

MEMORANDUM

To: Board of Regents
From: Board Office
Subject: Governance Report on Fire and Environmental Safety
Date: November 6, 2000

Recommended Actions:

1. Receive the governance report on fire and environmental safety.
2. Encourage the institutions to continue to correct identified deficiencies as expeditiously as possible within the limits of available funding.

Executive Summary:

The Regent Procedural Guide (§9.13) requires that an annual governance report on fire and environmental safety be presented to the Board in November of each year. The institutional reports are to include the results of the State Fire Marshal's latest inspection and should detail programs completed or underway to correct outstanding deficiencies.

The report helps ensure that the Board provides good stewardship of facilities in accordance with its Strategic Plan (Key Result Area 4.0.0.0) and institutional strategic plans. Fire and environmental safety standards are set by several agencies, including the State Fire Marshal and federal and state governmental regulatory entities.

In recent years, the institutions have made major efforts to correct fire safety deficiencies identified by the State Fire Marshal's office and campus personnel. From FY 1993 through FY 2000, fire safety projects totaling \$26.2 million (Table 1, page 12) were completed in general fund facilities, including \$11.8 million at the University of Iowa, \$6.7 million at the University of Iowa Hospitals and Clinics, \$5.3 million at Iowa State University, \$1.4 million at the University of Northern Iowa, \$0.9 million at the Iowa School for the Deaf and \$0.1 million at Iowa Braille and Sight Saving School. These sums do not include fire safety projects addressed as components of major renovation projects. Fire safety projects totaling \$8.0 million are planned or will continue for FY 2001.

While substantial progress has been and is being made to correct deficiencies, the Regent institutions need to make continuing commitments for fire and environmental safety. Future progress will be challenged by new safety standards, aging buildings and changes in building usage. Identified deficiencies which are potentially life threatening are promptly addressed and corrected, or facilities are closed until they can be made safe. Lesser risks are prioritized using multiple factors including hazard assessments and regulatory requirements. Each institution has a process in place to ensure that fire safety deficiencies are incorporated into renovation projects. All renovation projects and new construction must meet current building codes.

The institutions have indicated that \$3.7 million in funding is needed to correct fire safety deficiencies identified in past inspections by the State Fire Marshal. This amount excludes the deficiencies which will be corrected as part of major projects and work planned for FY 2001.

Background:

The first report on fire safety at the Regent institutions was submitted to the Board in March 1988. Annual reports have been presented since that time.

Fire safety deficiencies at the Regent institutions are identified either by the State Fire Marshal's office during biennial campus inspections or by campus personnel. The University of Iowa also requested a special inspection by the Iowa City Fire Marshal which was conducted during 1998.

In recent years, the institutions have made major efforts to correct identified deficiencies, as detailed on Table 1, and are committed to further improvements.

For the period FY 1993 – FY 2000, the institutions expended \$26.2 million to correct fire safety deficiencies in general fund facilities. In addition to this sum, major renovation projects also correct fire and environmental safety issues as integral components. A variety of fund sources, including proceeds from the sale of Academic Building Revenue Bonds, building renewal (repair) funds, capital appropriations and other sources, have provided the funds for the corrective actions.

The General Assembly and Governor have been supportive of institutional efforts to correct fire and environmental safety deficiencies. The 1990 General Assembly authorized \$6 million in Academic Building Revenue Bonds to complete fire and environmental safety projects at the three universities. The 1991 General Assembly provided \$20 million in bonding authorization for the universities in the FY 1992 capital program for deferred maintenance, fire and environmental safety, equipment and utility projects.

The 1994 General Assembly provided \$2 million in bonding authorization for the universities for fire and environmental safety and deferred maintenance. The 1995 General Assembly appropriated \$5 million for fire and environmental safety, renovation and deferred maintenance at the universities. The University of Iowa and Iowa State University each allocated \$1 million of each institution's \$2 million appropriation for fire and environmental safety projects. These funds were used to help complete the FY 1996 projects included in Table 1.

In recent years, funds have been appropriated to the Iowa School for the Deaf for its campus-wide visual alert system and to address citations of the State Fire Marshal's office.

The 1996 and 1997 General Assemblies appropriated funds for major renovations at the Regent institutions, including the SUI – Biological Sciences, Phase I and Engineering Modernization projects and UNI – Lang Hall Renovation. The 2000 General Assembly appropriated funds for the Biological Sciences, Phase II project. Fire safety issues are being addressed in each of these projects.

Analysis:

This section includes subsections on A) Identification of Fire Safety Deficiencies, B) Prioritization of Fire Safety Projects and Inclusion of Fire Safety Projects in Renovations, C) Environmental Safety Issues and D) Financing Future Fire and Environmental Safety Projects.

A. Identification of Fire Safety Deficiencies

Changing safety standards, aging buildings, and changes in building usage will require continuing commitments for fire and environmental safety.

The following table provides a comparison between Fall 1999 and Fall 2000 of the institutional estimates of costs needed to correct the fire safety deficiencies in general fund buildings as identified by the State Fire Marshal's office.

| FIRE SAFETY DEFICIENCIES | | |
|---|----------------------------|----------------------------|
| Additional Funding Needed | | |
| to Correct Fire Safety Deficiencies | | |
| Identified by the State Fire Marshal¹ | | |
| General Fund Facilities | | |
| (\$ Thousands) | | |
| | <u>FY 2000²</u> | <u>FY 2001³</u> |
| SUI | \$2,910.0 ⁴ | \$3,208.1 ⁴ |
| ISU | 924.6 ⁵ | 524.7 ⁵ |
| UNI | 0.0 | 0.0 |
| ISD | 0.0 | 0.0 |
| IBSSS | 0.0 | 0.0 |
| Total | <u>\$3,834.6</u> | <u>\$3,732.8</u> |

¹Excludes work to be included as part of major renovations in the Board's Five-Year Capital Program, in buildings to be demolished, and for which waivers from the State Fire Marshal are to be requested.

²As reported in November 1999 and excludes work to be undertaken during FY 2000.

³As reported in November 2000 and excludes work to be undertaken during FY 2001.

⁴Estimated cost for the University of Iowa is the current estimate to complete the fire safety program for all general fund and Oakdale buildings. No costs associated with work at UIHC are included; UIHC inspections are conducted by the Joint Commission on Accreditations of Healthcare Organizations (JCAHO).

⁵Does not include additional \$6 million in fire and building safety items identified by institutional personnel or the Waste Chemical Facility identified by the State Fire Marshal; the latter would be a separate capital project with an estimated cost of \$3.78 million.

The University of Iowa attributes the increase in the funding needed to correct fire safety deficiencies to a combination of information received from the 2000 inspection by the State Fire Marshal's Office, which surveyed 26 academic buildings, better cost information, and the escalating cost of maintaining and replacing fire alarm and detection systems. The University reports that fire alarm and detection systems are becoming increasingly sophisticated and complex, with higher replacement and maintenance costs.

Iowa State University has made a systematic effort to address the deficiencies detailed in the 1999 inspection by the State Fire Marshal's Office, thereby reducing the additional funding needed. However, institutional personnel have identified an additional \$6 million in fire and building safety items which need correction.

University of Iowa

Since the submission of the 1999 report on fire and environmental safety, the University has received the report of the inspection undertaken by the State Fire Marshal's Office during the summer of 2000. This inspection, which surveyed 26 academic buildings, identified significant deficiencies in the Communications Center, the International Center, and Seashore Hall. The University reports that it expects the deficiencies in the International Center to be programmed for correction in FY 2002. Work in the remaining two buildings will begin as funds become available.

The Iowa City Fire Marshal inspected 35 buildings in a special inspection program conducted in 1998. The intent of this inspection, which was conducted at the University's request, was to determine the level of fire safety present in a number of minor structures not customarily inspected by the State Fire Marshal. The inspection focused on structural, not housekeeping, types of deficiencies. Nine buildings have been razed since the inspection or are scheduled soon for removal. Of the 35 facilities, 12 buildings were free of structural violations. Violations cited in the remaining 14 buildings were primarily related to the need for improved exiting and fire alarms. The University plans to include corrections of the identified deficiencies in future fire safety correctional programming.

The University of Iowa estimates that, by the end of FY 2001, 87% of the main campus general fund space will be in general structural compliance with fire safety codes. (General structural compliance is defined as the absence of fundamental building deficiencies, such as inadequate exiting, the lack of proper corridor separation, or the absence of a fire alarm system.) The following table summarizes the percentages reported since FY 1998.

Main Campus General Fund Space

| | <u>End of</u> | | | |
|--------------------------------------|----------------|----------------|----------------|----------------|
| | <u>FY 1998</u> | <u>FY 1999</u> | <u>FY 2000</u> | <u>FY 2001</u> |
| Estimated % in Structural Compliance | 59% | 72% | 79% | 87% |

Life safety code and fire safety inspections for the University of Iowa Hospitals and Clinics inspections are deferred by the State Fire Marshal to the Joint

Commission on Accreditations of Healthcare Organizations (JCAHO) site survey. A JCAHO site survey was completed in October, 1998 and the next scheduled survey will be Fall 2001.

The UIHC has embarked upon a major program to enhance fire safety. The program includes 100 percent sprinkler coverage of the hospital buildings and conversion of the current antiquated fire alarms to an addressable fire alarm system. Sprinkler coverage of all hospital areas is required by current fire safety codes. The addressable fire alarm system is computer based and provides faster response to alarms by pinpointing alarm locations. The UIHC has incorporated the 100 percent sprinkler coverage and addressable fire alarm system into its Five-Year Capital Program. The fire safety portion of the Five-Year Plan has also been submitted to and accepted by JCAHO.

Iowa State University

The State Fire Marshal's office conducted its last inspection of Iowa State University academic facilities in 1999. Reports indicate that the Fire Marshal was pleased with the progress the University was making and the commitment of the maintenance staff.

Two of the facilities surveyed, which have received multiple citations, are the Insectary and the Chemical Waste Handling Facility.

- The State Fire Marshal's report recommended that the University make plans to remove the wood-framed shop near the Insectary greenhouses that is being used for repair facilities. The University's FY 2001 list of fire safety projects includes the removal of the wood-framed shop at an estimated cost of \$250,000. The University has advised the Board Office that it plans to bring forward a request to demolish this facility at the December 2000 meeting, in accordance with Regent Procedural Guide §7.11.
- The State Fire Marshal issued four citations for the chemical storage facility. The University reports that, although the existing facility has been cited, it is in a remote location with no regular occupants and with relatively low exposure to populated areas or other facilities. The University also reports that facility staff use regular inspection and maintenance schedules to minimize hazard potentials.
- In 1998, the University reported that it hoped to reach a decision within the year on whether to build a new facility or close the current facility and ship the materials to other processors or commercial facilities.

- In 1999, the University reported that it was continuing to evaluate possible funding sources for the development of a new facility and hope to develop a plan during FY 2000.
- In the current report, the University states that it is continuing to evaluate the siting of a new facility for chemical waste management. Several potential campus locations and building options are currently under consideration. The University plans to explore further siting and funding options, and visit recently constructed facilities at peer institutions during the next fiscal year.
- The estimated cost to construct a new facility to meet EPA, OSHA and state building code requirements is \$3.78 million. The new facility appeared on the University's FY 1998, FY 1999, FY 2000, and FY 2001 capital plans (presented to the Board in June 1997, June 1998, June 1999, and June 2000 respectively).

University of Northern Iowa

The State Fire Marshal's representative completed the most recent survey at the University of Northern Iowa in October 1999. This inspection identified 120 items in 33 academic buildings. According to the University, 68 deficiencies have been corrected to date at an estimated cost of \$64,300. It is anticipated that all but three of the remaining 52 violations will be corrected by the end of FY 2001 at a cost of approximately \$75,000. The other three deficiencies would be corrected as part of major renovation projects for the Physics Building and Price Laboratory School included in the Board approved Five-Year Capital Plan.

Iowa School for the Deaf

The most recent fire safety inspection at the Iowa School for the Deaf took place in 1995. This inspection, which was much more thorough than previous inspections, resulted in 240 citations. At the conclusion of FY 1997, approximately 166 citations had been resolved with an additional 54 citations addressed during FY 1998 – FY 2000.

The remaining 20 citations are predominantly located in uninhabited areas of Giangreco Hall. The School will address the vertical separation and door replacement issues as part of future remodeling projects. Two of the citations are in the swimming pool area. When the Recreation Complex is completed and the current swimming area closed, the citations will no longer be applicable. The School will request a variance during the next site visit for the historically significant doorways and arches in Giangreco Hall and the interior glass wall in the elementary school.

Iowa Braille and Sight Saving School

The State Fire Marshal's office conducted its most recent inspection at the Iowa Braille and Sight Saving School in September 1997. Of the 7 citations, 5 were corrected by November 30, 1997. The other two citations related to the recently installed fire doors in Rice and Palmer Halls which did not have the proper fire rating for their proximity to the fire escapes. Additional fire alarm sensors were installed in the affected areas for added safety. The School sought a variance from the State Fire Marshal to continue to use the doors in October 1999 but no response has been received.

B. Prioritization of Fire Safety Projects and Inclusion of Fire Safety Projects in Renovations

Each Regent institution cooperates with the State Fire Marshal in establishing fire safety priorities, and each institution has a systematic method for determining the priority of fire safety improvements to be undertaken.

Citations from the State Fire Marshal can be classified as (1) user, (2) maintenance, or (3) other deficiencies.

1. User deficiencies are housekeeping or procedural items such as the use of a doorstep to prop open a door or storage of an item in a hall.
2. Maintenance items usually require no design and minimal expenses per item, such as door repairs. These are corrected utilizing physical plant / facility management forces and funds.
3. Other deficiencies, the correction of which requires an outlay of funds beyond the capability of physical plant (facility management) maintenance funds, are prioritized.

University of Iowa

The University of Iowa utilizes, for some buildings, the National Fire Protection Association's Fire Safety Evaluation System (FSES) approach, which prioritizes projects in terms of each building's overall fire safety rather than on the basis of each individual deficiency within each building. This proactive approach identifies comprehensive building fire safety issues rather than responding to specific violations. Fire safety in existing buildings is assessed to determine the best way to provide protection equivalent to current code requirements (an equivalent level of life safety).

The University evaluates how fire code requirements fit into each renovation project. If needed by code requirements, major renovation projects can address building-wide fire safety issues, such as alarm systems, and fire separation and egress routes.

Recent and current major projects with prominent fire safety components include the Macbride Hall auditorium renovation, in which a new fire panel to serve the entire building and a sprinkler system were installed. The sprinkler system will eventually be attached to a building system. The Engineering Building Modernization project includes a fire alarm upgrade integrated with the new addition. The Hydraulics Laboratory Renovation, the design for which was recently approved by the Board, includes approximately \$100,000 of fire safety improvements.

Iowa State University

Iowa State University utilizes a prioritization approach that ranks fire safety deficiencies by the State Fire Marshal at the top of its list. Remaining projects are ranked according to a risk rating priority method developed by the University's Department of Environmental Health and Safety (EH&S) and accepted by the State Fire Marshal.

The Department of Environmental Health and Safety reviews plans and designs for new buildings and renovation projects for fire safety deficiencies. This information is shared with project designers and engineers who may also consult with EH&S on fire code issues and problem resolution involving fire safety deficiencies.

Recent major remodeling projects, which corrected deficiencies identified by the State Fire Marshal's Office, include the Student Services Building and State Gym. The Beardshear Hall Renovation, currently underway, will also address deficiencies.

University of Northern Iowa

The University of Northern Iowa prioritizes those items where the potential risk to human life is the greatest. Maintenance deficiencies identified during previous inspections generally receive priority consideration.

When planning renovation projects, the Facilities Planning office reviews the fire safety deficiencies and addresses those deficiencies as part of the project. Major renovation projects that may have an impact on fire safety systems already in place are sent to the State Fire Marshal's office for review.

The renovation of Lang Hall, currently under construction, is addressing fire safety deficiencies in the building.

Iowa School for the Deaf

The School's priority has always been to address first those citations in the student areas. It has responded accordingly in addressing the deficiencies from the 1995 State Fire Marshal's report.

Iowa Braille and Sight Saving School

The safety and well-being of the students and staff of the School continues to be a priority. Although not cited in the last Fire Marshal's report, the School continues to refurbish, retrofit or replace emergency exit light and install magnetic door holders in both dormitories. The electronic door holders provide student access without compromising fire safety. They are interconnected with the fire alarm system and automatically close the door when the alarm system is activated.

C. Environmental Safety Issues

In addition to fire safety deficiencies identified by the State Fire Marshal, funding is needed for environmental safety deficiencies identified by campus personnel and regulatory entities.

Environmental safety issues addressed in the institutional reports include asbestos, lead, underground storage tanks, spill prevention control and countermeasure plans, storm water pollution protection plans, polychlorinated biphenyl's (PCB's), mercury, the clean air act, and radioactive sites. The institutions report that they are dealing appropriately with the issues, and have developed the necessary plans.

In August 1994, the Occupational Safety and Health Administration (OSHA) promulgated new regulations covering asbestos abatement activities. The new standard took effect October 1, 1995, and increased the restrictions on construction activities and abatement actions. The standard also requires identification signage on asbestos-containing building materials.

In May 1993, OSHA issued new lead safety standards addressing workplace activities and practices that involve potential employee exposure to lead. Many renovation projects of older buildings may involve lead paint removal; these will require compliance with new OSHA lead abatement regulations.

Underground storage tanks used for heating oil are exempt from registration requirements. Tanks storing gasoline and diesel fuel had to be upgraded or removed from service prior to December 22, 1998. All tanks at the University of Iowa and Iowa State University, which were required to meet the EPA standards by the December 1998 date, met the standards.

D. Financing Future Fire and Environmental Safety Projects

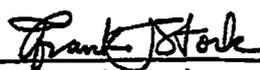
Projects totaling \$8.0 million (Table 1) are planned or will continue for FY 2001 in general fund facilities. Building repair funds, income from treasurer's temporary investments, and UIHC building usage funds will fund these projects.

Current operating budget resources available to correct items are limited because of the demand for funds among fire safety, deferred maintenance, and building renewal. A detailed analysis of building repair budgets is included in the docket item on deferred maintenance (see G.D. 10). The University of Iowa reduced its FY 2001 building renewal budget by approximately \$1.0 million from the original FY 2000 budget to address, in part, its shortfall in appropriations. As a result of the reduction, the University of Iowa has budgeted \$500,000 in general fund building repair funds for fire and environmental safety projects in FY 2001; this amount compares to \$900,000 in FY 2000.

Capital appropriations are also requested from the State to fund improvements that are beyond the capability of the institutional operating budgets. The Board's Five-Year Capital Plan (FY 2002 – FY 2006) includes \$10.0 million in funds to specifically address the deficiencies, including \$2.0 million in FY 2002. In addition, major remodeling projects included in the Board's Five-Year Capital Plan will correct fire safety deficiencies.



Joan Racki

Approved: 

Frank J. Stork

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TABLE 1
BOARD OF REGENTS, STATE OF IOWA FY 1993 - FY 2001
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 | <u>6,375.4</u> | <u>5,522.2</u> | <u>3,859.1</u> | <u>758.0</u> | <u>595.1</u> | <u>17,109.8</u> |
| Subtotal | \$ 36,586.7 | \$ 33,084.5 | \$ 18,566.1 | \$ 2,553.1 | \$ 1,224.6 | \$ 91,995.0 |
| Projects Planned for or Continued in FY 2001 | \$ 3,587.0 | \$ 5,702.2 | \$ 4,360.7 | \$ 355.0 | \$ 315.0 | \$ 14,319.9 |
| Total | \$ 40,173.7 | \$ 38,766.7 | \$ 22,926.8 | \$ 2,908.1 | \$ 1,539.6 | \$ 106,314.9 |
| FY 1993 - FY 2000 Renovation Projects Which Include Correction of Significant Amounts of Deferred Maintenance** | \$ 23,091.6 | \$ 20,695.1 | \$ 8,651.0 | | | \$ 52,437.7 |
| Renovation Projects Planned or Continued for FY 2001 with Correction of Significant Amounts of Deferred Maintenance** | \$ 31,790.0 | \$ 19,463.2 | \$ 13,500.0 | | | \$ 64,753.2 |
| GRAND TOTAL | \$ 95,055.3 | \$ 78,925.0 | \$ 45,077.8 | \$ 2,908.1 | \$ 1,539.6 | \$ 223,505.8 |
| Total - By Source of Funds | | | | | | |
| Building Renewal/Building Maintenance/General University | \$ 19,566.7 | \$ 23,862.5 | \$ 17,090.7 | \$ 1,303.1 | \$ 810.3 | \$ 62,633.3 |
| Building Renewal/Academic Building Revenue Bonds | 340.0 | | 83.5 | | | 423.5 |
| Income from Treasurer's Temporary Investments (TTI) | 9,152.3 | 9,861.9 | 992.0 | | | 20,008.2 |
| Gifts, Grants | 2,680.7 | 6,125.9 | | | | 8,706.6 |
| Utility Renewal and Replacement | 12,276.1 | 6,979.7 | | | | 19,255.8 |
| Academic Building Revenue Bonds; Project Notes | 11,346.3 | 11,862.2 | 9,998.6 | | | 33,207.1 |
| Capital and Special Appropriations | 25,640.0 | 13,005.5 | 14,802.7 | 950.0 | 591.5 | 54,989.7 |
| Agriculture Experiment Station & Cooperative Extension | | 877.5 | | | | 877.5 |
| Facilities Overhead Use Allowance | 1,679.0 | 982.5 | | | | 2,661.5 |
| College of Medicine Earnings, Gifts / Treasurer's Temp. Investment | 4,114.3 | | | | | 4,114.3 |
| Other (includes unspecified combination of above fund sources) | <u>8,359.9</u> | <u>5,367.3</u> | <u>2,110.3</u> | <u>655.0</u> | <u>137.8</u> | <u>16,630.3</u> |
| GRAND TOTAL - INDIVIDUAL DEFERRED MAINTENANCE ITEMS AND RENOVATION COSTS | \$ 95,055.3 | \$ 78,925.0 | \$ 45,077.8 | \$ 2,908.1 | \$ 1,539.6 | \$ 223,505.8 |

Notes:

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

**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; ISU - Catt Hall, Laboratory of Mechanics, Gilman Hall and Gilman Hall Systems Upgrade, State Gym, Beardshear Hall, and Pearson Hall. UNI - Searley, Wright and Lang Halls, and Commons.