to each of the large theaters.

Additional items of remodeling and safety improvements will be included in future requests.

Astronomy Building--Remodeling - ($202,200)

This project involves the conversion of a large 3,291 NASF open area on the second floor of the Astronomy Building, formerly used for graduate student offices, into private offices for the Office for Computer Services and laboratories for Astronautical research (dark room, library and star chart room, microphotometer room, etc.) and for the Department of Astronomy. The Center for Advanced Computation, for which the building was originally built with Federal funds in 1971, suffered a sever cutback in its Federal funding in 1978. In order to provide better utilization of the space in that builidng and to fullfill a long-recognized need, the Urbana campus moved the Astronomy Department to the Advance Computation Building and moved the remaining units of the old Center for Advanced Computation to the Observatory space which was vacated by Astronomy.

Although the total available space in the Astronomy Building is adequate for Astronomy's needs, several portions of this space (the second floor and the roof) are not currently in useable form. This means that, until the proposed remodeling is accomplished, both the research and teaching efforts of the Department cannot be optimally carried out. For example, those observers who require darkroom facilities and instructors who conduct night sky observing sessions will have to shuttle back and forth between the old Observatory Building and the Astronomy Building. Also, a teaching lab in Noyes Lab and offices in an old house at 1204 W. Oregon, Urbana will have to be retained until adequate replacement facilities can be provided through this project.

The work to be done involves replacing the existing elevated floor (steel panels supported by jacks) with a permanent floor, constructing partitions with doors, installing three windows in the exterior wall, relocating darkroom equipment from the Observatory to the new rooms in this project, and constructing a platform on the roof for a telescope viewing laboratory.

Restroom Accessibility - ($78,600)

This project includes the conversion of old restroom facilities in 10 permanent buildings for accessibility by handicapped students, faculty, employees and/or guests of the University of Illinois--Urbana campus. Work would include the widening of a water closet shelter, installation of grab bars, reswinging of doors, lowering of mirrors and towel dispensers, and in some cases the removal of urinals or other stools to provide access space required. Upon completion of the project 19 restrooms will be converted in buildings that presently have restrooms which are not accessible. These 10 buildings have 159 classrooms and 69 instructional laboratories plus offices, gymnasiums, pools, etc. It is anticipated that additional requests will be made in future years for this type of improvement.

Roger Adams Laboratory Remodeling - ($154,100)

This request involves remodeling 1,200 NASF on the mezzanine C level of Roger Adams Laboratory to develop an office area for Chemical Engineering staff and graduate students. The space currently is not well utilized because it is an open area with no permanent walls. This request involves constructing two concrete block walls, new lighting, painting and central air conditioning. This remodeling will provide additional space to meet the needs of Chemical Engineering. The program has experienced a growth in enrollment since 1971 due to the energy and pollution problems faced by industry. This request is a phase of an overall program to upgrade the space in Roger Adams Laboratory.

Natural History Building - Remodeling - ($90,400)

The existing air conditioning systems that cool four different areas in the north half of the basement of the Natural History Building are approximately 15 years old. The units do not cool the areas adequately and operate inefficiently. Steam lines running through this area have been insulated, but the area becomes most unbearable especially in the Spring and Fall and many of the areas do not have any windows. Plans have been completed to install a chiller and remote condenser and cooler to handle the cooling of the Room 103 complex, Room 104 complex, Room 111 complex and Room 118 complex an area of approximately 3,365 NASF. This type of air conditioning system will reduce energy use and provide a reliable system for cooling laboratories and offices assigned to Geology.

Sprinkler Systems - ($265,000)

This request involves sprinkler protection for the Natural History Building and the Arcade Building. The Natural History Building portion of the project consists of the planning and installing of an overhead sprinkler system for the south portion (55,000 NASF) of the building. This building, which basically consists of Type II construction, exceeds the maximum area limitations for multi-story buildings according to the Chicago Building Code. To comply with this Code, to be consistent with the type of fire protection in this building, and to adequately protect the lives of its occupants, a sprinkler system throughout is required. The north portion (36,000 NASF) of the Natural History Building is already supplied with sprinkler equipment. Therefore, this project will be an extension of the existing north section. The installation will involve plumbing work and minor construction and repair work to run the required piping into each room. The Natural History Building contains many of the instructional laboratories for the School of Life Sciences and houses the Department of Geology. This building is located on the Quadrangle and fits into the Urbana campus long range safety plan to eliminate the safety deficiencies of our permanent buildings.

The Arcade Building has the same type of construction as the Natural History Building and does not meet current codes. This request involves extending the sprinkler system to protect the 7,500 NASF on the second floor (Mathematics Department) and the storage area on the third floor. The Arcade Building is located on Wright Street near Green Street and is considered a permanent campus building.

David Kinley Hall Remodeling--Room 114 - ($259,700)

This project consists of the complete renovation of a 2,537 square foot lecture room in David Kinley Hall. This project is one of our continuous efforts to upgrade the 40-50 year old lecture halls. These facilities are totally outdated in ventilation, heating, lighting, seating, and are inadequate for any audio-visual service. Presently this room has a limited use due to the limited services it can supply.

The remodeling of this room would consist of an air conditioning/heating system, a new ceiling and lights, new floor tile and seats, plus necessary installations and remodeling to provide audio-visual capabilities needed for certain lectures. The air conditioning/heating system modification is necessary to provide temperature controls and ventilation when the audio-visual services are in use. These services require that all doors and windows be closed with black out shades to prevent light from entering the room during a film showing.

Elevator Installations - ($153,400)

This project involves the installation of an elevator in University High School and the modification of a rest room for men and women as well as the construction of a ramp at the south entrance to the building. University High School has four floors containing 26,129 NASF and 41,730 GSF

and houses the laboratory school for the College of Education. The request is a part of an overall program to meet Federal and State laws requiring that all programs be accessible to paraplegic and other handicapped persons. There will be similar requests in future years for elevator installations in the permanent buildings at the Urbana campus.

Elevator Replacement - ($177,300)

The Architecture Building elevator was originally installed in 1927, and is of the single automatic type control with manual controls on the door. The elevator has no automatic leveling devices. The current elevator is most difficult for paraplegics to use. A modern elevator car will be installed with selective-collective controls, automatic leveling system and power door controls for ease of operation by paraplegics. This improvement will allow handicapped individuals easy access to all five floors of the building instead of just the basement floor. This request is part of an overall program to replace obsolete elevators which are inadequate and difficult to maintain.

Roof Replacement - ($535,200)

This project will provide for the replacement of all or a part of the roofs on the following five buildings:

Bevier Hall was constructed in 1956 with large areas of four-ply pitch and gravel roofing over a 2-inch rigid insulation on a metal deck. Due to leaks the insulation has become saturated. The gravel, felts, and insulation should be removed and replaced. As a part of this project, the above items will be removed and replaced with 2 inch insulation, a vapor barrier and a five-ply built-up roof.

Civil Engineering Building Phase I was constructed in 1965. The roofing has deteriorated prematurely, with insulation being saturated in areas which will require complete replacement. This project will replace approximately 152 squares of 1 1/2 inch fiberglass insulation base and 3-15 pound pitch felts with 2-6 inch tapered insulation. A new vapor barrier and five-ply built-up roofing will also be installed. Also new curb flashings and new leads at drains will be included.

Horticulture Field Lab was constructed in 1924 with multiple level combination pitch and gravel flat roofs and slate sloped roofs. The flat roofs were resurfaced in 1954 and the felts are now dried out and absorbing water, with sheathing beginning to rot. This project will include the installation of new plywood over the existing sheathing and the installation of new roofing materials.

The Psychology Building was constructed in 1969-1970. The existing 11,450 square foot four-ply steeped asphalt built-up roof is capped with a white granulated mineral felt. Fish mouthing and blistering have been evident for five years despite past contractor repairs. In addition the fiberglass insulation is again soaked in many areas, and water is beginning to leak into rooms below. Complete removal and replacement of roofing is included as a part of this project.

Kenney Gym was constructed in 1903. The existing cement asbestos shingles are brittle and deteriorating. The asbestos shingles will be replaced with asphalt shingles. The metal valleys, gables, gutters, and apron will also be replaced.

This request is part of an overall program developed to re-roof many of the Urbana campus buildings requiring new roofs. There will be similar requests in future years to re-roof major buildings.

Noyes Laboratory--Remodeling - ($130,900)

This request involves converting a 1,850 NASF area on the third floor of Noyes Laboratory into an office complex for four faculty and twenty-five graduate students in the Division of Physical Chemistry. The project is a portion of an overall plan to convert the space in the west half of Noyes Laboratory into dry laboratory uses, since the wood construction of that half of the building doesn't make acceptable wet laboratory space. The remodeling involves the removing existing walls, installing new partitions, dropped ceiling, lights, floor underlayment, carpeting, (sound control) and air conditioning. This remodeling will convert the present deteriorating laboratory areas into a pleasant area for the theoretical physical chemistry program.

Visual Arts Laboratory - ($141,600)

This project will complete Phase II of the remodeling for the Visual Arts Laboratory. It will provide cinematography facilities, a studio for photography/cinematography, and facilities to introduce photography to freshman art students. Currently, it is impossible to meet the student demand for the courses in this area of study, and the facilities are taxed to the limit by students enrolled in the courses.

Included in the project are construction of new walls, installation of additional power requirements, additional shelving, and revisions to heating and air conditioning. The first phase of this program involving a cost of $162,200 was funded as a part of the FY 1976 Capital Budget and included needed expansion for photographic laboratories. This second phase (6,117 NASF) is to fund the required remodeling for a cinematography Shooting Studio and several small dark rooms for freshmen and faculty in the Fine Arts Building. Major heating and ventilation changes need to be completed for optimal use of space created by remodeling phase I and II. A separate equipment request in the amount of $82,500 is also included in this budget request for equipping the Cinematography Studios and dark rooms.

Library--Safety Improvements - ($123,300)

This project includes the installation of a public address system in the Bookstacks for emergency evacuation in case of fire, and/or tornadoes and for notification of closing times. The bookstacks in the Main Library cover 10 floors or an equivalent of approximately 5 acres of floor space. The process of closing this area on a daily basis or in the case of an emergency without an annunciation system is nearly impossible.

The fire detection equipment for the Library, except the stacks, requires excessive maintenance, has poor annunciation, and is subject to excessive false alarms. This project includes new annunciation, wiring, and replacements of approximately 100 remote batteries with one common battery.

There is neither water supply nor fire hose connections available for use in the event of a fire in the Main Library Stacks. Presently, water could only be obtained by elevating the snorkel for the upper floors. This project is needed to provide funds for installation of a pipe from ground level to the top level with hose connections at each level.

Electrical improvements in the carrels and stacks are needed to reduce hazards such as electrical cords hanging over radiators, and replacement of worn out cords. Also, included is the replacement of older electrical outlets in the stacks which do not fit modern plugs and the installation of additional outlets to avoid the use of extension cords.

Stair Enclosures - ($184,900)

Gregory Hall, a 66,046 NASF and 109,393 GSF building, presently has two dead end corridors with no fire-rated exits. With 33 classrooms, plus heavily used instructional laboratories and offices, this building is one of the most heavily utilized facilities on the campus. As a result, safe exits in the event of a fire are desperately needed.

The project involves the construction of vertical and horizontal compartmentation of the existing stairways with related door closing improvements. As a result of this safety improvement, any fire which might develop would be confined to its area of origin and safe exits at all floor levels would be available. Funds in the amount of $2,450 were provided from the 1967-1969 biennial request under the Protection of Life and Property category to complete planning for this improvement. As a result, project plans and firm cost estimates are complete, and the requested funds are only for actual construction of the safety improvements. This request is part of an overall safety related program to provide adequate means of egress in permanent buildings on the Urbana campus that do not have enclosed stairways.

Bevier Hall Remodeling - ($154,000)

This project includes the installation of a chilled water central air conditioning system in Bevier Hall. At present the building has some window air conditioners and a direct expansion system which cools the fifth floor. The window units are almost all 15 years old and the expansion system is subject to high maintenance, and operational costs. There are currently 10 fan systems that have no air conditioning and 6 with air conditioning.

The first phase of the project will be the most expensive because it includes the extension of the chilled water line to the building, installation of loops and pumps in the basement and the penthouse, and the connection of two fan systems. The highest priority for chilled water cooling are those areas with no air conditioning of any kind. The Library would be the first area to be cooled since this is the only Departmental Library on the campus that has no air conditioning.

Failure to move ahead with a chilled water system will result in more window units, or other direct expansion systems, plus the continued high maintenance of the existing systems. The reduced operating cost and maintenance costs for a chilled water system will offset the initial cost in a very few years. The reduction of electrical load in Bevier Hall would be substantial and would contribute to a total reduction of power demand for the entire University. Future requests will be made to remodel space in Bevier Hall and include the connection of additional fan systems.

Burrill Hall Remodeling - ($74,800)

This project includes the repairs and remodeling required in Rooms 339, 341, and 341A (414 NASF) Burrill Hall for the Department of Microbiology as the result of an explosion. This project entails the extension of utilities to new laboratory benches and cabinetry, and the construction of partitions. In addition electrical services will be extended and repaired. The above repairs would complete improvements necessary to bring the area back up to its original condition.

Steam Distribution Remodeling and Replacement - ($39,200)

This project includes the replacement of some steam tunnel dewatering pumps which have been in use for thirty years. Parts can no longer be purchased and are very costly to manufacture. Work will include ventilation improvements in the tunnel to allow workmen to occupy the tunnel space for longer periods of time when repairs are necessary.

Also included as a part of this project is planning for the future replacement of 1,200 feet of 8-inch steam line which has deteriorated to the point that it must be replaced soon. Funds for the actual replacement will be requested in FY 1983. This is part of a phased program to upgrade the steam distribution system at the Urbana campus.

Fume Hood Improvements - ($33,000)

This request involves improvements to fume hoods and related duct work that allow toxic materials to escape. Duct work must be replaced or repaired and the hoods and fan housings must be made leak proof. The most serious problems have been found in Rooms 157, 260, 350A, 350B, 355, 357, 450 and 450A Noyes Laboratory. This request is part of an overall program to correct fume hood deficiencies in the Urbana campus permanent buildings.

Classroom Renovation - ($126,500)

This project is the first year of a multiphased program to upgrade and modernize a number of the older classrooms on campus. Forty-five percent of the classrooms are over 50 years old and several have not been substantially altered in many years. This phase will remodel 36 rooms in five buildings which are centrally located and heavily used. The buildings included are: Engineering Hall, Mumford Hall, Altgeld Hall, David Kinley Hall and Noyes Laboratory. Eleven of the rooms in Engineering and Altgeld Halls are over 80 years old and all the rooms in this phase were constructed in 1930 or before. The remodeling in these rooms consists of removing fixed tablet arm chairs, installing new tile floors, replacing chalkboards, installing window shades, installing projection screens, and painting the rooms. These modifications represent an effort to replace outdated facilities and better accommodate the instructional methods used today.

Exterior Stair - Handrails - ($52,400)

This request involves the installation of handrails for Engineering Hall, Horticulture Field Laboratory, Labor and Industrial Relations Building, Smith Music Hall, and the Veterinary Medicine Building. OSHA regulations require that wide stairs have handrails, but more importantly during the past three winters these building have had very icy stairs because of limited exposure to the sun during the winter months. This request is a portion of an overall safety program to eliminate safety problems with permanent Urbana campus buildings.

Armory - Security Improvements - ($131,300)

This project will provide security for the building when the Armory Floor (75,000 NASF) is open but the offices are not, so that the ever-increasing incidence of vandalism will be reduced. A turnstile will be installed, locks and hinges will be upgraded, and panic hardware will be replaced as a part of this project. This will allow the upper floors of the Armory to be secured from the Armory Floor making it virtually impossible for vandals to do damage during times when the Armory Floor is in use, but other parts of the building have low occupancy. In addition, permanent bleachers of the fold-away variety will be installed, leaving the existing bleachers, which are costly to set up, to be used for back-up when major events call for more spectator seating. The installation of fold-away bleachers will allow more flexibility on the Armory floor since they can be extended or pushed back depending on the activity. These two improvements will make the security and overall safety of the Armory much easier to attain.

Electrical Modernization - ($39,900)

This request involves grounding electrical outlets in twenty-one research laboratories in the first addition of Morrill Hall. This improvement will provide a safer working area for staff and students by eliminating the chance of an accidental shock caused by faulty grounding. This request is part of an overall safety program to eliminate safety hazards in the Urbana campus permanent buildings. There will be other electrical modernization projects in future years.

College of Veterinary Medicine Remodeling - ($269,600)

This project will provide 3,500 NASF of animal room and research space for the College of Veterinary Medicine in an unfinished area of the basement of the Small Animal Clinic. The research program of the College is not up to par with the quality of its instructional program; one principal reason for this is simply a lack of sufficient research space. This project will create animal room space and three research laboratories at the east end of the unfinished basement. This remodeling will allow the clinicians to do research work in space that is contigious to their normal work area without taking the risk of exposing clients' animals to disease under study by clinicians doing research. Together with the FY 1976 Capital Budget project, which developed the west end of the same wing, this remodeling will complete the transformation of the area into a useful research facility. The work necessary includes upgrading the ventilation system, plumbing, and installing partitions, and lighting. There is an equipment request associated with this project.

Remodeling Cooling Towers - ($130,700)

This project includes the complete replacement of the discharge stacks on the upper deck on two of the three sets of cooling towers at Abbott Power Plant. New fan mounts must also be installed on one tower. Continued deterioration could affect our ability to generate electricity which in turn would cause our electrical power rates to increase rapidly, since we could no longer meet our contract commitments with Illinois Power Company. This request is a part of a phased program to renovate the cooling towers at the Urbana campus.

Institute of Aviation--Remodeling - ($74,400)

This project includes the correction of fire safety hazards in four buildings and the remodeling of one additional building at Willard Airport. These facilities all used by the Institute of Aviation for classrooms and Instructional Laboratories. The safety improvements include the following: smoke and explosion venting; installation of fire rated doors; installation of exterior emergency exit fire stairs; install fire rated ceilings to protect exposed ceiling joists and flooring of second floor classrooms; enclose an interior stairwell. The remodeling of the Hydraulics Laboratory includes the installation of a second floor for about 1,000 NASF.

Fire Alarm and Signal System Replacement - ($33,600)

The present central fire alarm connection to the Children's Research Center is over high resistance telephone cable which periodically causes false alarms, erroneous ground indications at the fire station, and prevents extension of this particular circuit to other buildings in the southwest campus area. The project will include the installation of low resistance fire alarm cable to the Children's Research Center and provide for the possibility of future expansion to other buildings in the area.

The auxiliary fire alarm boxes in the Kenney Gym Annex and David Kinley Hall are over 40 years old and obsolete. As such, replacement parts are in short supply and repair unreliable. Thus, this part of the project will provide new auxiliary fire alarm boxes in the Gym Annex and Kinley Hall.

Auxiliary Fire Alarm boxes in Altgeld Hall are not properly located and there are many isolated areas in the building which would permit a fire to go undetected for some time. Installation of smoke detectors and a partial sprinkler system, are included in this segment of the project.

There will be similar requests in future years to make improvements to other permanent buildings on the Urbana campus.

Remodel Steam Absorption Machines - ($91,400)

The east steam absorption machine in Loomis Laboratory of Physics has been in use approximately 17 years without major repairs or replacement. With approval of this project a rebuilding process would begin including the installation of new pumps, control valves, steam tubes and purge units. This request is a part of an overall plan to update the maintenance program of absorption units within permanent buildings on the Urbana campus. It is anticipated that additional requests will be made in future years.

Magnetic Door Holders - ($49,900)

This project is needed to provide a means of closing fire doors in case of fire. Currently. doors in the corridors of Bevier Hall and the Animal Sciences Laboratory are manually blocked open because of the high traffic volume. The magnetic door holders to be installed will be connected to a smoke detection system and will release the doors in the event of a fire or smoke build-up; thus this project will provide the compartmentation needed to contain the smoke or fire. This is a part of an overall safety program developed to correct safety deficiencies in the permanent buildings on the Urbana campus. There will be similar requests in future years for other buildings with this safety problem.

Install Eyewash and Safety Showers - ($102,400)

This is a safety oriented request involving the installation of eye-washing irrigators and safety showers in thirteen locations in Turner Hall, fifty-eight locations in Burrill Hall, three locations in Morrill Hall and six locations in Bevier Hall. Due to the activities which are conducted in these facilities, Safety showers and/or eyewash irrigators must be installed to bring the facility into compliance with OSHA safety regulations. Additionally, the Urbana campus Office of Environmental Health and Safety pointed these areas out as vulnerable because of dangerous chemicals used in the laboratories. This request is part of an overall program to correct safety deficiencies in the Urbana campus' permanent buildings.

Replace Centrifugal Freon Compressors - ($165,000)

This project provides for the replacement of the air conditioning system in the Law Building. The existing system is a multi compressor system installed in 1956 without consideration for energy conservation. Also, replacement parts are no longer available for repairing the existing system.

A new chilled water system with a larger turn down capability is proposed. The energy savings to be derived through the completion of the above project should result in a net pay back in approximately 8 years.

Metallurgy and Mining Building - ($87,300)

This request involves remodeling in Rooms 209, 211, 213 and 213A Metallurgy and Mining Building (1,772 NASF) for the purpose of making an instruction/research laboratory for polymer science, a unit of the Department of Metallurgy and Mining. The remodeling work involves new underlayment and flooring, drop ceiling and lights in Room 213, painting, and sink and fume hood installation. The laboratory complex will provide adequate space for two new courses in polymer preparation and characterization. The rooms will also be used for the polymer research program which is now being started as part of the materials engineering effort of the College of Engineering. The Metallurgy and Mining Building is a permanent Urbana campus building which is over seventy years old and the space in this request has not been extensively remodeled during the building's existance.

Loomis Laboratory of Physics Remodeling - ($65,000)

This project is needed to provide some privacy for 80 teaching assistants now housed in nine rooms totaling 4,951 NASF. Undergraduate students who want to confer with their instructors are allowed no privacy from the activities of other teaching assistants and students in the room. Part-height walls are to be constructed throughout this area.

Mechanical Engineering Laboratory - ($48,400)

This project involves connecting the drains in the Mechanical Engineering Laboratory to the sanitary sewage system. Currently many of the sinks, floor drains and sump pumps drain directly into the Boneyard Creek just south of the building. Although care is taken by the users, it is possible that a pollutent could be accidently drained into the Boneyard Creek. A second problem which occurs several times a year involves the Creek rising above the Mechanical Engineering Laboratory drains during a rain storm and flooding parts of the building. The occupants of the building attempt to plug these drains during periods of high water, but the plugs have blown out on occasions due to the hydrostatic pressure. This project will eliminate the irritating flooding problem and possible problems from the EPA by accidently polluting the Boneyard Creek.

Site Improvements

Pennsylvania Avenue Street Improvement - ($399,300)

This project was initially listed as Phase III of the original Peabody and Pennsylvania Street Improvements project. However, following the completion of the Intramural-Physical Education Building, the volume of traffic on Pennsylvania Avenue between Goodwin and Sixth Streets has been much higher than anticipated in the original project. Therefore, the original Phase II and III have been interchanged, so that this portion of the total project is now Phase II. Phase I has been completed with funds from the FY 1975 Capital Budget.

This project involves paving and lighting Pennsylvania Avenue from Sixth Street to Goodwin Avenue (approximately 1,700 feet). This portion of Pennsylvania Avenue is presently an oiled dirt road and the maintenance costs are very high. Pennsylvania Avenue is a University-owned street between Fourth Street and Maryland Drive (approximately 2,900 feet). Therefore, the University will have to provide all of the project funds.

Pennsylvania Avenue begins at Fourth Street (the east side of Memorial Stadium) and extends eastward to Route 130 on the southeastern edge of Urbana. The street is on the southern perimeter of the academic campus providing a most important access route to and from the south campus area. Traffic studies indicate that Pennsylvania Avenue is heavily used during the morning and evening hours, proving its importance as a street serving University staff and students. The traffic tapers off during the middle of the day, however, indicating that it is not a major through street for the Champaign-Urbana community.

Campus Landscape Improvements ($50,000)

This project proposes the redevelopment of several areas to reduce maintenance and improve the appearance of the locations. The funds requested this year will be used for two areas. The first is the Gregory Grave Memorial site, located between Altgeld Hall and the Administration Building. Pedestrians have damaged the lawn and plantings in this location. This will be corrected by developing walks and paved areas. The second area is the service drive between Lincoln Hall and Gregory Hall. This project will improve the drive and parking layout. The total cost of these specific landscape improvements is $50,000. A total of $250,000 will be requested in future fiscal years for other landscape improvements. This request is a portion of a program developed to upgrade the most visable and heavily used exterior areas of the Urbana campus.

Intramural Athletic Redevelopment of the Fields ($52,000)

This request will complete the area formerly know as Stadium Terrace. In past years, approximately two-thirds of the Stadium Terrace area has been improved for use as athletic fields. This request is to provide for the regrading, seeding, and drainage improvements of the north one-third of the total area. This work will complete the intramural complex for football, soccer, and softball fields to meet the current demands of the intramural program. This area west of Intramural Physical Education Building could be put to good use since the activity on the existing playfields during the spring and fall months is heavy. The location of this area is ideal and it is the Urbana campus long-range plan to retain this area as a playfield into the foreseeable future.

Planning

Life Sciences Teaching Laboratory - ($601,800)

This project will provide space to teach the basic undergraduate courses of the School of Life Sciences at one location. The facility is intended to be a unified teaching laboratory building designed to encompass laboratory instruction in all areas of the Life Sciences. In addition to providing much needed laboratory space, the facility is programmed for maximum interaction among the laboratory activities of the several Life Sciences Departments, and will provide the opportunity for space consolidation, program coordination, and educational experimentation.

The concept of physical interaction among the Life Science disciplines at the undergraduate laboratory level represents a new and exciting approach to large-scale education of students. It is presently planned to conduct the laboratory instruction portion of approximately 55 separate Life Sciences courses in the new facility. Fruition of this facility would provide the University of Illinois with a unique opportunity for leadership in modern laboratory teaching and would also alleviate the expensive problem of continually remodeling archaic and unsuitable space into wet laboratories for the teaching of Life Sciences.

This project has gained an even greater urgency during the past few years as a result of the tremendous increase in the number of students in the area of Life Sciences, primarily pre-professional students (pre-med., pre-dental, pre-vet., etc.). These students are exerting extraordinary pressure on course enrollments and use of facilities, and from all appearances, this "bulge" will not decrease over the coming years. While Life Sciences enrollment may reach a steady state in the near future, that steady state far exceeds the current potential to provide proper instructional laboratory space for the teaching of Life Sciences to the current majors in this area.

This project is programmed to contain the following types and amounts of space:

Room Type and USOE Code	NASF in Proposed Building	
	Wet	Dry
Classroom (110)	--	3,710
Instructional Laboratory (210,215)	34,890	--
Office (310,315,350)	--	6,680
Animal Quarters (570)	--	720
Greenhouse (580,585)	--	4,000
TOTAL	34,890	15,110

This project will satisfy the most pressing space needs of the School of Life Sciences by providing space for conducting the consolidated instructional program described in the preceding narrative. Based on current enrollment projections for 1985, a future building request (perhaps a second phase to this project) of approximately 30,000 NASF will eventually be needed to fully meet the space requirements of the School of Life Sciences.

It is anticipated that the School of Life Sciences will have the following projected enrollments when this project is completed and fully occupied:

	FTE					Headcount		
	F-S	J-S	Beg Grad	Adv Grad	Total	Beg Grad	Adv Grad	Total
Botany	120	69	14	18	221	17	22	39
Entomology	38	30	15	23	106	19	26	45
Life Sciences	395	244	24	38	701	60	44	104
Microbiology	65	216	34	50	365	18	39	57
Physiology	134	181	34	45	394	38	52	90
Zoology	118	178	20	37	353	27	53	80
	870	918	141	211	2140	179	236	415

Upon completion of this project, Harker Hall (16,720 NASF) will be vacated by Life Sciences, and this 100-year-old building will be razed.

The total planning cost, including the initial steps in construction document development, is estimated to be $532,800. It is anticipated that funds for constructing this building will be included in the FY 1982 capital budget request.

Television Building Addition - ($330,700)

This project will provide replacement space for essentially all units of the Division of Broadcasting at the site of the present Television Building at the corner of Goodwin and Main Streets in Urbana. Completion of this project will allow the razing of four high maintenance buildings and will provide the opportunity for space consolidation and program coordination.

The television and radio stations provide valuable public service to the people of the State of Illinois, reaching more people each week than all of the rest of the University's units combined, at a cost of less than a half-cent per listener-hour. This is the only connection to their state university for many people in Illinois.

Despite the value of these services, the Division of Broadcasting occupies many buildings on campus, none of which were designed for use as broadcasting facilities (aside from the New Studio Addition built in 1970). Thus, this project addresses two critical needs: 1) Providing space of adequate quality and quantity, and 2) centralizing the operations of the Division of Broadcasting for more efficient administration and more economical operation. Additionally, because the Division would be vacating a wing of Gregory Hall on the central campus, there would be a substantial gain of prime space which could be economically reconverted to classrooms and offices.

The existing space occupied by the television station--a former bakery and a former rooming house, are badly deteriorated and require continuing and ineffective maintenance. One exterior wall of the bakery building was recently rebuilt to prevent water leakage on expensive equipment. The roof is under constant repair but leaks continue. The dust level in the bakery building is unacceptably high but cannot be reduced because the dust consists of crumbling plaster, paint dust, and insulation fibers. This dust penetrates expensive videotape machines and causes enormous damage and expense on a continuing basis: videotape operation costs are approximately five times the industry average despite extensive air filtration and dust containment measures undertaken by the department.

Even existing office space at the television building is inadequate. One office must be entered by stepping through a shower and the unit faces frozen water pipes, inadequate heat, and the drafty atmosphere common in frame houses approximately fifty years old.

The Illinois Radio Reading Service (which provides service to the blind and continuous agricultural information to farmers) is housed temporarily in a converted house rejected by several other units. The rapidly growing CATV services unit now occupies space in another converted house which is badly deteriorated. A former portable classroom building (essentially a mobile home), provides office space for a five-person production unit and their office and portable production equipment. This facility has no restrooms and because it is unconnected to the rest of the television building each telephone extension cost $64 per month. Despite these shortcomings it is the best-quality space the television station has.

Housing the several sub-units of the Division of Broadcasting in a single facility would provide substantial operating economies. It is likely there would be a reduction of engineering or operations personnel by at least 2 FTE, a reduction in clerical personnel by 1 FTE, and a reduction in program department support personnel. It may also result in the ability to provide more hours of service because of engineering economies. For example, delivery of radio signals to the common TV/FM microwave site of 1110 W. Main Street requires continuous lease of five lines from the telephone company--an expense which would be eliminated.

Better management of the several subunits would also result. There is now considerable wasted management time due to the necessity of scheduling meetings and planning activities at such places as the Illini Union--midpoint between the television and radio facilities--or at the Director's office. Management attempts to develop cooperative activities between the subunits often fail because the staff members of the subunits do not know each other and many never see each other.

This project is programmed to contain the following types and amounts of space:

Room Type and USOE Code	NASF in Proposed Building
Instructional Lab. (210, 215)	600
Office (310, 315, 350)	10,000
Audiovisual, Radio, TV (530, 535)	10,000
Storage	400
TOTAL	21,000

Upon completion of this project, 11,686 NASF of space will be razed consisting of the following: 501 S. Wright, Champaign (1,801 NASF), Television Building, excluding "New Studio Addition" constructed in 1970 (7,087 NASF), 1110 W. Main, Urbana (1,974 NASF), and the TV Annex (former portable classroom) 824 NASF. Additionally, upon the project's completion 5,653 NASF in the following buildings will be vacated for reassignment to other units: Gregory Hall (4,757 NASF) and 59 E. Armory, Champaign (896 NASF).

Davenport Hall (Remodeling) - ($75,000)

This multi-phased project will involve the renovation of older portions of Davenport Hall following the completion of the Turner Hall Addition. Most of the building is over 75 years old and the area involved has had no major remodeling completed in all those years. This remodeling along with the remodeling requested for Lincoln Hall, will allow for considerable realignment and relocation of academic units within the College of Liberal Arts and Sciences in an effort to provide more efficient and effective use of space. The proposed remodeling/realignment program will allow two former apartment buildings to be vacated and razed to clear the site for construction of the Life Sciences Teaching Laboratory to be requested in FY 1982.

Planning funds are requested in FY 1981 to initiate some preliminary planning (schematic and definitive design plus beginning of working drawing development) in order to master plan this project. The purpose of this preliminary planning is to design the remodeling to the extent necessary to assure that all of the building system and safety items are improved along with the remodeling for the academic programs. The planning should include a study of how the project might be phased. The general intent of this multi-phased project is to develop the outmoded wet laboratory

areas into dry laboratory, office, and classroom space and to establish well-defined traffic patterns. This project will involve partition changes, lighting, air conditioning, an elevator, safety improvements (such as stair enclosure and sprinkler system) and mechanical system improvements. One segment of the initial phase should involve remodeling the east wing. This portion of the remodeling provides space at an excellent location to remodel, since it is vacant and can provide surge space when other portions of the building are remodeled. The total project is expected to be remodeled in three phases over a period of four years and the total cost is estimated to be $3,900,000 ($75,000 for planning and $3,825,000 for the remodeling).

Auditorium (Remodeling) - ($80,000)

This project involves the complete replacement of the domed roof of the auditorium. The building was originally constructed in 1908, prior to the existence of comprehensive building codes. As a result, the facility is in substantial violation of current codes, and flammable materials are common in the structure. In addition, the metal roof dome has deteriorated to the extent that further repairs cannot be made. The gutter sections of this building have also deteriorated to the point that further soldering of joints is useless and only temporary repairs can be made. As a result, water is leaking into the building, causing interior damage to the plastered ceiling and walls. Because of fear that the ceiling might collapse, the O & M Division has begun a practice of making monthly inspections of the structural members so that if necessary, the building could be closed on short notice. The construction will include the complete replacement of all wooden structural members with fireproofed metal framing and non-combustible roof and ceiling material, necessary mechanical and electrical changes, and major renovation of the building, including new seating, to make the space more usable.

The Auditorium has long been a campus landmark and it continues to serve as a site for many campus functions--lectures, student and faculty meetings, musical events, movies, examinations, etc. Except for the roof deficiencies, this historically significant building is basically of sound construction and its value is sufficiently high that razing the structure is not warranted. Also, renovation of the building is considered to be considerably less expensive than constructing equivalent new space.

Planning funds ($80,000) are requested in FY 1981 in order to design the new roof system and related mechanical and electrical changes. The roof replacement and related work is programmed to be requested in FY 1982 and is estimated to cost $800,000. The interior renovation is programmed to be requested in FY 1984 and FY 1985 for $420,000 and $500,000 respectively. The total cost of planning plus three phases of remodeling is $1,795,000.

Engineering Library - ($600,200)

This project will provide library space for all students in the College of Engineering, except for those in the Department of Physics, as well as provide an interdisciplinary research center for information storage and retrieval.

The College of Engineering at Urbana-Champaign is one of the country's largest and most distinguished centers of engineering education and research. With a total enrollment of over 4,000 including 1,200 graduate students, the College's library space is grossly inadequate. The present facility offers seating space for only 99 students and book storage for approximately 80,000 volumes, while required adequate seating space currently approximates over 1,000 stations and the book collection is expected to reach 200,000 volumes by 1985. A substantial portion of the engineering collection has already been transferred to the book stacks in other buildings where they are relatively inaccessible to the engineering students and faculty. Based upon current needs, there is a total space deficiency of 41,000 NASF in the Engineering Library.

In addition to providing the much needed Library facilities, this building is programmed to house a research center on information storage and retrieval that will be jointly operated by the Coordinated Science Laboratory, Graduate School of Library Science, the Department of Computer Science, and the Department of Electrical Engineering. It is the intent of this center to develop sophisticated electronic equipment and methods for storing and retrieving informational materials so that newer methods of information management may be explored and applied to modernize this and other library operations. This proposed facility is programmed to contain the following types and amounts of space:

Room Type and USOE Code	NASF in Proposed Building
Stack (420)	25,000
Reading (410)	26,600
Service and Office (310, 315, 350, 440)	5,300
Office (Information Retrieval) (310, 315, 350)	3,600
Classroon (110)	1,000
Lounge (650)	900
TOTAL	62,400

Upon completion of this project, 4,432 NASF being used for stack collection in Altgeld Hall will be used to relieve the congestion in the Mathematics Library and 12,174 NASF in Engineering Hall will be reassigned to non-library units.

The total planning cost of the proposed building, including the initial efforts in construction document development, is estimated to be $600,200. It is anticipated that funds for constructing this project will be included in the FY 1982 capital budget request.

General University

For FY 1981 the University is requesting remodeling funds to complete important electrical upgrading work in the Roosevelt Road Building. This request is submitted as a General University project since its impact will benefit all three campuses.

Minor Repair and Remodeling - General University

Upgrade Electrical Service Roosevelt Road Building - ($326,700)

The University of Illinois computer system is centralized in the Roosevelt Road Building. This computer system provides the administrative computer capability for all three campuses of the University of Illinois and any power failure for an extended period would seriously disable the University operations. While a standby power system would be the ultimate answer, it is believed that a double source of electrical power supply will be sufficient to ensure suitable continuity of electrical service. At the present time there are two 12,000 volt power distribution lines from two separate high voltage cables coming to the Roosevelt Road Building; however, a bottle neck exists, since there is only one transformer to reduce the voltage to 480 volts. This project will provide a second transformer and complete switch gear that will allow switching from the high voltage cables to the second transformer in the event that the existing transformer fails.

PART IV

THE UNIVERSITY OF ILLINOIS ENERGY PROGRAM

PREFACE

An Energy Program Statement

The University of Illinois uses approximately 4.1 trillion BTU's annually in conducting the normal instruction, research and public service functions on the campuses of the University. Of this very large amount of energy, approximately 1.1 trillion BTU's comes from electricity and 2.9 trillion from petroleum-based products of some kind, largely fuel oil. The cost of fuel oil has risen and is expected to rise at an astounding rate--the projected price for #2 fuel oil in 1983 is ten times greater than the price paid in 1973. Using the current BTU consumption rate of the University for the non-electric portion of the energy needs, and 1983 projected prices, the alternative energy sources, prices and the resultant University budget would be:

Energy Source	Estimated 1983 Cost per Million BTU's	University Budget If Single Source Used
#2 Fuel Oil	$10.02	$29.0 million
Gas (Urbana)	4.11	11.9 million
Illinois Coal	2.59	7.5 million
Western Coal	3.16	9.2 million
Refuse Generated Steam	2.35	6.8 million

The impact of these dramatically different energy costs and of the potential influence on the need for imported oil versus domestic sources creates the demonstrable need for the University to pursue an energy program. After considerable research and analysis, the fundamental objectives are set forth as:

1. To convert a large component of energy generation from the use of fuel oil to an appropriate combination of coal, gas, and refuse generated steam, thereby achieving a marked reduction in cost and a balance of alternative energy sources.

2. To implement a wide variety of conservation programs through both capital improvements and operational procedures to reduce the rate of growth of energy consumption and provide for the more efficient use of energy produced.
3. To assure that all projects for conversion or conservation meet both the spirit and the requirements of air quality standards at the Federal, State and local levels, using the best technology available.
4. To encourage the use of Illinois coal when consistent with the air quality standards and regulations above so as to promote the State's economy, as well as reduce costs to the University.

This program statement forms the underpinning for the FY 1981 Capital Budget request for "Energy Projects."

Program Development

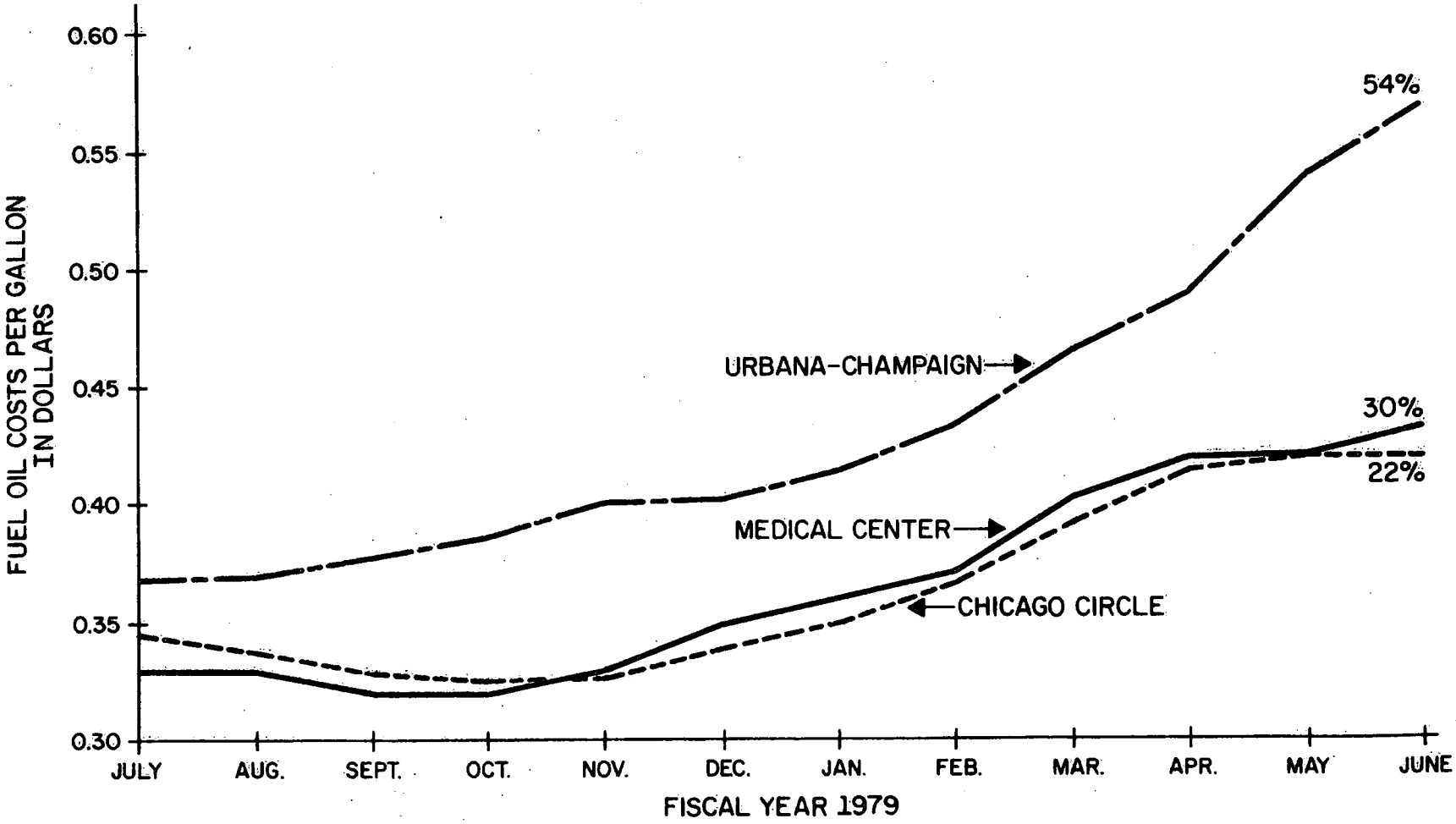
Every American who has purchased gasoline for an automobile or paid the utilities bill for a home or business knows that this nation faces energy-related problems of considerable magnitude. At the risk of over-simplification, the most immediate impact of these energy problems centers upon two issues: the availability of adequate fuel supplies, especially petroleum-based fuels, sufficient to maintain current operations; and the dramatic increase in costs of fuels, again especially those which are petroleum-based.

These two issues must be confronted by the University of Illinois both from the perspective of the day-to-day management of its physical plants and financial resources, and from the perspective of finding longer range solutions which are economically and environmentally sound. The need for immediate action can be demonstrated by examining recent price increase trends for fuel oil used by the University's campuses, as displayed in Figure 1. The sharp rise in fuel oil prices at Urbana-Champaign is particularly notable. The Urbana campus must burn #2 fuel (which is the same as home heating oil) because its oil burners cannot accommodate the lower grade #6 (similar to tar) which is burned at Chicago. When budget planning for FY 1980 was underway during the spring and summer of 1978, it appeared that the average cost for #2 fuel oil for FY 1980 would be approximately $.60 per gallon. The sharp escalations in price experienced during FY 1979 brought the beginning FY 1980 price to $.60, with the price as of mid-August, 1979, at $.66 and an average cost of $.80 per gallon very likely.

At the same time, the Urbana-Champaign campus estimates that a total of 19,480,000 gallons of fuel oil will be burned for FY 1980. Given the $.20 differential in the estimate used for budget planning and the current estimate for average cost of #2 fuel yields a potential budget shortfall of $3,896,000. Given projections for continuing sharp rises in the cost of fuel oil, this significant difference between the price of fuel oil and the funds available for its purchase will only be heightened if immediate steps are not taken to shift energy needs to other less expensive sources and to reduce overall consumption.

FIGURE 1

UNIVERSITY OF ILLINOIS
FY 1979 AVERAGE MONTHLY FUEL OIL COSTS BY CAMPUS



Two types of measures to reduce the impact of rising energy costs must be pursued:

--less costly alternative sources of energy must be identified and brought into operation as quickly as possible;

--energy conservation measures in addition to those already undertaken must be identified and implemented as soon as possible.

The University has already taken steps to identify both alternative fuel options and additional energy conservation projects. When it became apparent during FY 1979 that rising fuel prices were signalling a possible return to conditions similar to the first "energy crisis," campus and university personnel began working on a program which would encompass both alternate fuel possibilities and energy conservation.

During the energy crisis of 1974-75, efforts to meet drastic fuel cost increases revolved around conservation measures and significant increases in operating budget increments for utilities price increases. While these measures are necessary at this time as well, they are <u>not</u> sufficient. Whether from the perspective of internal management or from a broader view of contributing to a state and national goal of reducing dependence upon petroleum-based energy sources, <u>alternatives to the use of petroleum-based fuels must be found</u>.

<u>Alternative Energy Sources</u>

Given the potential shortfall in the utilities budget at Urbana-Champaign, the University has already taken steps to shift some of the fuel load originally programmed for #2 fuel oil to another source: natural gas. Discussions with officials from the Illinois Power Company in the late spring of 1979 indicated that a supply of natural gas would be available for FY 1980 if the Abbott Power Plant could be converted to its use.

It was determined that three boilers at Abbott could be converted to utilize the amounts of gas available, at a cost of approximately $600,000. Faced with a potential shortfall five times as large, the University decided to provide its own funds to proceed with the conversion project. If completed on schedule, the project will be on line by mid-December, 1979,

and is expected to reduce by one-third the amount of #2 fuel oil required for FY 1980 with estimated total savings of approximately $3.0 million.

The gas conversion project at Urbana-Champaign represents a necessary first step in the search for alternative fuel sources, and the University has demonstrated its commitment to the search by funding the project through internal efforts. This must be regarded as only an intermediate step, however, since the availability of natural gas may also become a problem in the future. The present guarantee for increased natural gas availability for Urbana extends for only two years. The search for an economical alternative fuel which is immediately available in good supply must continue.

Refuse Incineration

One possibility for an alternative energy source which would require no immediate capital investment of State funds is now under investigation at both the Medical Center and Urbana-Champaign. That possibility is steam which is generated as a product during the incineration of refuse. In both locations private enterprises have expressed preliminary interest in constructing refuse incinerators which would produce steam as a product of the incineration process. Present estimates indicate that the steam would be available at a cost which would make it attractive as an alternative to oil at both locations. Based on these estimates, the University has expressed preliminary interest in pursuing such a project. If such a project is to be implemented, the University is likely to be included, since the Urbana campus is one of the few local organizations large enough to utilize the amount of steam that would be produced.

Refuse incineration is particularly attractive from an environmental perspective since the incineration process is relatively clean, and it provides a significant alternative to the disposal of solid waste. The latter prospect is of major concern at Urbana-Champaign, where waste disposal is becoming a potentially serious problem for the University as well as the local communities. The University is especially interested in refuse incineration as a method for disposal of waste products which now must be transferred away from the campus. In view of this interest,

the pursuit of refuse incineration through the combined efforts of local communities, the University, and private enterprises will be encouraged.

In addition, if the possibilities for refuse incineration in Chicago are realized and conversion to coal is accomplished, it will be advantageous to physically interconnect the utilities steam tunnels between the Medical Center and Chicago Circle campuses. This interconnection would make steam available to both campuses from a single plant. Again, this interconnection project would also require investment of capital funds from the State.

Coal Conversion

The most readily available economically attractive alternative fuel source which could be made immediately available through a conversion of present physical facilities is coal. No other alternative meets each of these needs to the extent that coal does. Coal has previously been utilized at both the Chicago campuses and at Urbana-Champaign, and could again be burned under present environmental regulations in both locations.

Present City of Chicago statutes stipulate that no coal with sulphur content higher than 1% by weight can be burned within the city limits. This means that so-called "western coal" would have to be utilized, and present projections indicate that supplies of western coal are available at costs which make it a favorable energy source in comparison with the #6 fuel oil presently burned in Chicago.

Environmental regulations established by the Federal Environmental Protection Agency and the Illinois Environmental Protection Agency and Illinois Pollution Control Board govern the burning of coal at Urbana-Champaign. Under present regulations it is possible for the Urbana-Champaign campus to burn Illinois coal while meeting applicable environmental regulations if particulate emissions are properly controlled. This option would provide a low-cost alternative to #2 fuel oil at Urbana-Champaign while making a significant addition to the market for Illinois coal.

Comparative Costs

Given these three alternatives to fuel oil--natural gas, steam generated from refuse, and coal--some comparisons of relative costs can be made. Table 1 presents comparisons of the range of "raw" energy resources which the University can reasonably be expected to utilize in the near future. Estimates are provided for unit costs for Fiscal Years 1980-1983, with the price escalation factor noted in Column 1.

If the present price increases experienced in petroleum-based energy sources continues, Table 1 reveals that energy derived from #2 fuel oil at a cost of $5.80 per million BTU's in FY 1980 will climb to $10.02 per million BTU's by FY 1983. That comparison alone is sufficient to demonstrate the need for alternative energy resources. One need only compare the estimated costs for any of the alternative energy resources in any of the fiscal years presented to see that the University must be able to utilize these sources if it is to retain control over its energy budget.

These cost comparisons can be taken one step further to portray a series of potential energy budget alternatives for the Urbana-Champaign and Chicago power plants. Using the estimated energy costs shown in Table 1, projected energy budget requirements which use different mixes of energy resources are displayed in Tables 2 and 3. The columns labeled FY 1980 on Table 2, for example, show that if #2 oil were the sole source of fuel for the production of steam at Abbott, present estimates for total production requirements would carry a cost of $15,584,000 (19,480,000 gallons of fuel @ $.80 per gallon). If the gas conversion project is completed by December 15, present estimates are that approximately 7 million gallons less fuel oil would be required. The resulting cost of gas plus fuel oil would be $12,612,000. For Chicago, Table 3 shows that the costs for the total amount of oil required for FY 1980 is estimated to be $8.5 million, and is projected to rise to $13.5 million by FY 1983. If conversion to coal could be accomplished by FY 1983, the projected total cost would be reduced to $10.6 million.

It should be stressed that Tables 2 and 3 have been prepared for illustration purposes only. Projection of fuel oil and other enery resource costs is speculative. Nevertheless, the impact of fuel conversion projects can readily be seen.

TABLE 1
ESTIMATED AVERAGE RAW ENERGY COSTS (INPUT)

	Annual Increase	FY 1980	FY 1981	FY 1982	FY 1983
#2 Oil 138,000 BTU/gal	20% yr.	$ .80/gal $ 5.80/10^6BTU	$ .96/gal $ 6.95/10^6BTU	$ 1.15/gal $ 8.35/10^6BTU	$ 1.38/gal $10.02/$10^6$BTU
#6 Oil 150,000 BTU/gal	20% - 1981 15% yr.	$ .52/gal $ 3.47/10^6BTU	$ .62/gal $ 4.16/10^6BTU	$ .72/gal $ 4.78/10^6BTU	$ .83/gal $ 5.50/10^6BTU
Gas (Urbana) 100,000 BTU/100 ft^3	15% yr.	$ .27/therm $ 2.70/10^6BTU	$ .31/therm $ 3.11/10^6BTU	$ .36/therm $ 3.57/10^6BTU	$ .41/therm $ 4.11/10^6BTU
Gas (Chicago) 100,000 BTU/100 $ft.^3$	15% yr.	$ .34/therm $ 3.40/10^6BTU	$ .39/therm $ 3.90/10^6BTU	$ .45/therm $ 4.49/10^6BTU	$ .52/therm $ 5.17/10^6BTU
Coal (ILL) 3% Sulphur Less Capital 10,400 BTU/lb	15% yr.	$35.41/ton $ 1.70/10^6BTU	$40.43/ton $ 1.96/10^6BTU	$46.53/ton $ 2.25/10^6BTU	$53.50/ton $ 2.59/10^6BTU
Coal (Col.) .4% Sulphur Less Capital 9,000BTU/lb	15% yr.	$37.44/ton $ 2.08/10^6BTU	$43.06/ton $ 2.39/10^6BTU	$49.51/ton $ 2.75/10^6BTU	$56.94/ton $ 3.16/10^6BTU
Electricity - Ill. Power (Urbana) 3412 BTU/Kwh	15% yr.	$ .0270/Kwh $ 7.91/10^6BTU	$ .0310/Kwh $ 9.10/10^6BTU	$ .0357/Kwh $10.46/$10^6$BTU	$ .0410/Kwh $12.03/$10^6$BTU
Electricity (Chicago) 3412 BTU/Kwh (Delivered)	15% yr.	$ .041/Kwh $11.97/$10^6$BTU	$ .047/Kwh $13.77/$10^6$BTU	$ .054/Kwh $15.83/$10^6$BTU	$ .062/Kwh $18.20/$10^5$BTU
Refuse Generated Steam (Efficiency Corrected) 5,000 BTU/lb Fixed Tipping Fee + $6.00	Fixed Capital O + M =10%	$17.00/ton $ 1.70/10^6BTU	$18.90/ton $ 1.89/10^6BTU	$21.07/ton $ 2.11/10^6BTU	$23.54/ton $ 2.35/10^6BTU

TABLE 2
ABBOTT POWER PLANT ALTERNATIVES FOR TOTAL STEAM PRODUCTION
(Dollars in Thousands)

	FY 1980		FY 1981		FY 1982		FY 1983			
	Oil	Oil + Gas	Oil	Oil + Gas	Oil	Oil + Gas	Oil	Oil + Gas	*Gas + Ill. Coal	*Gas + Col. Coal
OIL (#2)	$15,584	$ 9,984	$18,701	$ 9,136	$22,441	$10,963	$26,929	$13,156		
GAS (Less Conversion Cost)		2,628		4,275		4,906		5,649	$ 2,825	$ 2,825
COAL (Illinois) (Less Capital Costs)									5,220	
COAL (Colorado) (Less Capital Costs)										6,368
TOTAL	$15,584	$12,612	$18,701	$13,411	$22,441	$15,869	$26,929	$18,805	$ 8,045	$ 9,193

Based on total (Campus + Aux.) load of 19,480,000 gallons of #2 Oil = 2.7×10^{12} BTU/year of which 23% is for auxiliary units (non-State funded to the U. of I.).

*Allows about 25% of load to be provided by gas due to peaking and down time.

FY 1980--oil column shows what current fiscal year costs would be if no gas were available. Oil and gas column assumes a gas conversion by Dec. 15, 1979 which will displace 7 million gallons of oil in FY 1980.

FY 1981--oil + gas column shows a full year of burning "heating" gas allocation; displacing almost 10 million gallons of oil.

FY 1982--continues with the same breakdown, showing continued cost increases.

FY 1983--gas = Illinois coal column estimates that 75% of load will come from the burning of coal--no capital costs are shown. Colorado coal column shows the higher cost of burning low sulphur, western (Colorado) coal.

TABLE 3
TOTAL CHICAGO STEAM PRODUCTION ALTERNATIVES (All Users)
(Dollars in Thousands)

	FY 1980	FY 1981	FY 1982	FY 1983		FY 1984	
	Oil	Oil	Oil	Oil	Oil + Coal	Oil	Oil + Coal
#6 Oil	$8,476	$10,171	$11,696	$13,450	$ 6,725	$15,468	$ 7,734
Western Coal					3,864		4,444
TOTAL	$8,476	$10,171	$11,696	$13,450	$10,589	$15,468	$12,178

Based on constant load of 16,300,000 gallons of #6 fuel oil.

FY 1983 shows a full year of burning western coal which displaces 1/2 of the load (8,150,000 gallons of oil). No capital costs are shown. No coal of more than 1% sulphur can be brought into Chicago.

State supported dollars are 40% of the numbers shown above.

Securing Energy Alternatives

Thus, three alternatives of resource options appear to be within immediate reach if funds are available. These include:

--conversion to natural gas

--use of steam from refuse incineration

--conversion to coal

The first of these options is already being implemented. The second is being examined carefully at both Chicago and Urbana-Champaign. The third will require an investment of additional State funds, and is included in the University's FY 1981 budget request. Table 4 summarizes the projects which will implement energy resource conversion.

Energy Conservation Measures

While it is clear that long range efforts to reduce dependence upon fuel oil must focus on alternative energy sources, the need to reduce consumption of all energy remains a high priority as price escalations continue. A combination of fuel conversion projects and conservation projects which will reduce consumption provides the most effective overall plan to reduce the impact of energy problems.

Each campus has identified a number of remodeling projects which are designed specifically to reduce energy consumption. For each project, an estimate of the amount of energy to be saved has been provided, expressed in millions of BTU's. Given this estimate of energy to be saved, and the estimated cost of energy per million BTU's, an estimate can be made of the length of time it would take to enable the project to "payback" the initial investment of funds in the project.

The cost of energy used in determining payback period was determined by escalating estimated average FY 1980 costs to average FY 1982 costs. This procedure gives a more reasonable estimate of utilities costs likely to be experienced when the projects are completed. Table 5 identifies the procedures used, and the resulting FY 1982 estimated energy costs used for payback estimates.

TABLE 4
FUEL CONVERSION PROJECTS
FY 1981

Campus	Project	Project Cost	Cumulative Total
UC	Abbott Power Plant Coal Conversion	$5,900,000	$ 5,900,000
MC	Retrofit Steam Plant Boilers for Coal Burning	3,176,600	9,076,600
CC	Interconnect Two Chicago Power Plants	3,344,000	12,420,600
UC	Conversion from Oil to Gas - Willard Airport	214,000	12,634,600

TABLE 5
UNIVERSITY OF ILLINOIS
PROJECTION OF FY 1982 FUEL COSTS FOR PAYBACK CALCULATIONS

		Current Unit Price	Estimated FY 1980 Average Unit Price	$/Million BTU's Average FY 1980	Escalation Factors FY80-81	Escalation Factors FY81-82	$/Million BTU's Average FY 1982
Chicago Circle	Electricity	.034	.034	$9.97	15%	15%	$13.19
	Fuel Oil (#6)	.495	.52	3.47	20%	15%	4.80
Medical Center	Electricity	.034	.034	9.97	15%	15%	13.19
	Fuel Oil (#6)	.495	.52	3.47	20%	15%	4.80
Urbana-Champaign	Electricity	.027	.027	7.91	15%	15%	10.55
	Fuel Oil (#2)	.668	.80	5.80	20%	20%	8.31
	Gas	.235	.235	2.28	15%	15%	3.02

This "payback" estimation process is a relatively simplistic one in terms of analyzing individual energy conservation projects. However, the technique is a useful one for the purpose for which it has been used, that of determining the relative ranking of a large number of projects, to determine which projects--as a group--should receive highest priority.

Payback estimates based upon projected FY 1982 utilities costs were obtained for each project, and the projects were then rank ordered on the basis of payback. Projects with payback estimates under five years have been included as the University's Energy Conservation component of the overall Energy Project Request. These represent the highest priority energy conservation projects for the University because they will save the largest number of BTU's for the amount invested. Table 6 provides a list of each of these energy conservation projects with an indication of project cost and estimated payback period. Together, the projects with estimated paybacks under five years total $12.4 million.

Summary: An Energy Program for the University of Illinois

Rapidly increasing energy prices and decreased availability of petroleum-based fuels have combined to present a series of energy-related problems for the University of Illinois at all campuses. The potential exists for a shortfall of serious magnitude in operating funds for utilities in the current year. Without action now, that potential will surely be realized in coming years.

Steps must be taken to provide alternative sources of fuel, so that the University may reduce and eventually eliminate its dependence upon petroleum-based fuels. Further efforts to implement conservation mechanisms to reduce overall energy consumption are mandatory. The University has already begun a program to meet these goals.

Perhaps the most direct way to demonstrate the urgency of pursuing the University's Energy Program is to show graphically the potential impact of not taking steps to reduce consumption through conservation or of securing alternative lower cost energy resources. Figures 2 and 3 provide an indication of the impact of fuel conversion and energy conservation upon a portion of the University's total utilities expenditures.

Table 6
FY 1981 ENERGY CONSERVATION PROJECT PRIORITY LIST

Priority	Campus	Project	Payback	Project Cost	Cumulative Total
1	UC	Animal Room Improvement--Large Animal Clinic	0.33	$ 216,140	$ 216,140
2	UC	Mixed Air Dampers and Controls--36 Buildings	0.69	287,830	503,970
3	UC	Steam Absorption Machine-Control--10 Buildings	0.80	441,375	945,345
4	UC	Digital Computer Lab--Process Cooling with Outside Air	0.95	128,400	1,073,745
5	MC	Building Equipment Automation--Dentistry Building	1.12	157,000	1,230,745
6	MC	Building Equipment Automation--Medical Science Addition	1.20	147,700	1,378,445
7	CC	Light Fixture Lens Replacement--University Hall	1.24	40,700	1,419,145
8	UC	Steam Absorption Machine Control--10 Buildings	1.32	497,550	1,916,695
9	UC	Seal Ventilation Ducts--2 Buildings	1.37	32,100	1,948,795
10	UC	Animal Room Ventilation--3 Buildings	1.65	237,540	2,186,335
11	CC	Modify Control Systems--6 Buildings	1.74	93,500	2,279,835
12	UC	Fume Hoods--8 Buildings	1.89	11,770	2,291,605
13	UC	Ventilation Turndown--Gregory Hall	1.90	9,630	2,301,235
14	MC	Upgrade Heating Controls--4 Buildings	1.91	63,600	2,364,835
15	CC	Zone Radiation--3 Buildings	1.92	48,700	2,413,535
16	UC	Domestic Hot Water Control--2 Buildings	1.94	8,560	2,422,095
17	CC	Heat Reclaim Systems--5 Buildings	2.00	661,400	3,083,495
18	CC	Modify Air Systems--6 Buildings	2.01	338,800	3,422,295
19	MC	Upgrade Fan System--Medical Science Addition	2.14	184,700	3,606,995
20	MC	Building Equipment Automation--Eye and Ear Infirmary	2.19	138,400	3,745,395
21	UC	Reheat Systems--Zone Control--14 Buildings	2.46	257,870	4,003,265
22	UC	Steam Absorption Machine Control--E.E. Building	2.49	64,200	4,067,465
23	UC	Summer-Winter Ventilation Rate--3 Buildings	2.74	25,680	4,093,145
24	UC	Install Air Curtains Above Entryways--3 Buildings	2.74	29,960	4,123,105
25	UC	Weatherstripping and Caulking	2.74	720,110	4,843,215
26	UC	Temperature Control Remodeling and Replacement--17 Buildings	2.74	920,200	5,763,415
27	MC	Building Equipment Automation--Peoria School of Medicine	2.78	82,500	5,845,915
28	MC	Install Heat Recovery Systems--Biological Resources Lab	2.81	110,800	5,956,715
29	CC	Install Variable Air Volume Systems--2 Buildings	2.93	422,700	6,379,415
30	MC	Building Equipment Automation--10 Buildings	3.06	1,099,000	7,478,415
31	MC	Building Equipment Automation--Benjamin Goldberg Center	3.09	91,300	7,569,715
32	UC	Pipe Insulation--Electrical Engineering Building	3.21	20,865	7,590,580
33	UC	Radiation--Zone Control	3.23	66,340	7,656,920
34	UC	Indoor Lighting--7 Buildings	3.23	175,266	7,832,186
35	UC	Reheat Systems--Zone Control--12 Buildings	3.27	192,065	8,024,251
36	UC	HVAC Retrofit	3.29	284,620	8,308,871
37	MC	Building Automation--Phase II, Rockford School of Medicine	3.35	93,500	8,402,371
38	UC	Domestic Hot Water Control--4 Buildings	3.46	14,980	8,417,351
39	UC	Domestic Hot Water Control--7 Buildings	3.54	38,520	8,455,871
40	UC	Radiation--Zone Control--28 Buildings	3.64	328,490	8,784,361
41	UC	Indoor Lighting--2 Buildings	3.79	59,920	8,844,281
42	UC	Indoor Lighting--5 Buildings	3.80	147,874	3,992,155
43	UC	Steam Absorption Machine Control--4 Buildings	3.85	104,325	9,096,480
44	CC	Modify Domestic Hot Water System	4.08	48,700	9,145,180
45	UC	Animal Room Ventilation Improvements--3 Buildings	4.12	507,180	9,652,360
46	UC	Air Conditioning System Revision	4.12	160,500	9,812,860
47	UC	Reheat Systems--Zone Control--4 Buildings	4.23	90,950	9,903,810
48	UC	Indoor Lighting--4 Buildings	4.44	146,483	10,050,293
49	UC	Steam Absorption Machine Control--3 Buildings	4.61	192,600	10,242,893
50	UC	Radiation Zone Control--29 Buildings	4.70	381,990	10,624,883
51	UC	Domestic Hot Water--24 Buildings	4.87	263,220	10,888,103
52	UC	HVAC Retrofit--3 Buildings	4.94	429,070	11,317,173
53	UC	Heating System Remodeling--9 Buildings	4.94	1,070,000	12,387,173

FIGURE 2

POTENTIAL IMPACT OF FUEL CONVERSION AND ENERGY CONSERVATION ON ABBOTT POWER PLANT FUEL EXPENDITURES (STATE FUNDS ONLY)

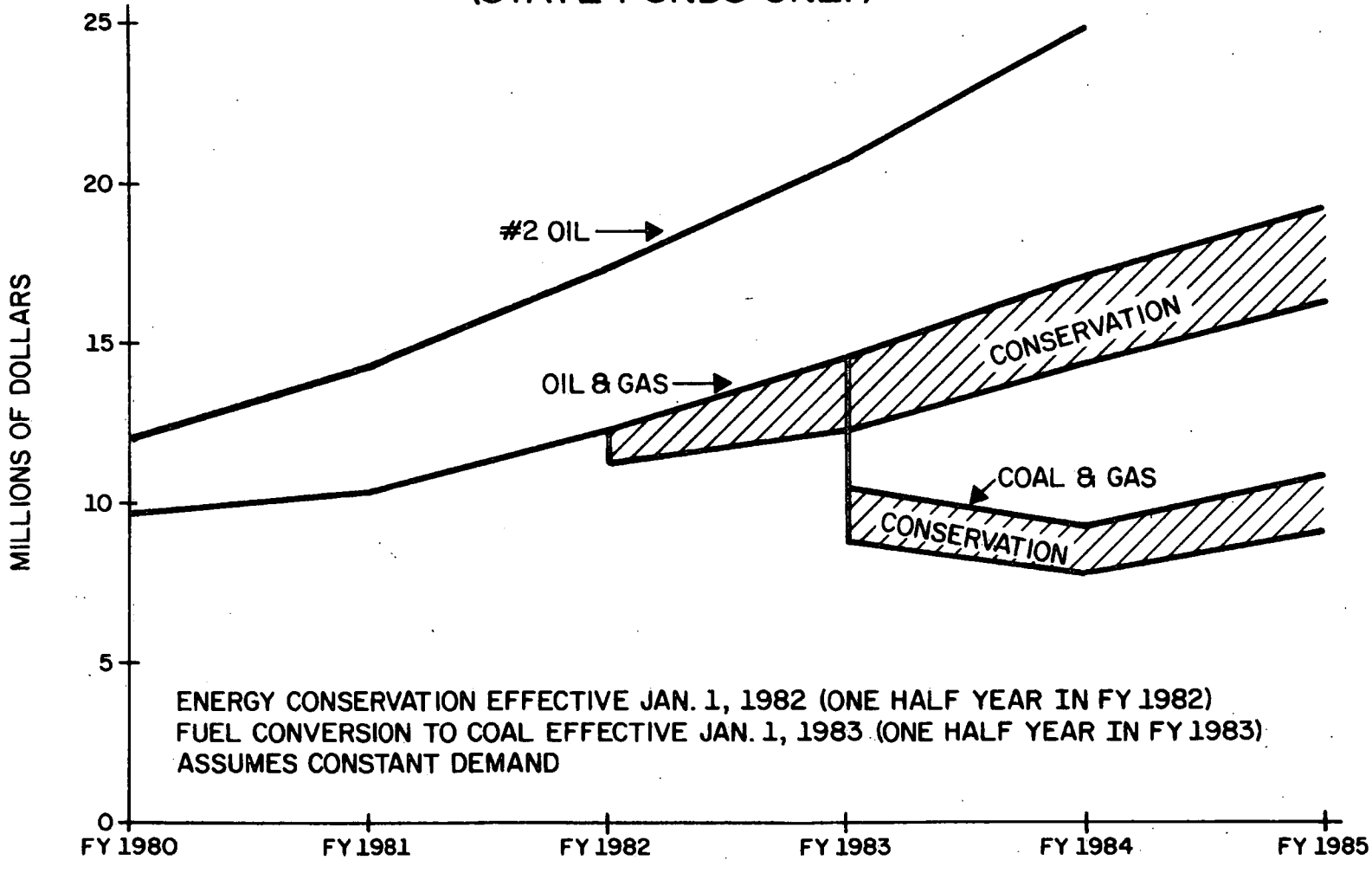


FIGURE 3

POTENTIAL IMPACT OF FUEL CONVERSION AND ENERGY CONSERVATION ON CHICAGO STEAM PLANT FUEL EXPENDITURES (STATE FUNDS ONLY)

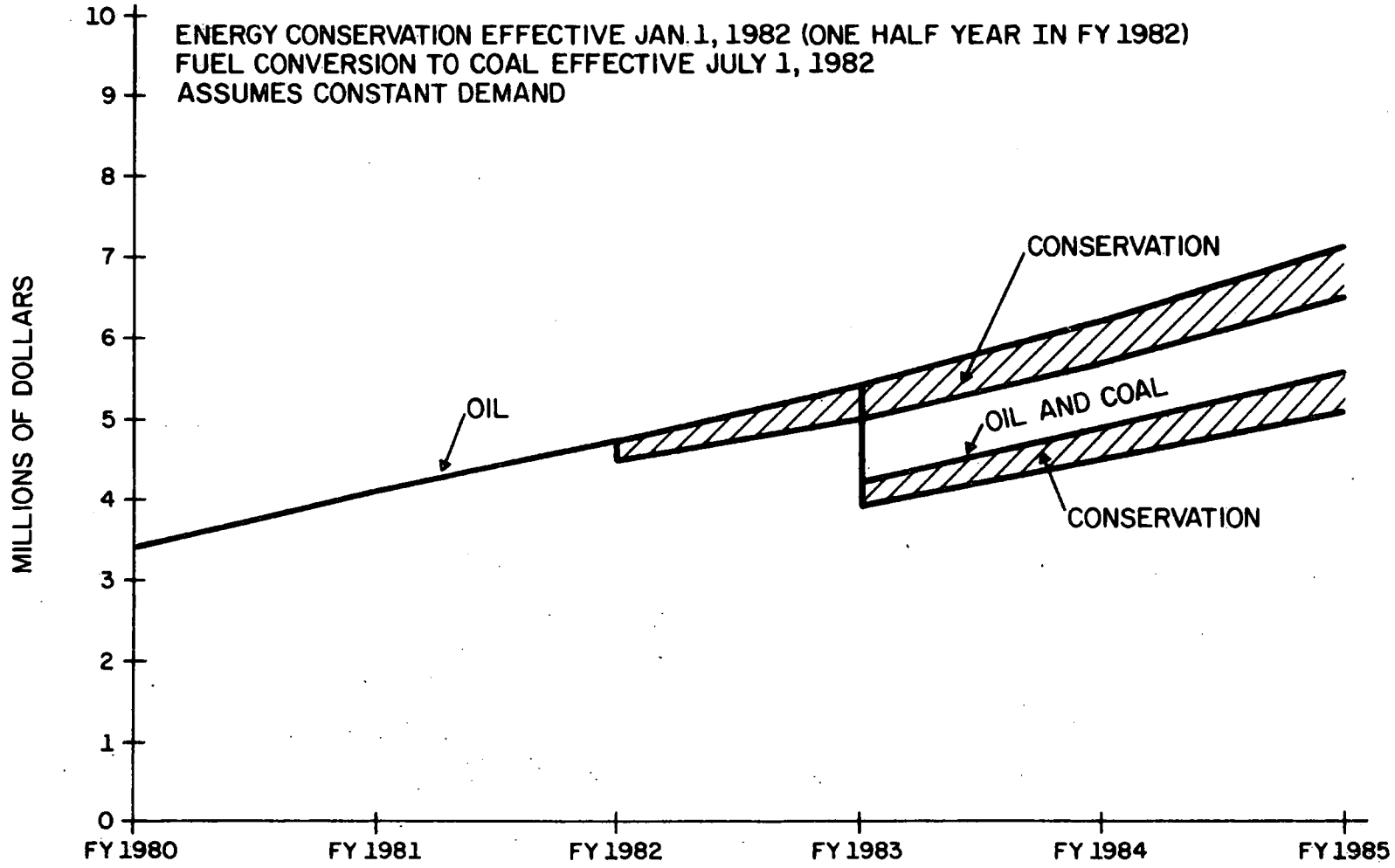


Figure 2 shows data for the Abbott Power Plant at Urbana-Champaign. The figure shows the impact of conversion to gas and the potential impact of conversion to coal and implementation of energy conservation projects. Note that the conservation portion reflects only those projects which will impact energy requirements of the plant. This represents approximately one-half of the total impact of all energy conservation projects. Note also that the data shown apply only to the State-funded portion of total Abbott Plant energy requirements. Auxiliary requirements are not included. Since #2 fuel oil is the most expensive energy source the University is utilizing, the impact of conversion and conservation is seen most dramatically at Urbana-Champaign.

Figure 3 shows similar data for the Chicago Steam Plant. Again, only energy conservation projects which impact the production of energy are included. For Chicago these represent only 25% of the total savings from energy conservation projects.

These two figures demonstrate beyond doubt that pursuit of the University of Illinois Energy Program can have a significant impact upon the ability of the University to contain its funding requirements for energy resources. Further, they demonstrate the potentially devastating results of not acting. The total cost of the fuel conversion and energy conservation projects detailed in the following section is $25,021,773. As seen in Figure 2, if nothing were done to meet rising energy costs, the University could be faced with a fuel oil bill of almost $25,000,000 by FY 1984--for one year's operation! That comparison alone demonstrates the need for additional State funds to make the University's Energy Program fully operational.

Fuel Conversion

Abbott Power Plant Fuel Conversion - ($5,900,000)

A preliminary study was made by the Operation and Maintenance Division staff with regard to the feasibility of converting three boilers back so that they are capable of burning coal. This study indicated that the project would be worthwhile, and consultants were hired (Sargent and Lundy Engineers) to prepare a detailed report. This report was completed in August 1978 and indicated that the three boilers could be changed, the coal and ash handling systems could be upgraded to comply with new regulations, and that Illinois coal of less than 3.5% sulfur could be used. The plant would operate within all of the Illinois Environmental Protection Agency guidelines, and there would be an annual fuel savings of about 2.5 million dollars. The actual savings would vary somewhat based upon the relationship in the escalations between oil and coal fuel prices.

The estimated cost of updating equipment and conversion is 5.5 million dollars and the estimated payback is two to three years. The use of coal would provide a local source of fuel not sensitive to foreign embargoes and of which there is a plentiful supply. Also, this would enhance the market for Illinois coal which should help the economy of the State to some extent.

While there is no energy savings with this project, there would be a reduction in the usage of fuel oil of approximately 10,000,000 gallons per year.

Retrofit Steam Plant Boilers for Coal Burning - ($3,176,600)

Boilers Number 1 through 5 are capable of being reconverted to coal firing. Of these, Boiler No. 1 is the least desirable candidate for reconversion since the coal dump scale and distribution chute, as well as the bottom ash hopper, have been removed. Reconversion requires installation of a new bottom ash hopper and removel and reinstallation of equipment now installed in the location of Boiler No. 1 bottom ash hopper.

The most desirable condidates for reconversion are Boilers Number 4 and 5. These boilers are newer and have slightly modified design. Also, their location at the end of the coal handling system is the most suitable from the standpoint of allowing reuse of space bunker capacity for live storage. Their age in conjunction with their more desirable physical location makes them the most likely candidates for reconversion.

There are two basic criteria for determining the number of boilers to be reconverted to coal firing:

1. Provision for a fallback fuel source which will cover total system requirements in the event of shortages of natural gas or fuel oil.
2. Provision of an alternate source of fuel with lower purchase cost to offset use of higher cost fuels.

The first criteria requires reconversion of one or more boilers sufficient to maximize annual coal usage to offset higher cost natural gas and fuel oil, but does not attempt to cover peak demands with coal firing capability.

The second criteria has been assumed for the basis of this study. The economic evaluation assumes the reconversion of two of the five boilers (Boilers Number 4 and 5). Boilers Number 4 and 5, at an average continuous capacity of 75,000 lbs. steam per hour, are capable of generating approximately 80 percent of the annual steam requirements. This estimate includes the assumption that each of the boilers will go through an annual maintenance shutdown during the summer for one month each.

Reconversion of two boilers is optimum since it allows a high usage of coal for steam generation purposes at minimum capital investment for reconversion equipment. Each additional boiler conversion will add smaller incremental amounts of coal fired steam generation on an annual basis. A third boiler conversion would provide only an additional ten percent coal use to the total annual energy requirements. Also the third boiler use would be for "peaking".

Base loading coal-fired units and peaking with the natural gas or fuel oil fired units presents minimum operation difficulties. Constant or base loading coal-fired units would provide the best service since fluctuating loads, and start up and shutdown periods are difficult as compared to natural gas or fuel oil load fluctuations, start up and shutdowns.

Conversion of a third boiler is not economically or operationally attractive.

The recommended arrangement is for reconversion of Boilers Number 4 and 5 to coal firing.

Interconnect the Two Chicago Campuses' Power Plants - ($3,344,000)

This project is to provide for a physical interconnection between the power plants of the Medical Center and Chicago Circle. The distance between the plants is approximately eight city blocks in a straight line due east from the Medical Center.

The installation, in direct buried conduit, is to pass through Urban Renewal property now vacant and under city streets.

The Medical Center Steam Plant would supply energy to the Chicago Circle High Temperature Water (HWT) system during May, June, July and August, when the Chicago Circle's high temperature water system loads are less than the capability of one of the present HTW Plant units.

Willard Airport--Conversion From Oil to Natural Gas - (214,000)

This project provides for converting or replacing a total of 51 oil fired furnaces and heaters to burn natural gas and the removal of 30 oil storage tanks. The local utility company will install gas service piping and 17 meter settings.

TABLE 7
CHICAGO CIRCLE ENERGY CONSERVATION PROJECTS

Project	Estimated Cost	BTU's Saved/Yr. (in Millions)	Payback Estimate (Yrs.)
Light Fixture Lens Replacement--University Hall	$ 40,700	2,494.2	1.24
Modify Control Systems--6 Buildings	93,500	5,993.5	1.74
Zone Radiation--3 Buildings	48,700	2,814.2	1.92
Heat Reclaim Systems--5 Buildings	661,400	36,795.8	2.00
Modify Air Systems--6 Buildings	338,800	18,775.0	2.01
Install Variable Air Volume Systems--2 Buildings	422,700	16,042.6	2.93
Modify Domestic Hot Water Systems--4 Buildings	48,700	2,490.0	4.08
TOTAL	$1,654,500	85,405.3	

Energy Conservation - Chicago Circle

Light Fixture Lens Replacement--University Hall - ($40,700)

This project involves disconnecting ballasts in the two fixtures over the storage walls and replacing the milky lenses with acrylic lenses (8 per office) in 508 University Hall Offices. This will effect an energy reduction while raising the light levels at the desk areas from 44 to 60 footcandles.

Modify Control Systems--6 Buildings - ($93,500)

This project consists of the replacement and/or rehabilitation of existing temperature control devices on the air handling equipment of six Chicago Circle campus buildings.

The buildings are University Hall, Science and Engineering Laboratories, Library, Behavioral Sciences, Science and Engineering South, and Science and Engineering Offices.

This "fine-tuning" of controls permits the operation of air systems in their most efficient mode, and thereby provides energy savings.

Zone Radiation--3 Buildings - ($48,700)

This project consists of modifying the hot water piping systems to the existing finned tube radiation systems located in three Chicago Circle campus buildings.

The buildings are University Hall, Library, and Science and Engineering Offices.

The work requires the separation of each floor's distribution piping and controls into zones of radiation which would respond only to that zone's requirements rather than responding to the building as one zone.

Heat Reclaim Systems--5 Buildings - ($661,400)

This project consists of the installation of a supplemental heating coil in each of the exhaust discharges of the air handling systems located in 5 Chicago Circle campus buildings.

The buildings are Science and Engineering Laboratories, Library, Behavioral Sciences, Science and Engineering South, and Physical Education.

The proposed supplemental coils would be interconnected to coils located in the fresh air intakes of all the associated supply air handling units.

Through the use of such "Run-Around" heat recovery systems, heat is extracted from the exhaust air and used to preheat the fresh air entering each air unit.

Modify Air Systems--6 Buildings - ($338,800)

This project consists of modifying the components located in or on various air handling systems of six Chicago Circle campus buildings.

The buildings are University Hall, Lecture Center, Library, Services Building, Architecture and Art, and the Science and Engineering Offices.

Included are such modifications as providing two speed motors on fans to operate the air system at a lower volume in the winter; control apparatus at the inlets to the primary fans involved to control the volume of air being circulated through the systems; and revisions to the discharge duct-work of systems to provide more efficient operation.

Install Variable Air Volume Systems--2 Buildings - ($422,700)

This project consists of modifying the existing air distribution system equipment in two Chicago Circle campus buildings. The buildings are Science and Engineering Laboratories and Architecture and Art.

The existing primary air distribution systems located in the two buildings are called "dual duct", meaning the system provides a hot and cold air duct to each room or zone of the building.

The modification consists of the changeout of the terminal devices or "mixing boxes", where hot and cold air is presently blended, to units which instead use only the cold air. Thus the "blending" of room air to temper the final temperature of air entering each room or zone could be achieved. This project would eliminate the need for hot air and the energy presently used to heat it.

Modify Domestic Hot Water System--4 Buildings - ($48,700)

This project consists of modifying the method of supplying domestic hot water to four Chicago Circle campus buildings. The buildings are Science and Engineering Laboratories, Library, Services, and Architecture and Art.

Several methods are proposed to supply the needs of hot water to these buildings, primarily in the summer when total building-heat requirements are low. Included are interconnection between the Science and Engineering Laboratories East and West; interconnection and installation of a supplemental electrical hot water heater in the Library; and the installation of an electric hot water heater in the Services Building and in the Architecture and Art Building.

TABLE 8
MEDICAL CENTER ENERGY CONSERVATION PROJECTS

Project	Estimated Cost	BTU's Saved/Yr. (in Millions)	Payback Estimate (Yrs.)
Building Equipment Automation--Dentistry Building	$ 157,000	15,634.1	1.12
Building Equipment Automation--Medical Science Addition	147,700	13,742.6	1.20
Upgrade Heating Controls--4 Buildings	63,600	3,700.0	1.91
Upgrade Fan System--Medical Science Addition	184,700	9,619.8	2.14
Building Equipment Automation--Eye and Ear Infirmary	138,400	7,019.0	2.19
Building Equipment Automation--Peoria School of Medicine	82,500	3,301.1	2.78
Install Heat Recovery Systems--Biological Resources Lab	110,800	4,385.3	2.81
Building Equipment Automation--10 Buildings	1,099,000	40,000.0	3.06
Building Equipment Automation--Benjamin Goldberg Center	91,300	3,285.0	3.09
Building Equipment Automation--Phase II, RSM	93,500	3,100.0	3.35
TOTAL	$2,168,500	103,786.9	

Energy Conservation -- Medical Center

Building Equipment Automation--College of Dentistry Building - ($157,000)

This project represents a part of a total program which would ultimately convert many of the present manually operated mechanical equipment systems to an automatically operated type controlled from a remote location.

The installation will include all terminal points, data gathering field cabinets, all electrical and pipefitting work, and all system interfaces to be operated from a remote base.

Building Equipment Automation--Medical Sciences Addition - ($147,700)

This project represents a part of a total program which would ultimately convert many of the present manually operated mechanical equipment systems to an automatically operated type controlled from a remote location.

The installation will include all terminal points, data gathering field cabinets, all electrical and pipefitting work, and all system interfaces to be operated from a remote base.

Upgrade Heating Controls--4 Buildings - ($63,600)

The buildings include the Eye and Ear Infirmary, College of Nursing Laboratory, College of Nursing, and the College of Dentistry.

The "fine-tuning" of temperature controls permits the operation of air systems in their most efficient mode which provides for energy saving.

Upgrade Fan System--Medical Sciences Addition - ($184,700)

This project consists of the replacement and/or rehabilitation of the existing air handling equipment located in the building fan rooms.

The work will include the replacement of the existing fan units with units of higher operating efficiency, the modifications of temperature control systems and the replacement of air filter and heating coil units.

Building Equipment Automation--Eye and Ear Infirmary - ($138,400)

This project represents a part of a total program which would ultimately convert many of the present manually operated mechanical equipment systems to an automatically operated type controlled from a remote location.

The installation will include all terminal points, data gathering field cabinets, all electrical and pipefitting work, and all system interfaces to be operated from a remote base.

Building Equipment Automation--Peoria School of Medicine - ($82,500)

This project represents a part of a total program which would ultimately convert many of the present manually operated mechanical equipment systems to an automatically operated type controlled from a remote location.

The installation will include all terminal points, data gathering field cabinets, all electrical and pipefitting work, and all system interfaces to be operated from a remote base.

Install Heat Recovery System--Biological Resources Laboratory - ($110,800)

This project consists of the installation of a supplemental heating coil in each of the exhaust discharges of the air handling systems located in the building.

The supplemental coil will be interconnected to other supplemental coils located in the fresh air intake of all the supply air handling units.

Through the use of "Run-Around" heat recovery systems, heat is extracted from the exhaust air and used to preheat the fresh air entering each air unit.

Building Equipment Automation--10 Buildings - ($1,099,000)

This project represents a part of a total program which would untimately convert many of the present manually operated mechanical equipment systems to an automatically operated type, controlled from a remote location.

The installation will include all terminal points, data gathering field cabinets, all electrical and pipefitting work and all system interfaces to be operated from a remote base.

This project will expand the system to the following ten buildings:

AOB Annex	1919 W. Taylor Unit
Research and Library Unit	Hospital Addition
FUDMP	College of Pharmacy
SUDMP	Biological Resources Lab
General Hospital	Neuropsychiatric Institute

Building Equipment Automation--Benjamin Goldberg Research Center - ($91,300)

This project represents a part of a total program which would ultimately convert many of the present manually operated mechanical equipment systems to an automatically operated type controlled from a remote location.

The installation will include all terminal points, data gathering field cabinets, all electrical and pipefitting work, and all system interfaces to be operated from a remote base.

Building Equipment Automation--Rockford School of Medicine - ($93,500)

This project represents a part of a total program which would ultimately convert many of the present manually operated mechanical equipment systems to an automatically operated type controlled from a remote location.

The installation will include all terminal points, data gathering field cabinets, all electrical and pipefitting work, and all system interfaces to be operated from a remote base.

TABLE 9
URBANA-CHAMPAIGN ENERGY CONSERVATION PROJECTS

Project	Estimated Cost	BTU's Saved/Yr. (in Millions)	Payback Estimate (Yrs.)
Animal Room Improvements--Large Animal Clinic	$ 216,140	112,220.0	.33
Mixed Air Dampers and Controls--36 Buildings	287,830	71,733.3	.69
Steam Absorption Machine Control--10 Buildings	441,375	94,006.0	.80
Digital Computer Lab--Process Cooling with Outside Air	128,400	23,037.0	.95
Steam Absorption Machine Control--10 Buildings	497,550	64,625.0	1.32
Seal Ventilation Ducts--2 Buildings	32,100	4,000.0	1.37
Animal Room Ventilation--3 Buildings	237,540	24,600.0	1.65
Fume Hoods--8 Buildings	11,770	1,066.0	1.89
Ventilation Turndown--Gregory Hall	9,630	866.0	1.90
Domestic Hot Water Control--2 Buildings	8,560	752.8	1.94
Reheat Systems-Zone Control--14 Buildings	257,870	17,949.4	2.46
Steam Absorption Machine Control--E.E. Building	64,200	4,400.0	2.49
Summer-Winter Ventilation Rate--3 Buildings	25,680	1,600.0	2.74
Install Air Curtains Above Entryways--3 Buildings	29,960	1,866.0	2.74
Weatherstripping and Caulking	720,110	44,860.0	2.74
Temperature Control Remodeling and Replacement--17 Buildings	920,200	57,333.3	2.74
Pipe Insulation--Electrical Engineering Building	20,865	1,111.1	3.21
Radiation-Zone Control	66,340	3,510.6	3.23
Indoor Lighting--7 Buildings	175,266	5,140.0	3.23
Reheat Systems-Zone Control--12 Buildings	192,065	10,043.1	3.27
HVAC Retrofit	284,620	14,770.0	3.29
Domestic Hot Water Control--4 Buildings	14,980	740.2	3.46
Domestic Hot Water Control--7 Buildings	38,520	1,857.9	3.54
Radiation-Zone Control--28 Buildings	328,490	15,405.8	3.64
Indoor Lighting--2 Buildings	59,920	1,500.0	3.79
Indoor Lighting--5 Buildings	147,874	3,690.0	3.80
Steam Absorption Machine Control--4 Buildings	104,325	4,631.0	3.85
Animal Room Ventilation Improvements--3 Buildings	507,180	21,066.7	4.12
Air Conditioning System Revision	160,500	6,600.0	4.12
Reheat Systems-Zone Control--4 Buildings	90,950	3,672.9	4.23
Indoor Lighting--4 Buildings	146,483	3,130.0	4.44
Steam Absorption Machine Control--3 Buildings	192,600	7,139.0	4.61
Radiation Zone Control--29 Buildings	381,990	13,882.0	4.70
Domestic Hot Water--24 Buildings	263,220	9,245.0	4.87
HVAC Retrofit--3 Buildings	429,070	14,850.0	4.94
Heating System Remodeling--9 Buildings	1,070,000	37,030.0	4.94
TOTAL	$8,564,173	703,930.1	

Energy Conservation - Urbana-Champaign

Animal Room Ventilation Improvements - ($216,140)

The use of 100 percent outside air in ventilating animal room spaces in one building requires large energy expenditures to maintain indoor conditions. This project will provide for the installation of thermal energy recovery devices which can reclaim up to 70 percent of the energy required for each fan system.

The work will be performed in the following building:

Large Animal Clinic

Mixed Air, Dampers and Controls - ($287,830)

This project includes the replacement of dampers, damper seals, controls, rebuilding of valves and controls, and the installation of valves and controls in 36 buildings to reduce the steam used to heat the ventilation air for the buildings.

The work will be performed in the following buildings:

Administration Building
Armory
Band Building
Burnsides Research Laboratory
Children's Research Center
Civil Engineering Building
Commerce West
Coordinated Science Laboratory
Digital Computer Laboratory
Education Building
Electrical Engineering Building
Art and Design Building
Krannert Art Museum
Institute of Labor and Industrial Relations
Library
Materials Research Laboratory
Morrill Hall
Natural Resource Studies Annex
Loomis Laboratory of Physics
Physical Plant Service Building
Psychology Laboratory
University Press
Rehabilitation Center
Turner Hall
Veterinary Medicine Complex
Water Resources Building
Burrill Hall
Foreign Languages Building
Medical Sciences Building
Law Building
Animal Sciences Laboratory
Smith Memorial Hall
Gregory Hall
Altgeld Hall
Auditorium
Bevier Hall
IMPE

Steam Absorption Machine--Control - ($441,375)

This project includes the installation of automatic steam controls and valves on steam absorption machines in ten buildings to reduce the amount of steam used to air condition the buildings.

The work will be performed in the following buildings:

Commerce West
Roger Adams Laboratory
Art and Design Building
Library
Materials Research Laboratory
Student-Staff Air Conditioning Center
Turner Hall
Veterinary Medicine Complex
Electrical Engineering Annex
IMPE

Digital Computer Laboratory Process Cooling with Outside Air Coil - ($128,400)

This project will install coils and piping which will interface and supplement process cooling during the winter months.

Steam Absorption Machine--Control - ($497,550)

This project includes the installation of automatic steam controls and valves on steam absorption machines in ten buildings to reduce the amount of steam used to aid condition the buildings.

The work will be performed in the following buildings:

Administration Building
Civil Engineering Building
Coordinated Science Laboratory
Education Building
Library Air Conditioning Center
Morrill Hall
Natural Resource Studies Annex
Loomis Laboratory of Physics
University Press

Seal Ventilation Ducts - ($32,100)

This project provides for sealing ventilation ducts to redirect excessive system air losses to occupied space and allow reducing air flow rates accordingly. Historically, ducts in these buildings have had extreme leakage evidenced by noise and dirt deposits. Additionally, ventilation rates to laboratories and offices were in the upper range of acceptance and considered excessive.

The work will be performed in the following buildings:

Coordinated Science Laboratory
Speech and Hearing Clinic

Animal Room Ventilation Improvements - ($237,540)

The use of 100 percent outside air in ventilating animal room spaces in three buildings requires large energy expenditures to maintain indoor conditions. This project will provide for the installation of thermal energy recovery devices which can reclaim up to 70 percent of the energy required for each fan system.

The work will be performed in the following buildings:

Psychology Laboratory
College of Veterinary Medicine and Annex
Morrill Hall

Fume Hoods - ($11,770)

Continuous operation of fume hoods during unused periods or for volatile storage could be supported with lower exhaust rates. Identifying the funds required to effect two-speed operation will require a survey of usage and capacities and labeling of those used for storage. The cost of conditioned air exhasted by an average fume hood annually is approximately $1,000 per year, reduced vent rates on those used for storage will reduce energy requirements.

Survey fume hoods, identify those used as volatile storage and idenify funds to reduce vent rate:

Building	Number of Hoods
Roger Adams Laboratory	316
Materials Research Laboratory	45
Noyes Laboratory	124
Loomis Laboratory of Physics	13
Natural History Building	12
Burrill Hall	57
Morrill Hall	70
Turner Hall and Addition	67

Ventilation Turndown - ($9,630)

The ventilation rate in Gregory Hall is excessive for office-classroom use and causes air noises that prevent quality recording in the WILL radio studio. The work includes reducing fan speeds and rebalancing air flows to all rooms.

Domestic Hot Water--Control - ($8,560)

This project includes the installation of instantaneous water heaters, controls, pumps, and the removal of hot water storage tanks to reduce the steam used by the domestic hot water systems in two buildings.

The work will be performed in the following buildings:

Loomis Laboratory of Physics
Morrill Hall

Reheat Systems--Zone Control - ($257,870)

This project is to reduce the steam used by the reheat systems located in the ventilation systems of 14 ventilated buildings. The project includes the installation of valves and controls to isolate the systems by zones and to shut off the converters and pumps at a predetermined outside and space temperature.

The work will be performed in the following buildings:

Burnsides Research Laboratory
Civil Engineering Building
University Press
Veterinary Medicine Complex
Water Resources Building
Foreign Languages Building
Children's Research Center
Materials Research Laboratory
Natural Resource Studies Annex
Rehabilitation Center
Medical Sciences Building
Law Building
Animal Science Laboratory
Smith Memorial Hall

Steam Absorption Machine--Control - ($64,200)

This project includes the installation of automatic steam controls and valves on steam absorption machine in one building to reduce the amount of steam used to air condition the building.

The work will be performed in the following building:

Electrical Engineering

Summer-Winter Ventilation Rate - ($25,680)

This project will provide the capability to operate fan systems at lower ventilation rates during the heating season. Savings will result from a reduction of outside air which requires heating prior to delivery to the building space.

The work will be performed in the following buildings:

Psychology Laboratory
Law Building
Music Building

Install Air Curtains Above Entryways - ($29,960)

A similar heating problem exists in each of the listed buildings due to location of entryways relative to prevailing wind direction. This change installs non-fixed air curtains about various entryways to reduce infiltration and resulting structural heat loss.

The work will be performed in the following buildings:

Library
Institute of Labor and Industrial Relations
Armory

Weatherstripping and Caulking - ($720,110)

This project will decrease infiltration/exfiltration rates on buildings with loose fitting operable windows.

It will involve the addition of caulking to the upper frame and sash, and "wood-felt" strips to the lower sash frame.

This project applies to all HVAC buildings with operable windows not accomplished to date (June 1979).

Temperature Control Remodeling and Replacement - ($920,200)

This project will replace the existing damper controls in 17 buildings. The controls presently in these buildings have, through deterioration over the years, become inefficient and obsolete. New sensors and signaling type controls will be installed to improve the ability to control space temperatures in these buildings.

The work will be performed in the following buildings:

Roger Adams Laboratory
Armory
Auditorium
Harding Band
Library
Gregory Hall
Illini Hall
University Press
Smith Memorial Hall
Talbot Laboratory
Chemistry Annex
Bevier Hall
Water Resources Building
Morrill Hall
Animal Science Laboratory
College of Veterinary Medicine
Noyes Laboratory

Pipe Insulation - ($20,865)

This project includes the insulation of hot surfaces throughout the building, such as steam and condensate lines from the building entrance to zone valves, hot surfaces on converters and steam absorption machines, and exposed piping throughout the building to prevent heat from escaping through an uncontrolled source in the Electrical Engineering Building.

Radiation--Zone Control - ($66,340)

This project includes the installation of normally closed valves on zoned mains and convertors, pump controllers, outside sensors, and space controllers to reduce the steam used by the radiation systems in seven buildings.

The work will be performed in the following buildings:

Harding Band Building
Digital Computer Laboratory
Art and Design and Krannert Art Museum
Materials Research Laboratory
Astronomy Building
Aero Lab A and Brake Shoe Laboratory
Chemistry Annex

Indoor Lighting - ($175,266)

This request is for changeout of approximately 2,750 incandescent fixtures in the campus buildings listed below with replacement fluorescent lighting.

Noyes Laboratory
Loomis Lab of Physics
Chemistry Annex
Burrill Hall
Lincoln Hall
David Kinley Hall
Vivarium

Reheat Systems--Zone Control - ($192,065)

This project is to reduce the steam used by the reheat systems located in the ventilation systems of 12 ventilated buildings. The project includes the installation of valves and controls to isolate the systems by zones and to shut off the converters and pumps at a predetermined outside and space temperature.

The work will be performed in the following buildings:

Harding Band Building
Commerce West
Coordinated Science Laboratory
Electrical Engineering Building
Art and Design and Krannert Art Museum
Library 7th Addition
Psychology Lab
Altgeld Hall
Astronomy Building
Electrical Engineering Annex
IMPE

HVAC Retrofit - ($284,620)

This project provides for the replacement of the dual duct HVAC system in Loomis Laboratory of Physics and Materials Research Laboratory with a variable air volume (VAC) system. The results mean less energy required to produce the room temperature desired because the system is not heating and cooling at the same time.

Domestic Hot Water--Control - ($14,980)

This project includes the installation of instantaneous water heaters, controls, pumps, and the removal of hot water storage tanks to reduce the steam used by the domestic hot water systems in four buildings.

The work will be performed in the following buildings:

Natural Resource Studies Annex
Burnsides Research Laboratory
Foreign Languages Building
Medical Sciences Building

Domestic Hot Water--Control - ($38,520)

This project includes the installation of instantaneous water heaters, controls, pumps, and the removal of hot water storage tanks to reduce the steam used by the domestic hot water systems in seven buildings.

The work will be performed in the following buildings:

Animal Science Laboratory
Institute of Labor and Industrial Relations
Children's Research Center
Administration Building
Harding Band Building
Astronomy Building
Turner Hall

Radiation--Zone Control - ($328,490)

This project includes the installation of normally closed valves on zoned mains and converters, pump controllers, outside sensors, and space controllers to reduce the steam used by the radiation systems in 28 buildings.

The work will be performed in the following buildings:

Children's Research Center
Burnsides Research Laboratory
Commerce West
Psychology Laboratory
Rehabilitation Center
Foreign Languages Building
Animal Science Laboratory
Altgeld Hall
Agriculture Engineering Research
Ceramics
Fire Station
Lincoln Hall
Mumford Hall
Natural History
Natural Resources and Garage
Noyes Laboratory
Personnel Services Building
Physics Research
President's House
Stock Pavilion
Talbot Lab
Transportation
Arcade
Electrical Engineering Annex
David Kinley Hall
Harker Hall
English Building
Dairy Manufactures Building

Indoor Lighting - ($59,920)

This request is for changeout of approximately 800 incandescent fixtures in the campus buildings listed below with replacement fluorescent lighting.

Mechanical Engineering
Electrical Engineering

Indoor Lighting - ($147,874)

This request is for changeout of approximately 1,975 incandescent fixtures in the campus buildings listed below with replacement fluorescent lighting.

Natural History
Bevier Hall
Gregory Hall
Ceramics Building
Altgeld Hall

Steam Absorption Machine--Control - ($104,325)

This project includes the installation of automatic steam controls and valves on steam absorption machines in four buildings to reduce the amount of steam used to air condition the buildings.

The work will be performed in the following buildings:

Band Building
Institute of Labor and Industrial Relations
Psychology Laboratory
Water Resources Building

Animal Room Ventilation Improvements - ($507,180)

The use of 100 percent outside air in ventilating animal room spaces in three buildings require large energy expenditures to maintain indoor conditions. This project will provide for the installation of thermal energy recovery devices which can reclaim up to 70 percent of the energy required for each fan system.

The work will be performed in the following buildings:

Bevier Hall
Burrill Hall
Small Animal Clinic

Air Conditioning System Revisions - ($160,500)

This project will provide for converting individual direct expansion refrigeration units on each fan system in the Law Building to a common chilled water system with multiple chillers that can be operated to track cooling demand of the building and minimize resulting peak electrical demand. This new configuration will be compatible with the system in the future building addition and extension of chilled water from the Library Air Conditioning Center.

Reheat Systems--Zone Control - ($90,950)

This project is to reduce the steam used by three heat systems located in the ventilation systems of four ventilated buildings. The project includes the installation of valves and controls to isolate the systems by zone and to shut off the converters and pumps at a predetermined outside and space temperature.

The work will be performed in the following buildings:

Digital Computer Laboratory
Education Building
Library
Morrill Hall

Indoor Lighting - ($146,483)

This request is for changeout of approximately 1,675 incandescent fixtures in the campus buildings listed below with replacement fluorescent lighting.

The work will be performed in the following buildings:

Roger Adams Laboratory
Animal Sciences
Davenport Hall
Law Building

Steam Absorption Machine--Control - ($192,600)

This project includes the installation of automatic steam controls and valves on steam absorption machines in three buildings to reduce the amount of steam used to air condition the buildings.

The work will be performed in the following buildings:

Children's Research Center
Armory
Digital Computer Laboratory

Radiation--Zone Control - ($381,990)

This project includes the installation of normally closed valves on zoned mains and converters, pump controllers, outside sensors, and space controllers to reduce the steam used by the radiation systems in 29 buildings.

The work will be performed in the following buildings:

Civil Engineering Building
Education Building
Institute of Labor and Industrial Relations
Davenport Hall
Electrical Engineering Research Laboratory
Engineering Research Laboratory

Morrill Hall
Physical Plant Service Building
Veterinary Medicine Complex
Water Resources Building
Medical Sciences Building
Law Building
Smith Memorial Hall
Gregory Hall
Coordinated Science Laboratory
Library
Library 7th Addition
Natural Resource Studies Annex
Huff Gymnasium
Kenney Gymnasium
IMPE
Speech and Hearing Clinic
Engineering Hall
Coble Hall
University High School Gym
College of Veterinary Medicine and Annex
Wood Shop and Foundry
Turner Hall

Domestic Hot Water--Control - ($263,220)

This project includes the installation of instantaneous water heaters, controls, pumps, and the removal of hot water storage tanks to reduce the steam used by the domestic hot water systems in 24 buildings.

The work will be performed in the following buildings:

Armory
Civil Engineering Building
Commerce West
Coordinated Science Laboratory
Digital Computer Laboratory
Art and Design and Krannert Art Museum
Library
Library 7th Addition
Veterinary Medicine Complex
Electrical Engineering Building
Rehabilitation Center
Smith Memorial Hall
Psychology Laboratory
Gregory Hall
Aero Lab A and Brake Show Lab.
Huff Gymnasium
Electrical Engineering Research Laboratory
Ceramics Building
Kenney Gymnasium
Dairy Manufactures Building
Davenport Hall
IMPE

HVAC Retrofit - ($429,070)

This project provides for the replacement of the terminal reheat systems in the Administration Building, Commerce West, and Psychology Laboratory with a variable air volume (VAV) system. The results mean less energy required to produce the room temperature desired because the system is not heating and cooling at the same time.

Heating Systems Remodeling FY 1981 - ($1,070,000)

The project provides for the remodeling of deteriorated heating systems in nine buildings. Most of the original radiation and piping exists and is manually controlled. The project includes the installation of control valves, new radiation piping, and traps to provide greater system reliability conserve energy, and reduce maintenance costs.

The work will be performed in the following buildings:

Natural History
Wood Shop and Foundry
Noyes Laboratory
Engineering Laboratory
Illini Hall
Altgeld Hall
Agricultural Engineering
Ornamental Horticulture and Greenhouse