

**Iowa State University
Capital Request
Capital Project Summary
Fiscal Year 2020- 2024**

Institution	Project Title	Category of Request	Priority
Iowa State University	Parks Library Student Learning Hub	New Construction and Renovation	BOR# ISU# 1

Estimated Cost by Year and Source of Funds (e.g. Academic Building Revenue Bonds, Building Repair Funds, Utility Enterprise Funds)

	<u>Appro./Bonds</u>	<u>Private Gifts</u>	<u>University Funds</u>	<u>TOTAL</u>
FY2020	\$10,000,000	\$1,000,000		\$11,000,000
FY2021	\$16,000,000	\$1,000,000		\$17,000,000
FY2022				
FY2023				
FY2024				
TOTAL	<u>\$26,000,000</u>	<u>\$2,000,000</u>		<u>\$28,000,000</u>

Brief Description

The Parks Library is a 325,500 square foot building originally constructed in 1925, with major additions in 1961, 1969, and 1983. The library is an integral part of the campus community. With over 2,200,000 visitors in FY 2018, the library has experienced increased demand on facilities, collections, and services. Student enrollment growth, modes of learning, technological advances and expectations, and an increased number and variety of services have had a significant impact on space typology and building use. The University Library must create spaces where ideas and innovation collide. Completed in 2017, a comprehensive feasibility study to re-conceptualize the library articulated programmatic space needs, evaluated infrastructure and life safety systems, and developed a phased renovation strategy achievable in a fully occupied building. Strategies to optimize and repurpose existing space to expand critical technology-equipped student study and collaboration spaces were developed and prioritized.

Much of the building infrastructure has exceeded its useful life. The combination of deferred maintenance, aging and inefficient building systems, expanded services, additional hours for student access, and the wear and tear associated with continual, intense facility use, requires significant investment. Through the addition of a rooftop mechanical penthouse, the replacement and reduction of stack space with compressed storage, and a major renovation, repurposed and updated space will have a meaningful impact on thousands of students, faculty and staff.

	GSF	NASF	N/A	Project Cost per Gross Square Foot
New Construction		7,000	N/A	\$340
Renovation (80% net-to-gross)		74,000	59,200	\$345

Project Schedule (Elapsed months following Approval of Permission to Proceed by Board)	Previous Action (if any)	
	<u># Months</u>	<u>Cumulative</u>
Planning Phase	<u>14</u>	<u>14</u>
Bidding	<u>2</u>	<u>16</u>
Construction	<u>18</u>	<u>34</u>
Opening	<u>2</u>	<u>36</u>

Budget Estimate:	Operating Budget Impact: (full year estimate)
Construction Cost	
Demolition	
Fixed Equipment*	
Movable Equipment/Furnishings	
Utility Extensions	
Site Development/Land Acquisition	
Planning and Design	
Art Work	
Contingency	
Internal Project Management	
Total Project Budget Estimate	
* Included with Construction Cost	
	Opening Cost (nonrecurring)
	Operations and Maintenance
	Utilities
	Other (Grnds/EHS/DPS/Mail)
	Total
	Annual Capital Renewal

Proposed Source(s) of Operating Funds: General Fund

Proposed Source(s) of Capital Renewal Funds: General Fund

Parks Library Student Learning Hub

Name and Priority

Parks Library Student Learning Hub
Priority #1 in FY 2020 and Priority #1 in FY 2021

Category of the Request

New Construction and Renovation

Statement of the Problem

An addition and major renovation of the Parks Library occurred in 1983; minor renovations and updates in material finishes and furnishings have occurred since that time. However, student enrollment growth, needs, and traffic patterns have changed drastically over the last 35 years. Overall use of the library has intensified significantly; hours of operation have been expanded to provide improved access for students and faculty. Library staff now collaborate with numerous institutional partners who provide a wide variety of services to students in the library, such as the Information Technology Solution Center, technology equipment checkout, tutoring, and ISU Dining cafe. The Center for Excellence in Learning and Teaching also occupies space in the building, providing a convenient, central campus location for faculty consultations.

The quantity of space is inadequate and existing space does not support contemporary learning styles and the research needs of a 21st century research university campus. One result of heavily subscribed space is the need to reinvest and refresh materials and finishes more frequently. Space in the library should be rethought, redeveloped, and renovated to meet the current needs of students, faculty, and staff.

Deferred maintenance in Parks Library exceeds \$20M. Many of the building infrastructure systems are at or beyond their useful life. The capacity of the existing systems is not adequate for space in its current configuration; plans to transition stack space to study and collaboration space will further exacerbate the ability of the mechanical systems to meet the additional load. Poor ventilation is especially concerning in a library facility. Aging systems lack expandability to meet programmatic needs and existing systems are less energy efficient when compared to modern systems.

Iowa State University funded Phase 1 of the Parks project, a \$2.3M restroom renovation on five floors in the 1960's building addition. Plumbing fixtures and piping that required frequent repair were replaced. The project increased restroom capacity, addressed accessibility, added gender-neutral restrooms and a lactation facility. This was a critical first step in the revitalization of the Parks Library. With Phase 1 now underway, the next phases can be considered, which address the first goal for additional, technology-equipped student study and collaboration spaces, and two enabling infrastructure projects.

Description of the Project

This project will transform approximately 44,000 square feet on the second and third floors of Parks Library from book stacks with limited study space into a vibrant hub for student learning and discovery, with individual study and collaborative spaces reinforcing the Board of Regents, State of Iowa's priority for student success and access to education. Approximately 600 additional seats for students will be added with this project, greatly improving the seats-to-student ratio from 1:16 to 1:12. Group/collaboration spaces will more than triple, from the currently inadequate eight rooms to thirty technology-enhanced spaces that will help build a strong and vibrant learning community. Level 2 will become an active learning commons space, with collaborative group spaces, additional seating, and open lab/classroom space. Level 3 will include space for graduate students, additional open seating, and technology-equipped group study rooms.

These significant student-focused improvements will be accomplished by replacing and relocating the more than 50 year old, energy-inefficient, HVAC equipment from a mechanical room on the fourth floor of the library to a newly constructed rooftop mechanical penthouse. The nearly 8,000 square feet that the former mechanical room occupied on fourth floor will be recaptured for future expansion of the Special Collections and University Archives group. In conjunction, the print collection on second, third and fourth floors will be compressed and relocated to high-density storage shelves in the basement, freeing up critical space for learning and student engagement.

Justification of the Project

This project addresses:

- The Governor's goal of training Iowans for the jobs of tomorrow.
- The Board of Regents, State of Iowa's priority to ensure access to education and student success.
- Iowa State University's strategic goal to ensure access to the ISU Experience – including an exceptional education offering practical, global, and leadership experiences that shape the well-rounded citizens and informed critical thinkers need in the 21st century.

The library's central campus location provides convenient access for students, faculty, and staff. As a place for discovery, inspiration, engagement and creative production, the Parks Library is one of the few non-departmental buildings on campus where students, faculty, and visiting scholars from all disciplines can engage with one another in an information-rich environment. Faculty are also increasingly collaborating with librarians to support their teaching and research.

The library fulfills an essential institutional role by helping students develop critical thinking skills, as well as access to and instruction in the use of high-quality information. Over the past five years, the number of visitors to the library increased 30%; there were over 2,200,000 visitors in FY 2018. There has been increased demand for study and collaboration space as enrollment has grown and learning styles have changed. Access to technology-infused spaces prepare students for the workplace. Library staff have identified additional engagement-oriented and interaction spaces as a critical need, a trend confirmed by benchmarking data from peer institutions. Students also still require “heads-down” individual quiet study space. The Library needs to be a haven for both. Space to support both types of learning is simply inadequate.

Extended hours of operation have improved access; reducing stack space through digitizing and consolidating collections has expanded interaction space. However, opportunities to easily, effectively, and efficiently use existing space has been exhausted. More extensive, comprehensive measures are required.

Multiple air handlers are more than 50 years old. In addition to age, condition and capabilities have been considered. These units are inherently inefficient and cannot accommodate the environmental demands of a facility occupied by people and devices versus inert books. The two air handlers located on the fourth floor that will be replaced and installed in the new penthouse currently serve over one-half of the building. Replacement of existing equipment will provide appropriate and reliable conditions for a library environment, result in occupant comfort, and is necessary for future renovations.

Summary of the Alternatives Considered

The most cost effective, sustainable, and expeditious strategies to add critical programmatic area is to capture and repurpose existing space through the construction of a rooftop mechanical penthouse and by installing compressed storage for library collections. Consolidating the majority of the collections into high-density storage systems on the lower level opens up tremendous amounts of programmable space on the second and third floors. It also organizes the books in a more easily navigable collection. A mechanical penthouse is a low cost option to harvest high quality space within the existing building envelope. The necessary footprint exists in Parks Library to add much needed student-centered study and collaboration spaces with the implementation of these strategies.

To avoid disruption or the prolonged shutdown of sections of the library, the existing air handling units must continue to operate while replacement units are installed. There is not adequate space to install new air handlers in the current fourth floor mechanical room; usable program space will be reduced if a new mechanical room has to be developed. Building a rooftop mechanical penthouse allows the new units to be placed and in service before the old units are decommissioned and removed, assuring continuity of operations. Building directly above the current mechanical room will also facilitate routing of services and ductwork currently connected to the existing units. Reinvestment in the iconic Parks Library is the only reasonable approach to address unmet programmatic needs and improve the capacity and reliability of building systems.

Estimated Costs and Source of Funds

State Appropriations \$26,000,000
 Private Gifts \$2,000,000

	Appropriations	Private Gifts	University Funds	Total by year
FY 2020	\$10,000,000	\$1,000,000		\$11,000,000
FY 2021	\$16,000,000	\$1,000,000		\$17,000,000
FY 2022				
FY 2023				
FY 2024				
Total	\$26,000,000	\$2,000,000		\$28,000,000

Operating Expenses

Operating Budget Impact:
 Operations and Maintenance \$250,000
 Utilities \$190,000
 Other (Grounds/Mail/EHS/DPS) \$50,000

Methods used to determine the costs:

Estimates of the Operating Budget Impact are based on actual costs and metered utilities for existing space and correlation with similar building types.

Proposed source of funds: General Fund

Annual Capital Renewal Amount: \$420,000

Project Schedule and History of Previous Action

The anticipated schedule following funding of the project is:

- Planning and Design Phase- 14 months
- Bidding and Contract Award- 2 months
- Construction Phase- 18 months
- Occupancy- 2 months
- Total number of months: 36 months

Previous action by the Board:

None.

Previous request and any changes in dollar amounts or priorities:

None.

**Iowa State University
Capital Request
Capital Project Summary
Fiscal Year 2020- 2024**

Institution	Project Title	Category of Request	Priority
Iowa State University	Biosciences Backfill	Renovation	BOR# ISU# 2

Estimated Cost by Year and Source of Funds (e.g. Academic Building Revenue Bonds, Building Repair Funds, Utility Enterprise Funds)

	<u>Appro./Bonds</u>	<u>Private Gifts</u>	<u>University Funds</u>	<u>TOTAL</u>
FY2020				
FY2021	\$10,500,000			\$10,500,000
FY2022				
FY2023				
FY2024				
TOTAL	<u>\$10,500,000</u>			<u>\$10,500,000</u>

Brief Description

Iowa State University and the state of Iowa are home to the nation's largest biotechnology enterprise. The biosciences are central to the core mission of the university, and biosciences-based industries are a primary economic driver for the state. The strength of bioscience-based businesses and industries in Iowa is driving an increase in students seeking biology-related degrees, and in basic science and translational research activity with industry application. The Bioscience Planning Study, completed in 2014, recommended a two-phased approach to increasing the university's research and teaching facilities for the biosciences. Phase one is nearing completion with the construction and occupancy of the Advanced Teaching and Research Building and the Bessey addition. The implementation of the Bioscience Backfill Project is the second phase of this comprehensive plan. Renovation of these existing facilities will help sustain Iowa's leadership in the increasingly competitive areas of bioscience research and development.

Over 40,000 square feet of vacant space in Bessey Hall and Science II will be reallocated to address an overall lack of teaching and research capacity. The space reallocation will facilitate the demolition of several smaller, outdated structures, which will eliminate more than \$4M in deferred maintenance. Renovations in both buildings will greatly improve the quality and safety of research laboratories, enhance the student experience by improving space dedicated to instruction, collaboration, and student services, and appropriately collocate faculty, students and staff in several departments.

	GSF	NASF	Project Cost per Gross Square Foot
Renovation (80% net-to-gross)	47,000	38,000	\$224

Project Schedule (Elapsed months following Approval of Permission to Proceed by Board)	Previous Action (if any)	
	<u># Months</u>	<u>Cumulative</u>
Planning Phase	<u>12-18</u>	<u>12-18</u>
Bidding	<u>2</u>	<u>14-20</u>
Construction	<u>12-18</u>	<u>38</u>
Opening	<u>2</u>	<u>40</u>

Budget Estimate:

Construction Cost	<u>\$6,850,000</u>
Demolition	<u>950,000</u>
Fixed Equipment*	<u>0</u>
Movable Equipment/Furnishings	<u>500,000</u>
Utility Extensions	<u>60,000</u>
Site Development/Land Acquisition	<u>0</u>
Planning and Design	<u>880,000</u>
Art Work	<u>0</u>
Contingency	<u>780,000</u>
Internal Project Management	<u>480,000</u>
Total Project Budget Estimate	<u>\$10,500,000</u>

* Included with Construction Cost

**Operating Budget Impact:
(full year estimate)**

Opening Cost (nonrecurring)	<u>0</u>
Operations and Maintenance	<u>0</u>
Utilities	<u>0</u>
Other (Grnds/EHS/DPS/Mail)	<u>0</u>
Total	<u>\$0</u>
Annual Capital Renewal	<u>\$158,000</u>

Proposed Source(s) of Operating Funds: General Fund

Proposed Source(s) of Capital Renewal Funds: General Fund

Biosciences Backfill

Biosciences Backfill Project

Name and Priority

Biosciences Backfill
Priority #2 in FY 2021

Category of the Request

Renovation

Statement of the Problem

The 2014 Biosciences Planning Study articulated and quantified an extreme shortage of adequate space, outdated research capacity and capabilities, and existing building infrastructure deficiencies. Multiple approaches and phases were recommended to address the programmatic needs of six departments. The initial phase, which focused on new construction, is nearing completion. The second phase of the project focuses on the reallocation, repurposing and renovation of almost 40,000 square feet of space in Bessey Hall and Science II, vacated by moves to the new facilities.

Bessey Hall was constructed in 1967 and Science II was constructed in 1972; there has been little or no renovation over the subsequent, more than forty years of occupancy. These buildings were not designed and constructed with lab flexibility and modularity as a program element; both the capacity and capability of existing infrastructure are inadequate for current and projected needs. In addition to functionally obsolete space, the quantity and quality of space is limited in every critical programmatic area.

Renovation is required to provide additional and improved research and learning space functionality; antiquated, obsolete research and teaching laboratories will be renovated to meet current demands of both wet and computational lab space.

Description of the Project

The second phase of this comprehensive plan reallocates and renovates the space vacated by moves into the two new facilities. The College of Agriculture and Life Sciences and the College of Liberal Arts and Sciences have developed and prioritized projects required for the second phase. Also included in the project scope is the demolition of multiple small structures along Pammel Drive, which will reduce deferred maintenance by more than \$4.0M; annual utilities, operations, and maintenance costs will be reduced, as well.

These projects will provide additional program space for each of the following departments: Ecology, Evolution and Organismal Biology (EEOB); Entomology; Natural Resource Ecology and Management (NREM); and Genetics, Development, and Cell Biology (GDCB). Projects will move faculty and staff from Science II to Bessey and from the Insectary and Genetics to Science II, along with multiple smaller-scale relocations. This will require phasing and thorough planning. Following this carefully orchestrated move sequence, the university will be able to demolish the following buildings: Insectary, Genetics Laboratory, Genetics Chick Isolation, Genetics Poultry, and Genetics Storage.

These remaining projects associated with the Biosciences Planning Study will remodel nearly 47,000 square feet and will demolish just over 40,000 gross square feet. The projects have been prioritized based on required sequencing and phasing.

- Priority 1 is the most complicated and will remodel nearly 23,000 square feet in Bessey Hall and Science II. This project will improve research and support space for both GDCB and Entomology.
- Priority 2 is expected to remodel nearly 10,000 square feet and is focused on the student experience in Bessey Hall, a teaching hub for the biosciences. Teaching lab capacity will be increased and first floor public spaces modernized, including the Student Services suite.
- Priority 3 is expected to remodel nearly 14,000 square feet in Bessey Hall, continuing the improvement of research and office space for GDCB. Collaboration space will be developed and public spaces updated.
- Demolition of six smaller structures located along the north side of Pammel Drive will complete the work established through the Biosciences Planning Study, reducing deferred maintenance and allowing operating resources to be devoted to other critical institutional priorities.

Justification of the Project

This project addresses:

- The Governor's goal to create a competitive business climate.
- The Board of Regents, State of Iowa's priority to promote and support innovation in teaching, research, and economic development.
- Iowa State University's strategic goal to enhance the university's research profile by conducting high impact research that addresses the grand challenges of the 21st century.
- Iowa State University's strategic goal to improve the quality of life for all Iowans through services and programs dedicated to economic development and the promotion of healthy communities, people, and environments.

Iowa State University has a long-standing commitment to improving people's lives throughout the state, the nation, and the world. The biosciences exert broad impact across multiple disciplines, providing an opportunity for ISU to be at the vanguard of global change.

- The need for additional biosciences facilities was fueled by increasing space deficits due to increasing enrollment, changing pedagogies, and expanding research activity, as well as growing public demand for well-prepared graduates, economic development, and research discoveries. Iowa State University's Biosciences Planning Study was developed with a broad understanding of the long-term space needs for the bioscience departments to maximize the value of any investment in solving this mounting problem.
- The university's biosciences programs have a critical need for high quality disciplinary and multidisciplinary research laboratories, classrooms and teaching laboratories, core support facilities, including computational, biological, wet, and specialized instrumentation laboratories, and collaboration spaces.
- As the state's leading science and technology university, Iowa State has seen its enrollments and opportunities for industry partnership grow steadily during the past decade. The demand had exceeded the limitations of existing bioscience facilities, restricting the university's ability to serve its many stakeholders. Thus, the initial phase of the project developed two new facilities – the Advanced Teaching and Research Building and the Bessey addition.
- The remaining buildings used by the biosciences programs, many of which are more than 40 years old, were neither designed nor constructed with the flexibility and modularity to accommodate collaboration across multiple disciplines and changes in research activity.
- The Biosciences Backfill Projects will increase the capacity and enhance the capabilities of ISU biosciences facilities to support research, teaching, and extension/outreach.

Summary of the Alternatives Considered

This project is a result of a comprehensive planning study that proposed a strategy for additional new space, repurposed and renovated existing space, and the demolition of several antiquated, obsolete structures. ATRB and the addition to Bessey Hall have resulted in critical, additional, programmatic space, which facilitate these subsequent space renovations.

Currently, many biosciences programs are housed in a number of facilities that are more than 40 years old; the renovation of vacated academic space in core campus is the most economical, efficient, and sustainable solution.

Estimated Costs and Source of Funds

State Appropriations \$10,500,000

	Appropriations	Private Gifts	University Funds	Total by year
FY 2020				
FY 2021	\$10,500,000			\$10,500,000
FY 2022				
FY 2023				
FY 2024				
Total	\$10,500,000			\$10,500,000

Operating Expenses

Operating Budget Impact:

Operations and Maintenance None; there will be a reduction in operation and maintenance costs due to the demolition of five buildings.

Utilities None; there will be a savings of approximately \$160,000 annually due to the demolition of five buildings.

Other (Grounds/Mail/EHS/DPS) No additional costs anticipated.

Methods used to determine the costs:

Estimates of the Operating Budget Impact are based on actual costs and metered utilities for existing space and correlation with similar building types.

Proposed source of funds: General Fund

Annual Capital Renewal Amount: \$158,000

Project Schedule and History of Previous Action

The anticipated schedule following funding of the project is:

- Planning and Design Phase- 12-18 months
- Bidding and Contract Award- 2 months
- Construction Phase- 12-18 months
- Occupancy- 2 months
- Total number of months: 40 months

Previous action by the Board:

None.

Previous request and any changes in dollar amounts or priorities:

None.

Institution	Project Title	Category of Request	Priority
Iowa State University	Science Building Capital Renewal Phases 1, 2, and 3	Remodeling	BOR# _____ ISU# 3

Estimated Cost by Year and Source of Funds (e.g. Academic Building Revenue Bonds, Building Repair Funds, Utility Enterprise Funds)		
	<u>Appro./Bonds</u>	<u>TOTAL</u>
FY2020		
FY2021		
FY2022	\$20,000,000	\$20,000,000
FY2023	\$20,000,000	\$20,000,000
FY2024	\$20,000,000	\$20,000,000
TOTAL	\$60,000,000	\$60,000,000

Brief Description

Thirty-eight percent of Iowa State University's General Fund building space was constructed between 1960 and 1980; almost 1.6 million gross square feet were built prior to 1960. Aging science facilities are most heavily impacted due to the changing nature of scientific investigation and the increased demands on the building infrastructure systems required to support modern, scientific learning and research. Existing space does not support the goals of collaborative learning and research, and is neither efficient nor effective. The condition of this space is also limiting research growth and activities. Antiquated facilities can negatively affect overall learning effectiveness and student retention. Older buildings do not provide informal interaction spaces that encourage and support team-focused activities and sharing information across disciplines.

Aging buildings do not have the infrastructure necessary to support current teaching and research; mechanical and electrical systems have inadequate capacity and lack flexibility in the delivery of building services to the bench top. Labs are small and lack the flexibility and modularity needed to accommodate multidisciplinary teams, research grants, and experiential learning. Information technology infrastructure should be modernized and expanded to support the increasing reliance on technology in every facet of scholarship. Some of the buildings that require comprehensive systems updates are Gilman Hall, Kildee, Bessey Hall and Science II. Many of these buildings require extensive updating in almost every area: building envelope, building infrastructure, fire and life safety, and accessibility. Renovation of occupied buildings must be phased; the project scope for each phase will be developed and implemented incrementally to match available funding.

Renovation: (60% net-to-gross)	GSF 133,000	NASF 80,000	Project Cost per Gross Square foot \$451
-----------------------------------	-----------------------	-----------------------	--

Project Schedule (Elapsed months following Approval of Permission to Proceed by Board)			Previous Action (if any)
	<u># Months</u>	<u>Cumulative</u>	
Planning Phase	<u>12</u>	<u>12</u>	
Bidding	<u>2</u>	<u>14</u>	
Construction	<u>24</u>	<u>38</u>	
Opening	<u>1</u>	<u>39</u>	

Budget Estimate:		Operating Budget Impact: (full year estimate)	
Construction Cost	<u>\$44,000,000</u>	Opening Cost (nonrecurring)	<u>0</u>
Fixed Equipment*	<u>0</u>	Operations and Maintenance	<u>\$220,000</u>
Movable Equipment	<u>4,820,000</u>	Utilities	<u>290,000</u>
Utility Extensions	<u>120,000</u>	Other (Grnds/EHS/DPS/Mail)	<u>45,000</u>
Site Development/Land Acquisition	<u>60,000</u>	Total	<u>\$555,000</u>
Design and Supervision	<u>5,000,000</u>	Annual Capital Renewal	<u>\$900,000</u>
Art Work	<u>0</u>		
Contingency	<u>2,880,000</u>		
Internal Project Management	<u>3,120,000</u>		
Total Project Budget Estimate	<u>\$60,000,000</u>	Source of Operating Funds: General Fund	
* Included with Construction Cost		Source of Annual Capital Renewal: General Fund	

Institution	Project Title	Category of Request	Priority
Iowa State University	Fire and Environmental Safety	Fire and Environmental Safety Resolution	BOR#____ ISU#____

Estimated Cost by Year and Source of Funds (e.g. Academic Building Revenue Bonds, Building Repair Funds, Utility Enterprise Funds)

	Appropriations	TOTAL
FY2020	\$ 4,000,000	\$ 4,000,000
FY2021	\$ 2,000,000	\$ 2,000,000
FY2022	\$ 2,000,000	\$ 2,000,000
FY2023	\$ 2,000,000	\$ 2,000,000
FY2024	\$ 2,000,000	\$ 2,000,000
TOTAL	\$ 12,000,000	\$ 12,000,000

Brief Description

The ISU Department of Environmental Health and Safety, in cooperation with the State Fire Marshal, has identified, documented, and prioritized all known deficiency corrections. A priority-based program has been developed to correct these high-risk deficiencies. The most current estimate to correct remaining fire safety deficiencies identified by the State Fire Marshal in General Fund facilities is \$5,647,000. This includes the cost of adding sprinkler systems to seven buildings to address fire corridor deficiencies. The Top 25 list includes EH&S priorities for some of the other buildings that need sprinkler systems, increasing the overall funding need to almost \$7,700,000. Funding for correcting fire safety deficiencies has been allocated from the general building repair fund.

	GSF	NASF	Project Cost per Gross Square Foot
New Construction Building	N/A	N/A	N/A
Renovation	N/A	N/A	N/A

Project Schedule (Elapsed months following Approval of Permission to Proceed by Board)	# Months	Cumulative	Previous Action (if any)
			None
Planning Phase	<u>1-3</u>	<u>1-3</u>	
Bidding	<u>1</u>	<u>2-4</u>	
Construction	<u>3-6</u>	<u>5-10</u>	
Opening	<u>1</u>	<u>6-11</u>	

Budget Estimate:		Operating Budget Impact: (full year estimate)	
Construction Cost	<u>\$9,300,000</u>	Opening Cost (nonrecurring)	\$ <u>0</u>
Fixed Equipment	<u>0</u>	Operations and Maintenance	<u>0</u>
Movable Equipment/Furnishings	<u>0</u>	Utilities	<u>0</u>
Utility Extensions	<u>0</u>	Annual Capital Renewal	<u>0</u>
Site Development/Land Acquisition	<u>0</u>	Other (specify)	<u>0</u>
Design and Supervision	<u>1,450,000</u>	Total	\$ <u>0</u>
Art Work	<u>0</u>		
Contingency	<u>650,000</u>		
Internal Project Management	<u>600,000</u>	Annual Capital Renewal	\$ <u>0</u>
Total Project Budget Estimate	<u>\$12,000,000</u>	Source of Operating Funds: General Fund	

Fire and Environmental Safety

Fire and Environmental Safety

The university has a responsibility to provide a safe environment for the university community.

The State Fire Marshal’s Office and the Iowa State University Environmental Health and Safety Office have identified a number of fire and environmental safety deficiencies in Iowa State University facilities. Fire and environmental safety issues fall into many different categories, which include the following: asbestos and lead abatement, building fire safety, electrical repairs, emergency lighting and exit identification, hazardous material handling facility improvements, fire alarms, general safety, second exits, sprinkler systems, and ventilation improvements. The Building Safety Priority List includes both small and large individual projects in each of these categories. ISU includes sprinklers as a requirement for all new construction and major renovation projects in General Fund and residence facilities. The Department of Residence has sprinkler systems in all existing residence halls.

In many cases, the university is required to follow established codes, laws, or regulations. Many of these projects are required by outside agencies, including the State Fire Marshal, the Iowa Division of Labor (IOSHA), and the Environmental Protection Agency. The university prioritizes risks and undertakes the most serious deficiencies as soon as funding is available and the work can be practically accomplished. The Board of Regents and the Legislature have been supportive of the university’s efforts and have provided periodic appropriations that have allowed deficiency corrections to many buildings. The changing codes, laws, and regulations combined with the change in use of buildings, continue to add to the list of conditions that must be addressed. A plan is currently underway to prioritize potential projects and focus additional resources to correct the high-risk conditions.

Facilities Governance Report- Table E2
Health and Life Safety Projects to be completed in FY 2018 in General Fund Facilities
(All sources of funds)

Building	Description	Fund Source	Estimated Costs
Various	Miscellaneous correction of Fire Marshal violations	Overhead Use	\$478,000
Various	Fire alarm panel replacement	Life Safety	\$100,000
	Total		\$578,000

Fire & Life Safety Deficiencies Top 25

Building	Description	Estimated Costs
National Swine Research and Information Center	Sprinkler modifications related to loss of NLAE fire pump	\$300,000
Gilman Hall	Sprinkler addition	\$1,600,000
Black Engineering	Sprinkler coverage addition where needed	\$200,000
Coover Hall	Sprinkler addition	\$400,000
Carver Hall	Sprinkler and standpipe addition	\$600,000
Physics Hall	Sprinkler addition	\$320,000
Music Hall	Sprinkler addition	\$350,000
Zaffarano Physics Addition	Modifications required to develop a one hour corridor rating	\$15,000
Multiple	Install fire alarm strobes in general use restrooms in 7 buildings	\$20,000
Forestry & Plant Pathology Greenhouses	Install electrical disconnects on exterior HVAC units	\$30,000
Veterinary Medicine	Seal rail system through the BMS commons with fire rated material	\$20,000
Multiple	Install stairway identification signs in 8 buildings	\$20,000
Firemanship Training & Central Receiving	Install protection for the gas meters	\$5,000
Multiple	Provide paved exit discharge from 11 buildings	\$35,000
Multiple	Install emergency gas shut-off buttons in 10 buildings	\$100,000
Ross Hall	Sprinkler addition	\$450,000
Science Hall II	Sprinkler addition	\$600,000
Science Hall	Sprinkler addition	\$380,000
Town Engineering	Sprinkler addition	\$440,000
Horticulture Hall	Sprinkler addition	\$220,000
Kildee Hall (Partially sprinklered)	Sprinkler addition	\$360,000
General Services Building (Partially sprinklered)	Sprinkler addition	\$375,000
Meats Laboratory	Sprinkler addition	\$220,000
Heady & East Hall	Sprinkler addition	\$360,000
LeBaron Hall	Sprinkler addition	\$250,000
	Total Costs	\$7,670,000

Institution	Project Title	Category of Request	Priority
Iowa State University	Deferred Maintenance and Campus Safety Improvements	Deferred Maintenance	BOR# ISU#_____

Estimated Cost by Year and Source of Funds (e.g. Academic Building Revenue Bonds, Building Repair Funds, Utility Enterprise Funds)

	Appropriations	TOTAL
FY2020	\$ 4,500,000	\$ 4,500,000
FY2021	\$ 8,000,000	\$ 8,000,000
FY2022	\$ 11,400,000	\$ 11,400,000
FY2023	\$ 11,900,000	\$ 11,900,000
FY2024	\$ 12,300,000	\$ 12,300,000
TOTAL	\$ 48,100,000	\$ 48,100,000

Brief Description

The university currently maintains a backlog of all deferred maintenance issues. This request is part of a multi-year program to eliminate the backlog of needs. The FY 2017 level of deferred maintenance was approximately \$394 million for General Fund facilities.

Funds to address accumulated deferred maintenance allow the university to make significant positive progress; appropriate levels of annual capital renewal expenditures will allow the university to take corrective action and reduce the overall level of deferred maintenance. Aging infrastructure, especially in science buildings, is a huge concern. Interruption of research and instructional activities due to building system failures could have a serious impact on course delivery and scholarly research.

	GSF	NASF	Project Cost per Gross Square Foot
New Construction	N/A	N/A	N/A
Renovation	N/A	N/A	N/A

Project Schedule (Elapsed months following Approval of Permission to Proceed by Board)	# Months	Cumulative	Previous Action (if any)
Planning Phase	<u>1-3</u>	<u>1-3</u>	
Bidding	<u>1</u>	<u>2-4</u>	
Construction	<u>3-12</u>	<u>5-16</u>	
Opening	<u>1</u>	<u>6-17</u>	

Budget Estimate:		Operating Budget Impact: (full year estimate)	
Construction Cost	<u>\$36,100,000</u>	Opening Cost (nonrecurring)	\$ <u>0</u>
Demolition	<u>0</u>	Operations and Maintenance	<u>0</u>
Fixed Equipment	<u>0</u>	Utilities	<u>0</u>
Movable Equipment/Furnishings	<u>0</u>	Other (Grnds/EHS/DPS/Mail)	<u>0</u>
Utility Extensions	<u>0</u>	Total	\$ <u>0</u>
Site Development/Land Acquisition	<u>0</u>		
Design and Supervision	<u>5,300,000</u>		
Art Work	<u>0</u>		
Contingency	<u>4,200,000</u>		
Internal Project Management	<u>2,500,000</u>		
Total Project Budget Estimate	<u>\$48,100,000</u>	Annual Capital Renewal	\$ <u>0</u>

Source of Operating Funds: General Fund

Deferred Maintenance and Campus Safety Improvements

Deferred Maintenance and Campus Safety Improvements

As enrollment has grown over 40% over the past 10 years, general university facility space has grown only 4%, resulting in more intense use of current facilities. The demand for custodial services and maintenance and repairs of campus buildings and grounds have grown due to increased wear and tear. Although the budget for facilities services has had modest increases, funding remains constrained and only affordable levels of service continue to be provided in the areas of building maintenance, custodial services, and grounds maintenance.

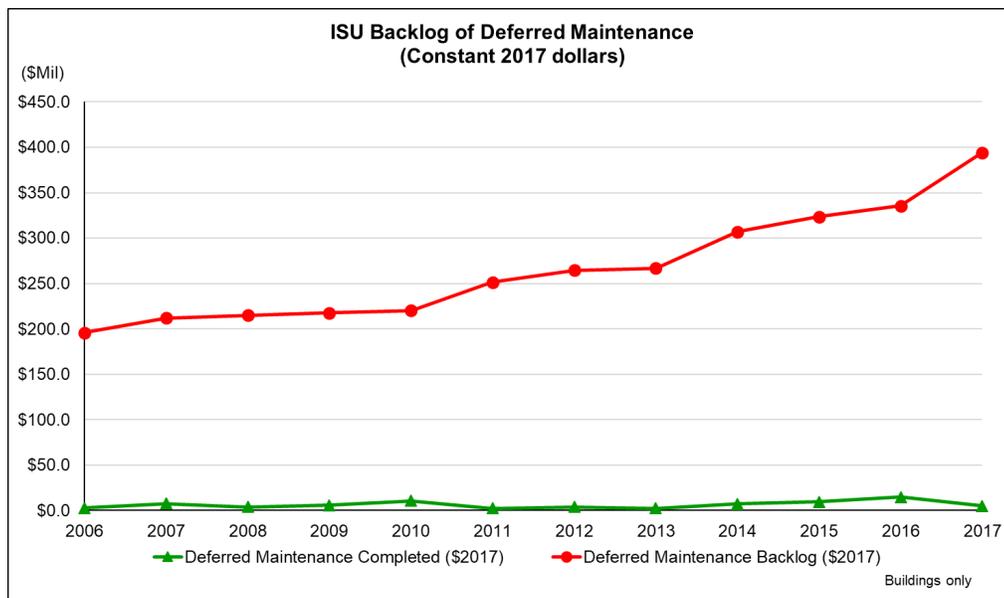
The backlog of deferred maintenance continues to compound given the lack of funding and the increasing age of the facilities. This backlog is based upon a comprehensive, systematic process for identifying the maintenance and repair requirements for general university buildings. The methodology involves assessing general fund buildings in nine different system categories (Envelope, HVAC, Roof, Window, Site, Electric, Plumbing, Interior, and Elevators). The assessment takes into account the replacement value of the building, age of the building, value of the systems within the building, age of the systems, and condition of those systems.

Total deferred maintenance is approximately \$394M at Iowa State University. Aging facilities, especially in science buildings, pose a serious concern. Infrastructure failures in science buildings may be detrimental to on-going research projects, highly sensitive research equipment, and archived sample storage.

Annual funds available for deferred maintenance projects in General Fund facilities are now around \$5.5M. There is also some reduction of the deferred maintenance backlog through capital projects because some items are addressed when buildings are renovated or removed.

The University's Maintenance and Improvement Committee meets regularly to review and prioritize maintenance and improvement requests and allocate building repair resources and represents teaching, research, student affairs, business services, financial affairs, and facilities. Requests are prioritized by the negative impact on teaching/research/outreach, situations that significantly compromise safety, or the ability of the university to continue to provide services. This process allows the university to strategically prioritize and address its most critical needs within the available resources. When feasible, facilities planners and project managers develop partnerships with colleges and departments in order to complete deferred maintenance items while completing major renovation projects.

The consequences of not meeting recommended funding levels are the continuing growth of the deferred maintenance backlog, with the associated risk of facility system failures and impacts on instruction and research. Sustaining and renewing university facilities requires significant funding, above that available for annual capital renewal projects. The Five Year Capital Plan includes an annual request to reduce the backlog, but even at these rates of expenditure, the backlog is growing faster than the funds available to remedy the need. Increases are needed in both capital funds to catch up and operating funds for maintenance and repairs to keep up.



Iowa State University- Facilities Governance Report 2018

Top 25 Deferred Maintenance Items

> \$100,000

Deferred Maintenance Activities Top 25

	BUILDING	DEFICIENCY	ANTICIPATED COST
1	Library	Restroom Renovations, Phase 1	\$ 500,000
2	Zaffarano Hall	Replace Roof Sections L & M	\$ 222,000
3	Bessey Hall	Replace Roof	\$ 569,000
4	Food Science	Replace Elevator	\$ 450,000
5	Zaffarano Hall	Fan Coil Replacement, Phase 3	\$ 300,000
6	Music Hall	Replace Air Handler #2	\$ 200,000
7	Library	Restroom Renovation, Phase 2	\$ 635,000
8	Food Science	Replace Rotted Wood Windows	\$ 160,000
9	Human Nutritional Science	AHU and Humidity	\$ 250,000
10	Heady Hall	Electric Panel Replacements	\$ 625,000
11	Town Hall	Replace Roof	\$ 1,106,000
12	Zaffarano Hall	Fan Coil Replacement, Phase 4	\$ 300,000
13	East Hall	Roof Repair, Painting, Tuck pointing, and Stone Repair	\$ 782,000
14	Library	Curtain Wall Repair	\$ 636,000
15	Carver Hall	Hydronic Heating Replace Mains, Risers, Valves	\$ 500,000
16	Veterinary Medicine	Domestic Water Piping, Phase 4	\$ 250,000
17	Meats Laboratory	Replace Roof, Sections A to H	\$ 1,000,000
18	Carver Hall	Replace Heating System, Phase I	\$ 500,000
19	Design	Replace Loading Dock Paving	\$ 250,000
20	Veterinary Medicine	Replace Roof, Section 3	\$ 970,000
21	Zaffarano Hall	Fan Coil Unit Replacements, Phase V	\$ 300,000
22	Pearson Hall	Replace Failing Mixing Boxes	\$ 120,000
23	Agronomy Hall	Repair Exterior Steps, Tuck pointing, Painting	\$ 400,000
24	Carver Hall	Upper Floor Window Replacement	\$ 673,000
25	Carver Hall	Replace Heating System, Phase II	\$ 500,000
		TOTAL	\$ 12,198,000