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FACILITIES GOVERNANCE REPORT

Actions Requested: Receive the report and recommend to the Board that it reaffirm the Board's support for continued:

1. Inter-institutional collaboration and coordination on facility issues, and
2. Institutional correction of identified fire safety and deferred maintenance deficiencies within the limits of available resources.

Executive Summary: The annual Facilities Governance Report, required by the Board's *Policy Manual*, is intended to provide the Board with a broad overview of the facilities at each of the Regent institutions and the condition of these facilities. The report includes information and updates on fire and environmental safety, and deferred maintenance.

Along with its human resources and its intellectual, financial and equipment assets, facilities are a primary resource of a higher education institution. Quality facilities help ensure excellent academic programs and the ability to attract and retain faculty, staff and students.

Regent Facilities: Academic/research/administrative (general fund) facilities at the Regent institutions total approximately 18.5 million gross square feet of the total 39.8 million gross square feet of Regent enterprise facilities. Categories of other facilities include University Hospitals and Clinics; agricultural experiment station; and self-supporting operations, including student unions, residence systems and parking systems. The FY 2017 replacement value of all Regent facilities is estimated at \$19.7 billion, of which \$9.8 billion is the replacement value for academic/research/administrative facilities. The Regent institutions have a total of 4,448 on-campus acres and 774 off-campus acres, excluding farm acreage.

Optimal Utilization of Facilities: In June 2003, the Board adopted evaluation criteria for major capital projects as defined by Board policy. Responses to the criteria are included in the capital registers when major projects are requested. These criteria have influenced institutional reviews and each university emphasizes space utilization in its stewardship of existing facilities and has established policies, procedures, practices or principles to help ensure the optimal utilization of facilities. These are consistent with the strategies and policies for the optimal utilization of existing facilities (see Attachment C) adopted by the Board in May 2006.

In October 2015, Ad Astra presented to the Board its analyses, findings, recommendations and implementation strategies to improve the utilization of classrooms and teaching laboratories at the Regent universities.

The analyses concluded, for all three universities, that there was no need for additional, traditional classroom space, but did not speak to the quality of existing space, the need to renovate or replace existing space, or the space's relevance to evolving pedagogy. Ad Astra did note that some space may need to be renovated and / or reconfigured, which would involve additional cost. Classroom utilization can be affected by a number of factors including capacity, seating type and location, as well as the quality and condition of the space.

An institutional specific finding for the University of Iowa was that departmental ownership of classrooms and laboratories (labs) limits the University's ability to efficiently meet students' needs.

It suggested a policy to centrally assign general purpose classrooms and centrally update room inventories.

For Iowa State University, Ad Astra included that additional labs may be needed in the most constrained lab types as laboratory space is a bottleneck for some disciplines.

Information on how the Regent universities are addressing the Ad Astra recommendations is included in Part A (page 5).

Institutional Coordination/Cooperation: In previous Facilities Governance reports, the universities provided an extensive list of collaborative and coordinated efforts in facilities-related areas. This collaboration allows the universities to share best practices and to pool resources to investigate and pursue innovative and cost saving approaches, as well as to collaborate on emerging facilities and utilities issues. The institutions work to explore new areas for collaborative/cooperative efforts and continue to work on efforts begun in recent years.

Inter-institutional meetings include separate groups for custodial operations, maintenance, utilities, energy management, design and construction, landscape services and interior design, as well as space management.

During the last year, Board Office worked with the universities to develop a Request for Proposals for electronic bidding of construction contracts. Proposals were scheduled to be received on February 9, 2017, with interviews scheduled for March. The Board Office and the universities have been transitioning to the utilization of electronic signatures on design professional and construction contracts. The Board Office, with input from each of the Regent institutions, revised the Property and Facilities section of the Board's *Policy Manual*. Some of the ongoing activities are outlined on page 7.

Fire and Environmental Safety Deficiencies and Deferred Maintenance: Fire safety deficiencies (identified by the State Fire Marshal, other entities engaged in fire safety reviews, or institutional personnel) and deferred maintenance (repair or replacement of all, or a part of, an existing capital asset that was not repaired or replaced at the appropriate time because of a lack of funds) can be corrected as individual projects, incorporated into major renovations / rehabilitations, or eliminated through the demolition of structures. The Board's FY 2018 – FY 2022 Five-Year Capital Plan, approved at its September 2016 meeting, includes \$100 million for individual projects to correct fire safety and deferred maintenance deficiencies.

The State Fire Marshal's Office and other external entities have identified fire safety deficiencies in general fund facilities which the institutions have estimated would cost \$9.6 million to correct; this amount is lower than the amount (\$9.8 million) reported for Fall 2015.

Identified, potentially life-threatening fire safety deficiencies are promptly addressed and corrected, or facilities are closed until they can be made safe. Other identified deficiencies are prioritized for correction. Progress in addressing fire safety issues will continue to be challenged by new safety standards, aging buildings and changes in building usage.

For Fall 2016, the Regent institutions report a total of \$779.2 million in deferred maintenance in general fund facilities and utilities, excluding on-going renovation projects, FY 2017 planned projects, and the deferred maintenance to be corrected as components of major renovation projects previously authorized. This total compares to the \$751.4 million reported for Fall 2015.

This increase of \$27.8 million (3.6%) is slightly less than the construction cost inflation factor of 4.0%. In addition, it is important to note that the universities continue to undertake complete building assessments, and to refine their analyses which can lead to the reporting of increased amounts. In addition, for many building systems, end of life milestones are being reached. Further information is included in Attachment B.

Report Organization: The report includes the following attachments:

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BACKGROUND

Campus Facilities: Regent facilities total 39.8 million gross square feet (GSF); approximately 31.4 percent of the square footage was constructed during the period 1961-1980, as was approximately 31.8 percent of the 18.5 million GSF of academic/research/administrative space. (The newest of these facilities are more than 30 years of age.) This construction “boom” was similar to the “boom” found among other higher education institutions in the United States.

The age of facilities is one of the factors contributing to the amount of deferred maintenance and the presence of fire safety deficiencies. Renovation provides a means to modernize facilities to meet current needs, and to address deferred maintenance and fire safety deficiencies. The following table summarizes, by year of construction, the Regent institutional total gross square footage (GSF) and academic/research/administrative (including Oakdale) total GSF.

Years	Regent Total Square Footage		Academic/Research/Administrative Square Footage*	
	GSF of Initial Construction	Percent of Total	GSF of Initial Construction	Percent of Total
Pre-1930	5,352,476	13.46	3,698,192	19.95
1931-1950	1,571,497	3.95	791,829	4.27
1951-1960	2,201,013	5.53	718,766	3.88
1961-1970	7,014,563	17.64	2,741,455	14.79
1971-1980	5,487,140	13.80	3,152,709	17.00
1981-1990	3,530,823	8.88	1,589,051	8.57
1991-2000	5,066,222	12.74	2,084,485	11.24
2001-2010	5,823,004	14.64	2,498,385	13.47
2011 - present	3,727,642	9.37	1,266,352	6.83
Total	39,774,380	100.00	18,541,224	100.00

*Includes Oakdale

The total square footage by institution, by function, is as follows:

	<u>SUI</u>	<u>ISU</u>	<u>UNI</u>	<u>ISD</u>	<u>IBSSS</u>	<u>Total</u>
Acad/Res/Admin	8,599,404	6,823,382	2,545,695	381,236	191,507	18,541,224
UIHC	4,172,242					4,172,242
All Other	7,247,297	7,518,442	2,295,175			17,060,914
Total	20,018,943	14,341,824	4,840,870	381,236	191,507	39,774,380

Capital Expenditures: Since FY 2011, the Regent institutions have expended almost \$2.0 billion for capital projects with project costs exceeding \$250,000.

The following table compares institutional expenditures for FY 2012 – FY 2016.

Projects with Costs Exceeding \$250,000 - All Funds* (\$ in millions)											
	FY 2012		FY 2013		FY 2014		FY 2015		FY 2016		
	#		#		#		#		#		
	Proj	Exp									
SUI	198	\$ 225.9	196	\$ 244.5	203	\$ 361.0	202	\$ 412.3	198	\$ 393.9	
ISU	105	79.1	91	125.2	100	84.9	97	105.8	107	115.2	
UNI	37	13.4	37	35.2	29	13.4	24	6.4	24	27.5	
Total	340	\$ 318.4	324	\$ 404.9	332	\$ 459.3	323	\$ 524.5	329	\$ 536.6	

* As submitted by the institutions to the Board Office on capital project status reports.

The expenditures are from all sources of funds including capital appropriations; building renewal (repair) funds; institutional road funds; gifts and grants; income from treasurer’s temporary investments; proceeds of academic building, dormitory, telecommunications, and other revenue bond issues; and university hospitals building usage funds and revenue bonds.

Status Report on Ad Astra Recommendations:

The following information has been provided by the universities to provide a status report on their activities to address the findings and recommendations of Ad Astra.

University of Iowa

The University of Iowa reports that while the number of rooms designated as general assignment classrooms has held relatively steady over the past year, there are 86 fewer departmental classrooms and 11 fewer departmental laboratories (labs).

Work is underway to address Ad Astra’s recommendation to centralize campus instructional spaces (where feasible), as well as to identify different types of instructional space needed by academic departments. A Provost-appointed task force, consisting of faculty and staff involved with classroom scheduling and utilization issues, was formed to address the outcomes and recommendations of the Ad Astra Study. Initial meetings focused on the reassignment of classrooms from departmentally assigned to general or registrar-assigned, as well as physical reviews of the spaces to ensure that spaces are classified correctly. The University is supplementing this effort by developing room use data associated with over two-dozen other activities and academic events held in classrooms. These activities are critical to the success of the academic programs and must supplement the course offerings. These uses have an impact on the utilization of classrooms, but were not covered in the Ad Astra Study.

The general condition of a classroom has an impact on its demand. Classroom environments that facilitate modern configurations offer audio/visual technology, lighting with scene controls, improved acoustics, and functional furniture. These learning environments are preferred by

instructors and students alike, are believed to contribute to an enhanced teaching and learning experience, and offer a positive impact on student success and recruitment.

Prior to the outcomes of the Ad Astra study, the University developed its own classroom space study. This analysis supported many recommendations in the Ad Astra Study but also concluded that while there are enough classroom space on campus, there are qualitative and design issues that must soon be addressed. The University reports that approximately 25 percent of its classrooms are inadequate due to poor conditions, poor locations or capability to support today's teaching pedagogies.

Iowa State University

The University reports that the most heavily used classrooms are those with a capacity over 50, with auditoriums seating over 100 especially in high demand.

ISU reports that it is analyzing classroom, teaching lab and seminar room utilization twice a year including evening classroom usage for courses and special events. More than 600 courses are being scheduled in teaching labs either before 7:00 a.m., or into the evening hours. Classroom use for special events after normal business hours has increased significantly over the past several years with a shortage of larger rooms in the evenings. Departmental room utilization information has been shared with college deans and department chairs to build a culture of efficient space utilization and to identify opportunities for usage improvements.

The University plans to further implement data analytics to ensure that course enrollment and classroom capacity are closely matched. The University also plans to review how to systematically expand reporting and analysis to optimize classroom use (for instance, to account for one-day offerings, or off-grid scheduling) and to reduce utilization barriers caused by non-standard scheduling.

The University reports that it prioritizes and funds classroom and instructional technology improvements on the basis of a classroom improvement study, metrics, and forecasting. The renovation of Pearson Hall classrooms to address capacity, pedagogy, technology, and infrastructure is ongoing; rooms will be ready for use in Fall 2017. Two new classrooms in the Bessey Hall Addition, currently under construction, will accommodate 75-100 students. The University has also converted underutilized space to address unmet classroom needs.

University of Northern Iowa

In response to the Ad Astra recommendations, a committee was formed to address issues of scheduling courses at non-standard teaching times and to review current guidelines that allow departmental control of certain classrooms. This committee, which includes faculty and administrators across the academic affairs division, is scheduled to finalize a draft of operational guidelines regarding approval of courses to be held at non-standard teaching times in February 2017. Those guidelines will go to the Deans' Council for its review at that time and will be fully in place by Fall 2018.

The University reports that there have also been a number of efficiency efforts in addition to the work on the TIER recommendations. One is the reduction of the total number of sections of courses held to increase the efficiency of the instructional budget. This was accomplished by increasing class sizes and eliminating extra sections, while maintaining abundant offerings for

students. Efficiency was achieved by reducing the number of classrooms that needed to be used. At the same time, University personnel are continuously reviewing the mix of offerings to ensure students have timely access to courses to keep them on a path toward graduation.

In addition, resource efficiency has also been achieved by repurposing classrooms whose usage patterns were low to utilize existing space in better ways. This has been possible because the renovation of Schindler Education Center, which was taken off-line in August 2015, is now complete and classrooms in the building can now be used.

Institutional Cooperation / Coordination: Iowa's public universities continue to work together and coordinate efforts related to facilities. This collaboration allows the universities to share best practices and to pool resources to investigate and pursue innovative and cost saving approaches. Iowa State University Department of Facilities Planning and Management is responsible for the administration of capital projects at the special schools and provides technical consultation as needed. Iowa State University's Environmental Health and Safety Office provides training and monitors compliance for asbestos, lead, chemical management and safety policies at the schools.

In addition to the efforts highlighted in the Executive Summary of this Report, including the many inter-institutional facilities groups which meet, some of the collaborative and coordinated efforts detailed in this year's institutional reports are:

- Promoting the economic development of a dedicated energy crop through collaboration between the University of Iowa and an Iowa State associate professor of agronomy. In 2016, 175 acres of Miscanthus were planted bringing the total to 900 acres under contract with local farmers for use as biofuel for the University's Power Plant.
- Adapting/creating job classifications to keep pace with the increasing technological complexity of facilities systems, with adoption of tier responsibility levels for electricians, environmental system mechanics and sheet-metal mechanics.
- Sharing service contracts for environmental emissions testing, hazardous and universal waste disposal, electronic waste recycling and boiler water treatment.
- Collaborating by the three universities on a maintenance, repair and operations contract with a company which has a broad inventory of equipment and maintenance supply items.
- Working together to address the impact and implement the National Fire Protection Agency Arc Flash requirements for safety in the workplace, especially for electricians and maintenance staff. (An arc flash, an explosive release of energy, takes place when a fault condition or short circuit occurs.)
- Collaborating by the three universities on a shared cleaning chemical contract.
- On-going monitoring of state licensure requirements for staff including electricians, plumbers, HVAC technicians, fire alarm systems installers, elevator mechanics, etc. to assure applicability and compliance for all Regent institutions.

Iowa's public universities and special schools also continue to expand cooperation and sharing arrangements with the public entities (cities, counties, school districts, conservation boards) in the municipalities in which they are located.

FIRE AND ENVIRONMENTAL SAFETY AND DEFERRED MAINTENANCE

BACKGROUND

Fire and Environmental Safety: Fire and environmental safety standards are established by several agencies, including the State Fire Marshal, and federal and state governmental regulatory entities. The State Fire Marshal's Office or other external entities may identify deficiencies during campus inspections, or campus personnel may note the deficiencies.

Potentially life-threatening deficiencies are promptly addressed and corrected, or the facilities are closed until they can be made safe. Lesser risks are prioritized using multiple factors, including hazard assessments and regulatory requirements. Corrective work is undertaken as funds are available, or the fire safety improvements may be accomplished as part of a renovation project. Each year, there are subtractions to the list as work is accomplished. Additions to the list can result from the altered use of a space, which changes the applicable building code requirements, or the new identification of a deficiency due to different interpretations of the code. Thus, the amount needed to correct the deficiencies does not necessarily decline by the amount that institutions have expended since the previous inspection.

The Regent institutions cooperate with the State Fire Marshal's Office in establishing fire safety priorities; each institution has a systematic method for determining the priority of fire safety improvements to be undertaken. Citations from the Office can be classified as (1) user [housekeeping or procedural items such as use of a doorstep to prop open a door], (2) maintenance [items that require no design and minimal expense, such as door repairs], or (3) other deficiencies [items for which the correction requires an outlay of funds beyond facility management maintenance funds; these items are prioritized].

Environmental safety deficiencies may be identified by campus personnel and regulatory entities. Environmental safety issues include asbestos, lead, underground storage tanks, spill prevention control and countermeasure plans, storm water pollution protection plans, polychlorinated biphenyls (PCBs), mercury, the Clean Air Act, and radioactive sites.

Deferred Maintenance: For a number of years, the institutions and Board Office have used the following common definition: Deferred maintenance is the repair or replacement of all, or a part of, an existing capital asset that was not repaired or replaced at the appropriate time because of a lack of funds.

Deferred maintenance is dependent upon time and is sometimes referred to as "capital renewal backlog." Replacement of a building or infrastructure system or component when it should be replaced is building renewal, not deferred maintenance. Deferred maintenance results from inaction on normal maintenance, including planned and preventive maintenance, and renewal and replacement projects.

Adequate funding of regular maintenance can significantly extend the useful lives of facilities and their components. Adequate funding of building renewal is also needed to replace building components.

Deferred maintenance in higher education is a national problem and is partially the result of building booms that occurred during the 1960s and 1970s. The facilities built at that time have aged and many of their component systems have reached the end of their design lives or have become obsolete. Campuses in the United States built more space from 1960 to 1975 than over the previous 80 years combined. Sightlines, a national facility consulting firm, has also noted the waves of construction, with buildings built before 1950 being older, but typically lasting longer. The firm has identified those built between 1961 and 1975 as lower-quality construction and experimental especially in mechanical systems that manage building environmental conditions, and those built since 1995 as higher quality construction, but with complex mechanical systems with shorter equipment lifecycles. The types of construction impact the timeline for replacement of building systems.

Sightlines, in its recent report *State of Facilities in Higher Education – 2016 Benchmarks, Best Practices & Trends*, noted that three key conditions are affecting the current state of higher education facilities: enrollment levels, facility age and use, and the availability of capital. (page 1) It also noted that the distribution of space across age categories is an important indicator of long-term facilities risks and capital needs. Buildings constructed during the 1960s and 1970s are driving the “catch-up” needs of campus; they represent a significant portion of the growing backlog of deferred maintenance. (page 7) (More than 31% of the Regent general fund space was built in the 1960s and 1970s.)

Funding Sources: The Regent institutions have made major efforts to correct fire and environmental safety issues and deferred maintenance over the last several years and have received significant state assistance.

The 2011 General Assembly appropriated \$2 million for FY 2012 for immediate fire safety needs and for compliance with the Americans with Disabilities Act (ADA). The sum of \$814,415 was not needed by the special schools for storm damage recovery from the \$2 million appropriated for FY 2013. These funds were allocated by the Board for fire safety and ADA needs at the universities at its September 2016 meeting. The 2013 General Assembly also appropriated \$2 million to correct fire safety needs and deferred maintenance and for compliance with ADA. The projects for which funds were appropriated during the 2014 legislative session (SUI – Pharmacy Replacement / Improvements; ISU – Biosciences Facilities; and UNI – Schindler Education Center Renovation) will eliminate approximately \$26 million in deferred maintenance. The ISU – Student Innovation Center, for which funds were appropriated during the 2015 legislative session, will be located on the site of the Nuclear Engineering Building and the original Sweeney Hall. Demolition of these buildings, previously approved by the Board, will eliminate approximately \$3.2 million in deferred maintenance.

Major funding sources for fire safety and individual deferred maintenance projects (not including deferred maintenance items completed as part of renovations) completed from FY 1993 through FY 2016 at the universities and special schools include: general fund operating budgets (\$208.7 million), utility renewal and replacement funds (\$119.0 million), proceeds from academic building revenue bonds and capital appropriations (\$67.3 million), income from treasurer's temporary investments (\$30.6 million), and UIHC building usage funds (\$25.9 million).

ANALYSIS

The budget challenges of the last few years and the aging of buildings and their systems have led to an increase in deferred maintenance and hindered the institutions' capabilities to correct fire and environmental safety deficiencies. Maintenance cycles and preventative maintenance activities have been delayed or eliminated, placing buildings and occupants more at-risk for unanticipated building system outages. The inability to make needed repairs/replacement of roofs, exterior building envelopes, windows, plumbing and electrical systems can cause further damage to the facilities, thus increasing the costs of future repairs.

The amount initially budgeted for FY 2017 for building repair represents approximately 0.47% of the \$9.8 billion replacement value of the university and special school general educational facilities. Building repair expenditures for FY 2016 for the Regent institutions in total represented 0.53% of the replacement value. According to national standards, this percentage should, at a minimum, be equal to 1% of the replacement value of the facilities to prevent their further deterioration. The University of Iowa has pursued an overall building renewal (critical deferred maintenance and asset reinvestment) target of 1%, realizing that the quality of facilities has a great impact on the success of University students, faculty and staff. Iowa State University reallocated \$1 million for new base funding to correct deferred maintenance each year from FY 2012 – FY 2015; the University reports that this new funding has allowed it to more proactively address deferred maintenance issues.

Fire and Environmental Safety: As reflected in Table 1 on page 15, fire safety projects completed from FY 1993 (the first year in which data were collected) through FY 2016, totaled \$79.5 million in general fund facilities, including UIHC (an average of \$3.31 million per year). Projects planned for or continued in FY 2017 total \$3.7 million.

The institutions indicate that \$9.6 million are needed to correct fire safety deficiencies in the general fund and UIHC facilities identified in past inspections by the State Fire Marshal and other external entities as shown below.

FIRE SAFETY DEFICIENCIES
Additional Funding Needed to Correct Fire Safety Deficiencies
Identified by External Entities¹
General Fund Facilities
(\$ Thousands)

	Fall 2016 (FY 2017)
SUI (includes Oakdale)	\$ 2,791.9
UIHC	-
ISU	6,249.0
UNI	490.4
ISD	-
IBSSS	55.0
Total	\$ 9,586.3

¹Includes items identified by State Fire Marshal's Office and other external entities; excludes work in buildings to be demolished, and for which waivers from the State Fire Marshal are to be requested.

The total amount reported is approximately \$170,000 less than the amount reported last fall as the institutions addressed fire safety deficiencies previously identified within available resources. Progress in addressing the deficiencies has been made.

At the University of Iowa, significant progress towards a safer campus was achieved in FY 2016. The new Visual Arts Building, Hancher Auditorium and Voxman Music Building, which were completed and occupied, were constructed and equipped with the latest in fire safety technology and systems. Facilities Management staff continued to network fire alarm systems, making a total of 67 buildings connected to the five loop network. This system provides actual building floor plans, showing each fire alarm device, and will provide the University Police communications center with real time information on each networked building. The network can also allow the University Police to activate the building's severe weather alert and perform live voice announcements, if needed, for other types of campus emergencies. In addition, the English Philosophy Building was completely outfitted with automatic fire sprinklers and installation of sprinklers was completed in MacLean Hall.

In FY 2016, progress was also made at Iowa State University as corrections of deficiencies were undertaken as part of renovation / remodeling projects in Food Science, Marston Hall and Veterinary Medicine. The estimated cost to remove the deficiencies at the University, as noted above, includes the cost of adding sprinkler systems to eight buildings to address fire corridor deficiencies cited in the 2015 inspection from the State Fire Marshal's Office; in its inspection reports the Office stated that self-closing devices on all doors leading to exits could be installed or the building sprinkled. In previous reports, the University noted that based upon current monies, it is likely that sprinklers would be installed only when a building undergoes significant renovation. In the buildings not scheduled for renovations, the University would install self-closing devices as funding is identified.

Correcting fire safety deficiencies is a high priority for the University of Northern Iowa. The University's Environmental Health and Safety Office's Fire and Safety Specialist continues to conduct fire safety inspections, the goal of which is inspecting each campus building at least once a year. During the renovation of Schindler Education Center, which was completed in December 2016, an automatic sprinkler, standpipe, and fire pump were added. In addition, an addressable fire detection and alarm system was added, along with additional fire barriers and separations throughout the building.

The State Fire Marshal's Office conducted its most recent inspection of the Iowa School for the Deaf in January 2015. All of the deficiencies noted in that report have been corrected. Iowa State University Environmental Health and Safety (ISU EH&S) staff conducted an environmental review during the summer of 2016.

The State Fire Marshal's Office has discontinued regular inspections of the Iowa Braille and Sight Saving School due to the closure of the residential program and the shift from a typical school environment with children regularly present. As an alternative safety measure, a bi-annual environmental safety inspection was conducted in September 2016 by ISU EH&S. Sixteen of the eighteen deficiencies noted in the report have been corrected with the other two to be corrected during an upcoming project.

Deferred Maintenance: As shown in Table 2 on page 16, deferred maintenance totaling \$413.4 million (an average of \$17.2 million per year) from FY 1993 through FY 2016, was corrected in Regent general fund buildings and utilities, not including deferred maintenance corrected as part of renovations. Projects planned for or continued in FY 2017 total \$79.4 million. Major renovation projects which have corrected or will correct a significant amount of deferred maintenance are also included in Table 2.

The table on the following page summarizes the deferred maintenance reported by the institutions. (Dollar amounts for projects planned to be undertaken in FY 2017 and the deferred maintenance components of ongoing and funded renovation projects are not included.)

**General Fund Facilities and Utilities
Fall 2016¹
(\$ Thousands)**

	SUI	ISU	UNI	ISD	IBSSS	Total
Individual Projects						
Buildings ²	\$133,124.4	\$322,562.4	\$ 98,126.0	\$ 3,940.0	\$1,236.0	\$ 558,988.8
Utilities	<u>16,577.5</u>	<u>17,366.0</u>	<u>22,288.0</u>	<u>225.0</u>	<u>168.0</u>	<u>56,624.5</u>
Subtotal	\$149,701.9	\$339,928.4	\$120,414.0	\$ 4,165.0	\$1,404.0	\$615,613.3
Included within Five Year Capital Plan (FY 2018 - FY 2022)						
Buildings ²	\$ 52,960.1	\$ 7,384.7	\$ 31,706.0	\$ 4,440.0		\$ 96,490.8
Utilities	<u>67,110.0</u>					<u>67,110.0</u>
Subtotal	\$120,070.1	\$ 7,384.7	\$ 31,706.0	\$ 4,440.0		\$163,600.8
Grand Total						
Buildings	\$186,084.5	\$329,947.1	\$129,832.0	\$ 8,380.0	\$1,236.0	\$ 655,479.6
Utilities	<u>83,687.5</u>	<u>17,366.0</u>	<u>22,288.0</u>	<u>225.0</u>	<u>168.0</u>	<u>123,734.5</u>
Total	\$269,772.0	\$347,313.1	\$152,120.0	\$ 8,605.0	\$1,404.0	\$779,214.1

¹Excludes dollar amounts for projects to be undertaken in FY 2017, those to be funded through previously authorized academic building revenue bonds and capital appropriations; and the deferred maintenance components of ongoing renovation projects.

²Includes site work.

The amount of deferred maintenance reported for Fall 2016 is \$27.8 million (3.6%) higher than the amount reported for Fall 2015. While the amount increased from \$751.4 million to \$779.2 million, the percentage increase is less than the construction inflationary cost increase of 4%. In addition, the universities continue to undertake complete building assessments, and to refine their analyses which can lead to the reporting of increased amounts. In addition, for many building systems, end of life milestones are being reached. The University of Iowa Hospitals and Clinics has not reported any deferred maintenance and indicates that it does not have any maintenance needs that meet the definition of deferred maintenance. All three universities report an increase in the amount of deferred maintenance from Fall 2015 to Fall 2016 while the special schools report slight decreases.

In exercising its facilities stewardship responsibilities, the University of Iowa relies on four basic strategies: 1) ongoing maintenance and operational care of existing facilities, 2) reinvestment in the renewal of long-term physical assets, 3) reduction of the backlog of deferred maintenance, and 4) decommissioning of obsolescent facilities or those with substantial deferred maintenance. The University uses a total cost of ownership decision-making framework (initial project cost and on-going care, utilities and energy costs over the useful life of a facility) for the consideration of various alternatives that may include renovation, improvement, or demolition of existing facilities.

Since 2004, the University has engaged ISES Corporation (Stone Mountain, Georgia) to provide consistent inspections and detailed analyses for existing facilities. Recently, ISES adopted a new methodology based on the renewal of each component of a building, rather than the building

system as a whole. This information provides more detail for developing the scopes for renovation and repair.

Beginning in FY 2014, the University contracted with Sightlines, an educational facilities asset strategic planning, advisory and benchmarking firm, to analyze the investment in the condition and care of the University's general education fund facilities. The University reports that, according to Sightlines, the University has done an exemplary job in leveraging its assets strategically to manage the critical deferred maintenance and accumulated repair and modernization. However, it points out that the flood recovery effort pushed back several renewal projects that would have otherwise gone forward during the recovery period. The combination of these delayed efforts, the aging profile of the University's building inventory, and current at-risk funding commitments find the University with an increasing critical need; the University is working closely with Sightlines to develop a five-year strategy to address these issues.

Iowa State University reports that it has a comprehensive, systematic process for identifying its deferred maintenance needs. The methodology involves assessing all general fund buildings in eight different categories. The assessment takes into account the replacement value of the building, the value of the sub-systems within the building, the age of the building and its systems, and the condition of those systems. The process was expanded during FY 2005 to also include building specific assessments to create project estimates for repair and replacement of building system components, such as an air handler, exterior building entrance steps, etc.; the data are entered into the FAMIS facilities management system. The data provide the University with a greater level of detail for assessing deferred maintenance needs relative to available funding. Facilities deferred maintenance priorities are combined with programmatic priorities to assure that funds are applied for maximum effectiveness, both for deferred maintenance and program needs.

The University of Northern Iowa continues to update its deferred maintenance information through building assessments. Information is obtained from users of the buildings, along with the maintenance personnel for the respective areas. When planning renovations, Facilities Planning design and construction staff review the deferred maintenance deficiencies and addresses those as part of the project. The University reports that an increase in annual budgeted funds will be required to sustain an adequate maintenance schedule for campus buildings. University operations and maintenance personnel currently focus their resources based on a priority system that addresses safety issues, educational support and repair of facilities equipment to lengthen the life of the assets.

**Table 1
BOARD OF REGENTS, STATE OF IOWA
FIRE SAFETY PROJECTS*
GENERAL FUND FACILITIES
(\$ Thousands)**

Projects:	SUI**	UIHC	ISU	UNI	ISD	IBSSS	Total
Completed Projects:							
FY 1993	\$ 1,476.5	\$ 507.3	\$ 1,135.6	\$ 551.3		\$ 11.0	\$ 3,681.7
FY 1994	721.2	619.2	365.6	447.3	\$ 111.5	6.9	2,271.7
FY 1995	1,664.2	619.4	153.6	62.5	97.5	10.9	2,608.1
FY 1996	2,233.4	55.0	2,163.7	83.6	211.5	4.0	4,751.2
FY 1997	1,320.0	380.0	235.8	63.8	91.5	41.2	2,132.3
FY 1998	1,401.0	1,552.3	735.9	126.3	125.0	8.1	3,948.6
FY 1999	1,696.0	1,880.8	288.0	12.2	225.0	8.4	4,110.4
FY 2000	1,272.0	2,335.0	219.0	64.3	12.0	1.0	3,903.3
FY 2001	944.0	2,071.7	538.3	77.5	1.0		3,632.5
FY 2002	718.0	1,322.7	542.8	8.2	25.0		2,616.7
FY 2003	930.0	1,377.0	336.9	26.3	23.0	65.0	2,758.2
FY 2004	1,554.5	915.9	295.5	25.0	6.0		2,796.9
FY 2005	1,502.0	2,103.0	177.0	25.0	25.0		3,832.0
FY 2006	1,637.0	2,058.6	215.9	30.0		1.7	3,943.2
FY 2007	978.3	650.0	928.6	36.0	75.0	4.7	2,672.6
FY 2008	1,128.2	676.4	470.0	80.2	700.0	343.3 ***	3,398.1
FY 2009	1,373.0	1,760.1	700.5	80.2	30.0	507.3	4,451.1
FY 2010	1,705.1	-	392.0	52.7	405.0	872.6	3,427.4
FY 2011	3,944.5	350.0	265.6	88.0	300.0	20.6	4,968.7
FY 2012	2,588.8	1,145.2	172.3	204.3	50.0	24.4	4,185.0
FY 2013	987.4	1,040.0	363.4	121.5		64.5	2,576.8
FY 2014	1,030.7	1,040.0	365.6	186.1	22.4		2,644.8
FY 2015	1,019.7	750.0	108.4	113.9	21.4		2,013.4
FY 2016	1,072.7	650.0	253.8	90.0	16.1	53.5	2,136.1
Subtotal	\$ 34,898.2	\$ 25,859.6	\$ 11,423.8	\$ 2,656.2	\$ 2,573.9	\$ 2,049.1	\$ 79,460.8
Projects Planned for or Continued in FY 2017	\$ 2,124.0	\$ 850.0	\$ 100.0	\$ 516.5	\$ 5.9	\$ 60.0	\$ 3,656.4
Total	\$ 37,022.2	\$ 26,709.6	\$ 11,523.8	\$ 3,172.7	\$ 2,579.8	\$ 2,109.1	\$ 83,117.2
By Source of Funds:							
Building Renewal / General University	\$ 20,227.2		\$ 6,153.8	\$ 1,995.9	\$ 851.8	\$ 1,685.8	30,914.5
Income from Treasurer's Temporary Investments	11,320.8		542.8	174.8			12,038.4
Academic Building Revenue Bonds	3,150.2		2,994.3	826.0			6,970.5
Special and Capital Appropriations	1,760.0		1,436.9	174.7	935.0	362.3	4,668.9
University Hospital Building Usage Funds		\$ 26,709.6					26,709.6
Other	564.0		396.0	1.3	793.0	61.0	1,815.3
Total	\$ 37,022.2	\$ 26,709.6	\$ 11,523.8	\$ 3,172.7	\$ 2,579.8	\$ 2,109.1	\$ 83,117.2

*Does not include fire safety components of major renovation projects.

**SUI - Excludes UIHC; includes projects approved and funded for FY 93 - FY 03; for FY 1993 also includes projects completed with Academic Building Revenue Bonds, 1991. Includes fire safety improvements in Old Capitol - Fire Restoration and Buildings Improvements and Chemistry Renovation projects.

***Includes fire safety components of renovation projects.

**TABLE 2
BOARD OF REGENTS, STATE OF IOWA FY 1993 - FY 2017
GENERAL FUND BUILDING AND UTILITY DEFERRED MAINTENANCE PROJECTS AND
RENOVATION PROJECTS WHICH INCLUDE CORRECTION OF DEFERRED MAINTENANCE
(\$ thousands)**

Deferred Maintenance Projects:	SUI	ISU	UNI	ISD	IBSSS	Total
Completed Projects:*						
FY 1993	\$ 6,591.9	\$ 970.2	\$ 1,593.4	\$ 45.0	\$ 16.1	\$ 9,216.6
FY 1994	2,881.6	1,881.1	1,459.6	543.5	75.9	6,841.7
FY 1995	4,922.1	7,805.3	1,703.1	148.0	24.8	14,603.3
FY 1996	6,571.3	6,944.4	2,581.3	173.0	207.8	16,477.8
FY 1997	3,262.6	2,953.8	2,256.7	133.1	95.6	8,701.8
FY 1998	3,053.0	3,495.3	1,677.7	282.5	172.5	8,681.0
FY 1999	2,928.8	3,492.2	3,435.2	470.0	36.8	10,363.0
FY 2000	6,375.4	5,522.2	3,859.1	758.0	595.1	17,109.8
FY 2001	3,798.2	6,104.2	858.7	485.0	49.1	11,295.2
FY 2002	2,598.9	2,463.9	3,442.6	660.0	1,159.8	10,325.2
FY 2003	7,377.6	4,194.8	439.4	165.0	69.3	12,246.1
FY 2004	7,154.0	4,187.5	761.5	596.3	56.0	12,755.3
FY 2005	9,695.8 **	5,253.1	1,400.0	625.0	53.0	17,026.9
FY 2006	12,434.8 **	2,764.8	964.8	1,040.0	23.8	17,228.2
FY 2007	12,464.0 **	4,966.3	1,710.0	160.0	320.5	19,620.8
FY 2008	15,780.6 **	3,498.9	910.2	195.0	967.9	21,352.6
FY 2009	9,847.2 **	3,936.0	3,022.6	217.5	335.9	17,359.2
FY 2010	19,046.3	10,521.7	2,757.9	250.0	605.3	33,181.2
FY 2011	17,805.1	2,422.3	2,798.2	250.0	171.1	23,446.7
FY 2012	6,648.2	5,105.9	1,891.3	900.0	506.1	15,051.5
FY 2013	17,766.3	4,905.5	1,524.5	104.6	13.4	24,314.3
FY 2014	11,930.5	6,521.6	2,177.5	128.5	581.6	21,339.7
FY 2015	9,213.9	9,980.9	1,656.3	311.5	83.2	21,245.8
FY 2016	<u>30,794.3</u>	<u>11,579.4</u>	<u>856.7</u>	<u>425.8</u>		<u>43,656.2</u>
Subtotal	\$ 230,942.4	\$ 121,471.3	\$ 45,738.3	\$ 9,067.3	\$ 6,220.6	\$ 413,439.9
Projects Planned for or Continued in FY 2017	\$ 59,134.1 **	\$ 12,654.5	\$ 6,683.2	\$ 865.0	\$ 113.0	\$ 79,449.8
Total	\$ 290,076.5	\$ 134,125.8	\$ 52,421.5	\$ 9,932.3	\$ 6,333.6	\$ 492,889.7
FY 1993 - FY 2016 Renovation Projects Which Include Correction of Significant Amounts of Deferred Maintenance***	\$ 132,946.4	\$ 127,277.3	\$ 126,290.0			\$ 386,513.7
Renovation Projects Planned or Continued for FY 2017 with Correction of Significant Amounts of Deferred Maintenance****	\$ 48,000.0	\$ 7,455.0	\$ 38,555.0			\$ 94,010.0
GRAND TOTAL	<u>\$ 471,022.9</u>	<u>\$ 268,858.1</u>	<u>\$ 217,266.5</u>	<u>\$ 9,932.3</u>	<u>\$ 6,333.6</u>	<u>\$ 973,413.4</u>
Total - By Source of Funds						
Building Renewal/Building Maintenance/General University	\$ 113,001.1	\$ 125,225.8	\$ 35,254.8	\$ 4,356.4	\$ 3,705.3	\$ 281,543.4
Building Renewal/Academic Building Revenue Bonds	52,728.3		83.5			52,811.8
Income from Treasurer's Temporary Investments (TTI)	19,351.4	11,353.7	1,450.2			32,155.3
Gifts, Grants	9,381.7	32,830.6	12,967.3			55,179.6
Utility Renewal and Replacement and Revenue Bonds	137,164.0	21,246.0	2,368.6			160,778.6
Academic Building Revenue Bonds; Project Notes	23,636.6	21,036.4	50,920.5			95,593.5
Acad. Bldg Rev. Bonds; Pre 1991 and 1991; and Project Notes		5,218.5	1,863.5			7,082.0
Academic Building Revenue Bonds; 1992	3,100.5	6,024.8	8,071.3		610.3	17,806.9
Academic Building Revenue Bonds; 1994, 1995, 2008	20,536.1	9,793.1	40,985.7			71,314.9
Capital and Special Appropriations	55,275.4	26,647.0	103,511.6	2,755.0	2,127.7	190,316.7
TTI, FY 96 Capital Appropriation, Utility Enterprise R & R	1,000.0					1,000.0
FY 96 Capital Appropriation, Utility Enterprise R & R	450.0					450.0
Agriculture Experiment Station & Cooperative Extension		1,175.2				1,175.2
Facilities Overhead Use Allowance	1,679.0	9,093.0				10,772.0
Building Repair / Treasurer's Temporary Investments	2,737.8	12,564.8				15,302.6
College of Medicine Gifts / Treasurer's Temporary Investments	2,468.4					2,468.4
College of Medicine Earnings and Gifts	1,645.9					1,645.9
College of Medicine Earnings, Gifts / Treasurer's Temp. Investment	4,114.3					4,114.3
Other (includes unspecified combination of above fund sources)	<u>54,691.1</u>	<u>20,250.4</u>	<u>10,710.0</u>	<u>2,820.9</u>	<u>500.6</u>	<u>88,973.0</u>
GRAND TOTAL - INDIVIDUAL DEFERRED MAINTENANCE ITEMS AND RENOVATION COSTS	<u>\$ 471,022.9</u>	<u>\$ 268,858.1</u>	<u>\$ 217,266.5</u>	<u>\$ 9,932.3</u>	<u>\$ 6,333.6</u>	<u>\$ 973,413.4</u>

* SUI - includes projects approved and funded for FY 93 - FY 96; for FY 1993 also includes projects completed with Academic Building Revenue Bonds.

** Includes Oakdale campus; for FY 2008 includes deferred maintenance eliminated through demolition of International Center

*** Renovation projects include SUI - Gilmore Hall, Schaeffer Hall, Phillips Hall, Bowen Science Building Microbiology, Medical Education Building, Hancher Auditorium, Engineering Building, Biological Sciences - Phase 2, Hydraulics Laboratory Modernization, Old Capitol, SUI-Chemistry and Old Music Renovations;

ISU - Catt Hall, Laboratory of Mechanics, Gilman Hall and Systems Upgrade, State Gym, Beardshear Hall, Hamilton Hall, Physics Hall Auditorium, Carver Hall, Morrill Hall

Pearson Hall, Crop Genomics Info. Lab Remodel, MacKay, Office and Lab, and Snedecor Hall Renovations, Curtiss Hall - Phase 1, MacKay Hall Auditorium, Lagonmarcino. Marston, Forker - Kinesiology Exercise

UNI - Seerley, Wright and Lang Halls, and Commons Renovations, Steam Distribution System Replacement - Phase 1, Innovative Teaching and Technology Center,

Science Building Renovation - Phase 1, Russell Hall Renovation, Gilchrist Hall Renovation/Restoration, Electrical Distribution System, Phases 1 and 2,

Sabin Hall Renovation, Bartlett Hall Renovation

****Includes SUI-Dental Science Renovation; ISU- Forker-Kinesiology and Pearson Halls Renovation; UNI - Schindler Education Center Renovation

Strategies and Policies for Optimal Utilization of Existing Campus Facilities

(Adopted by Board of Regents, May 2006)

1. Institutions should be as thorough and innovative as possible in their allocation and reallocation of space within their existing physical plants.
2. Each university should adopt general principles, consistent with the Board's and each university's strategic plan, regarding space assignment and scheduling of classes and should so inform the campus community. Each university should also ensure that its policies and procedures regarding space are consistent with these principles.
3. The universities should use their appropriate campus committees to stimulate discussions on improving the utilization of campus space and facilities, and to provide recommendations to the university administration.
4. Space planning should continue to be an institutional responsibility and be part of comprehensive long range campus planning, which includes an analysis of the quality, quantity and location of the space.
5. Requests for new space should continue to be documented and justified on a functional need basis with a demonstration that the identified program need cannot be met more economically through more efficient use of existing space or renovation, consistent with the Board's previous adoption of the capital project evaluation criteria.
6. Each university should review its existing utilization data when planning for new or renovated space; to the greatest extent possible, objective measures should be used to determine space needs. These objective measures could include benchmarking data or objective models, supplemented by further analyses and specialized studies.
7. Each university should consider development of policies regarding office space for part-time employees, including adjunct faculty, graduate students and emeritus faculty.
8. Each university should keep and utilize for each new construction or renovation project guidelines for the size of offices.
9. Each institution should submit with its request to lease space in the general vicinity of the main campus, an explanation of the spaces on campus examined and found unsuitable.
10. Classrooms, class laboratories and other facilities should be designed and scheduled for optimal utilization given program needs and student expectations.
11. The universities should strive to design efficient facilities, providing for as much usable (net) square footage as reasonably possible within the gross square footage and program goals of the building.
12. For those facilities thought to be obsolete, the institutions should assess their buildings' physical condition, contribution to the university's heritage, adaptability to being efficiently renovated and reused, and viability of reuse versus replacement; based upon this assessment, each university should determine whether it is prudent to retain each of its obsolete structures.