University Of Minnesota

Projects Summary

($ in thousands)

Project Title	Rank	Fund	Project Requests for State Funds 2016	2018	2020	Gov's Rec 2016	Gov's Planning Estimates 2018	2020
Higher Education Asset Preservation and Replacement (HEAPR)	1	GO	100,000	100,000	100,000	55,000	55,000	55,000
Chemistry and Advanced Materials Science Building	2	GO	27,167	0	0	27,167	0	0
Health Sciences Education Facility	3	GO	66,667	0	0	66,667	0	0
Plant Growth Research Facility	4	GO	4,400	0	0	4,400	0	0
Academic and Student Experience Investments	5	GO	16,000	0	0	0	0	0
Pillsbury Hall Renovation	6	GO	22,000	0	0	0	0	0
Total Project Requests			236,234	100,000	100,000	153,234	55,000	55,000
General Obligation Bonds (GO) Total			236,234	100,000	100,000	153,234	55,000	55,000

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AT A GLANCE

- Five Campuses (Crookston, Duluth, Morris, Rochester, Twin Cities
- Eighteen Research and Outreach Centers and Field Stations throughout the state (previously referred to as Agricultural Experiment Stations)
- FY16 approved budget of $3.7 billion
- 2014: 19,633 faculty and staff employees; 6,203 graduate student and professionals in training employees
- Fall 2014 Enrollment:
  - 43,413 Undergraduate
  - 13,426 Graduate
  - 4,088 First Professional
  - 6,550 Non Degree
  - 67,477 Total

PURPOSE

The University of Minnesota's statutory mission is to offer undergraduate, graduate and professional instruction through the doctoral degree, and be the primary state supported academic agency for research and extension service (MN Statute 135A.052). The University's mission is threefold: research and discovery, teaching and learning, and outreach and public service.

The University of Minnesota is the state's only land grant and research institution, and has a unique responsibility to better the lives of Minnesotans through education, research and public engagement. As one of the nation's top research institutions, the University is a venue where human talent, ideas and innovations, and discoveries and services converge to advance Minnesota's economy and quality of life.

In carrying out its mission on five campuses and throughout the state, the University contributes directly to the following statewide outcomes:

- **A thriving economy that encourages business growth and employment opportunities;**
- **Minnesotans have the education and skills needed to achieve their goals;**
- **All Minnesotans have optimal health, and Sustainable options to safely move people, goods, services & information.**

STRATEGIES

The Board of Regents adopted a new strategic plan for the Twin Cities campus at its October 2014 meeting. This plan aligns with existing plans for the system campuses and provides a roadmap for advancing the University's mission over the next three to five years. The plan articulates a new, inspirational vision: "[to] be preeminent in solving the grand challenges of a diverse and changing world." In pursuit of this vision, the University will:

- Leverage its breadth and depth to capitalize on its exceptional students, faculty, staff and location to generate and disseminate new knowledge and insights
- Create an educated populace able to identify, understand, and solve demanding problems
- Leverage divergent paths of knowledge and creativity to address grand challenges
- Partner with communities and the people of the State of Minnesota to benefit the common good

To this end, the University is advancing four broad goals, each with related strategies and tactics:

- **Goal 1) Build an exceptional University where grand societal challenges are addressed.** Strategies – Educate, cultivate, and empower leaders to foster institutional and societal change; target resources that will build capacity to harness the University's depth and breadth to address these grand challenges; prepare students who can uniquely contribute to solving grand societal

challenges; transform curricula in a way that combines grand challenges with disciplines; and coordinate and leverage research in institutionally crosscutting areas of strength

- **Goal 2) Support excellence and, with intention, reject complacency**. Strategies – Establish incentives for creative disruption and accept productive tension; increase efforts to empower individual initiatives; streamline rules and regulations; measure and set goals for meaningful diversifying experiences
- **Goal 3) Establish a culture of reciprocal engagement, capitalizing on our unique location.** Strategies – Better leverage our location for the mutual benefit of the University and the community to contribute to and benefit from a vibrant and enriching economic, creative, social, and intellectual environment; and clearly define and embrace what it means to be a land grant research university in the 21st century
- **Goal 4) Aggressively recruit, retain and promote field shaping researchers and teachers.** Strategies – Build a pipeline to recruit and retain the best and brightest field shaping teachers and researchers; support their work with needed infrastructure and a culture of high expectations; reduce barriers to productive work across disciplines and advance partnerships between institutions; and accelerate transfer of knowledge for the public good

These objectives are the foundation of a long term capital plan that balances programmatic needs against facility condition related investments, distributes opportunity geographically throughout the UMN system and completes in-process capital investment sequences.

At A Glance

- The statutory mission of the University of Minnesota is to "offer undergraduate, graduate, and professional instruction through the doctoral degree, and be the primary state-supported academic agency for research and extension services" (M.S. 135A.052, subd. 1).
- University of Minnesota facilities comprise 29.4 million gross square feet including classrooms, research labs, clinics, offices, libraries, performance space, student unions, housing, and utilities. Being responsible stewards of this portfolio requires ongoing renewal investments.
- The University has incorporated four strategic objectives into its long-range capital planning process.
  - Remove or improve buildings rated as Critical by the Facility Condition Assessment (FCA).
  - Expand capacity in STEM programs.
  - Advance the Health Sciences
  - Modernize St. Paul campus research laboratories

Factors Impacting Facilities or Capital Programs

For more than 150 years, the University of Minnesota has met the changing needs of the state's citizens, businesses, farmers, and public institutions. The University must continuously strengthen its role as the state's only major research university, as its land grant institution, and as its magnet for students, faculty, professionals, entrepreneurs, and civic and artistic leaders.

As a large, multi-faceted research institution, a variety of factors affect the University's demand for facilities and capital programs. Four issues that are relevant to the 2016 capital request and future capital plans are outlined below:

- Removal of buildings rated as Critical by the Facility Condition Assessment (FCA) - Currently, about one third of the buildings (7.7 million square feet) on the Twin Cities campus alone are rated critical or poor in the FCA. Still, students study and live in those buildings, staff work in those buildings, faculty office in those buildings, and patients receive care in those buildings. This is in conflict with our goal of being an "exceptional University". Current plans put a strong emphasis on fixing or replacing some of our worst buildings. Higher Education Asset Preservation and Replacement (HEAPR) funding remains at the core of this strategy. Proposed investments involving Pillsbury, Health Sciences Education Facilities, Biological Sciences Greenhouse, and the Academic and Student Experience Investments are all designed to advance this strategic goal.

- Advancing the Health Sciences – The University is home to Minnesota's only public medical school in addition to health science schools for dentistry, public health, pharmacy, nursing and veterinary medicine. The University's Academic Health Center (AHC) offers 62 accredited professional degrees, educates 6,400 students, and plays a key role in educating Minnesota's health care workforce, with two-thirds of the state's health professionals educated in the AHC. Current plans call for three large investments in improving the educational and clinical research spaces for the Medical School and the other colleges of the Academic Health Center (AHC). Phase I and II involve renovation and improved utilization of existing space in the AHC plus some new construction for an integrated Health Sciences Education Facility and the construction of a new Clinical Sciences Facility envisioned in the $10 million of funding provided to the University by the State as an outcome of the 2015 session.

- Modernizing St. Paul campus research laboratories – University leadership has identified a need for facilities capable of supporting research to address the challenges of determining how safe, affordable, nutritious food can be provided for 9 billion people over the next 40 years while ensuring environmental sustainability, strengthening economic stability, and promoting public health. The State provided funding to replace the Veterinary Isolation Facility in the 2015 session. The University is requesting funds in 2016 to replace the obsolete and FCA critical Biological Sciences Greenhouse and to improve underutilized space in the Biological Sciences Center. Additional projects are planned in future years.

- Expanding capacity in STEM programs – Student demand for Science, Technology Engineering, and Math (STEM) programs as well as State performance measures related to STEM degrees has increased the need for additional laboratory facilities. Chemistry is a core component of most STEM programs and an inadequate supply of chemistry labs is restricting the University's ability to meet demand and move students through the necessary course sequences. The University received design funding for the UMD Chemistry and Advance Materials Science building in 2014 and has included the balance of the project on the 2016 Capital Request. The Plant Growth Research Facility and Academic and Student Experience Investment program in the 2016 Capital Request make investments in STEM related teaching and research laboratories on the UMC and UMTC campuses. Additional projects are planned in future years.

Self-Assessment of Agency Facilities and Assets

University of Minnesota facilities comprise 29.4 million gross square feet (GSF) including classrooms, research labs, clinics, offices, libraries, performance space, student unions, housing, and utilities. Owning and operating this large and diverse portfolio of more than 900 facilities is critical to supporting the University's mission of teaching, research and outreach. Being responsible stewards of this portfolio requires ongoing renewal investments from various sources.

While there is an ongoing effort on each campus to keep buildings clean and well maintained, as buildings age and programs evolve, it becomes necessary to invest additional resources to keep a building functional and operating. The Facilities Condition Assessment (FCA) and a Building by Building Strategy form the basis of the University's long-range facility renewal planning efforts.

Agency Process for Determining Capital Requests

Long range strategic facility planning at the University of Minnesota begins with the academic planning process. Each year Vice Presidents, Chancellors, and Deans are asked to identify their most important program priorities and the facility improvements necessary to support those programs as part of the budget process. Through the academic planning process, academic leadership establishes the priorities for each college and campus. Facilities Management simultaneously evaluates the current condition of the buildings and infrastructure that support all academic programs. The capital planning process merges the academic priorities, available financial resources, facility needs, and facility conditions into an institution-level strategic facility plan (six-Year Capital Plan) that is reviewed and approved by the Board of Regents every year.

In addition to academic priority and facility condition, factors included in the long-range strategic facility plan include:

- *Projected size of future bonding bills*
- *Debt and operating cost impact*
- *Private fundraising capacity*
- *Timing and sequencing of projects*
- *Impact on academic programs*
- *Health, safety, and regulatory requirements*
- *Geographic distribution*

The resulting Six-Year Capital Plan advances the University's highest capital priorities while retaining flexibility in support of emerging strategic initiatives. Investments are targeted to programs with academic strategic value.

Major Capital Projects Authorized in 2014 & 2015

2014 Appropriation	($ in Thousands)
HEAPR	$42,500
Tate Hall	$56,700
Duluth Chemical Sciences / Advanced Materials	$1,500
Crookston Wellness Center	$10,000
Lab Improvement Fund	$8,667

2015 Appropriation	($ in Thousands)
Veterinary Isolation	$18,000
Wilmar Poultry Research Facility	8,529

($ in thousands)

Higher Education Asset Preservation and Replacement (HEAPR)

AT A GLANCE

2016 Request Amount:	$100,000
Priority Ranking:	1
Project Summary:	This request is for funds to renew existing campus facilities and infrastructure in accordance with Minnesota Statutes, section 135A.046.

Project Description

The purpose and use of Higher Education Asset Preservation and Replacement (HEAPR) funds is defined in statute 135A.046 Asset Preservation and Replacement. Funds are intended to preserve and renew existing campus facilities by funding five kinds of projects: Accessibility, Building Systems (e.g. exterior envelope, mechanical, and electrical systems), Energy Efficiency, Health and Safety (e.g. hazardous material abatement, building code compliance), and infrastructure. HEAPR funds are used throughout the University of Minnesota system. Funds are allocated to campuses and research stations based on facility need and overall quantity of space. The University regularly reports on the status of its HEAPR funding to Minnesota Management and Budget and the Legislature.

Project Rationale

HEAPR funds are essential in supporting the teaching, research, and service mission of the University. The University's mission will be compromised without continued, sustained reinvestment in buildings and infrastructure. The University's capital budget principles emphasize investment in existing facilities and infrastructure to extend useful life and to ensure the health, safety, and well-being of building occupants. Individual projects to be funded with HEAPR have been identified and prioritized through the University's Facility Condition Assessment (FCA) process. The FCA is a comprehensive systemwide evaluation of the condition of the University of Minnesota's campus facilities and infrastructure portfolio. FCA data is used to triage existing buildings into those that need long-term investments, those that need short-term investments, and those where no investment is required, in alignment with academic priorities.

HEAPR funds are used throughout the University of Minnesota system and are allocated to campuses and research stations based on facility need and overall space. They are essential in supporting the teaching, research, and service mission of the University. Funds keep people safe and make the campuses accessible for all Minnesotans. The value of the State's past investments is maximized by extending the functionality and useful life of existing buildings. HEAPR dollars are flexible, allowing the University to respond quickly to emergencies and to respond to unique opportunities. Regulatory compliance items, e.g. elevators, storm water and building codes, and other projects that are generally smaller than traditional capital request projects are funded with HEAPR allocations. These projects move faster, put people to work quicker, and provide different firms an opportunity to participate in design and construction at the University. HEAPR projects are green, since renewing an existing facility is more sustainable than new "green" construction.

Other Considerations

None.

Impact on Agency Operating Budgets

None

Description of Previous Appropriations

The University includes HEAPR in each capital request. The University received $50 million in 2012, no appropriation in 2013, $42.5 million in 2014 and no appropriation in 2015.

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Governor's Recommendation

The Governor recommends $55 million in general obligation bonds for this request. Also included are budget estimates of $55 million for each planning period for 2018 and 2020.

($ in thousands)

Higher Education Asset Preservation and Replacement (HEAPR)

PROJECT FUNDING SOURCES

Funding Source	Prior Years	FY 2016	FY 2018	FY 2020
State Funds Requested				
General Obligation Bonds	$ 42,500	$ 100,000	$ 100,000	$ 100,000
Funds Already Committed				
Pending Contributions				
TOTAL	**$ 42,500**	**$ 100,000**	**$ 100,000**	**$ 100,000**

TOTAL PROJECT COSTS

Cost Category	Prior Years	FY 2016	FY 2018	FY 2020
Property Acquisition	$ 0	$ 0	$ 0	$ 0
Predesign Fees	$ 425	$ 1,000	$ 1,000	$ 1,000
Design Fees	$ 3,400	$ 8,000	$ 8,000	$ 8,000
Project Management	$ 1,594	$ 3,750	$ 3,750	$ 3,750
Construction	$ 37,081	$ 87,250	$ 87,250	$ 87,250
Relocation Expenses	$ 0	$ 0	$ 0	$ 0
One Percent for Art	$ 0	$ 0	$ 0	$ 0
Occupancy Costs	$ 0	$ 0	$ 0	$ 0
Inflationary Adjustment	$ 0	$ 0	$ 0	$ 0
TOTAL	**$ 42,500**	**$ 100,000**	**$ 100,000**	**$ 100,000**

IMPACT ON STATE OPERATING COSTS

Cost Category	FY 2016	FY 2018	FY 2020
IT Costs	$ 0	$ 0	$ 0
Operating Budget Impact ($)	$ 0	$ 0	$ 0
Operating Budget Impact (FTE)	0.0	0.0	0.0

SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS

	Amount	Percent of Total
General Fund	$ 100,000	100 %
User Financing	$ 0	0 %

STATUTORY REQUIREMENTS

The following requirements will apply to projects after adoption of the bonding bill.

M.S. 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)	Unsure
M.S. 16B.335(3): Predesign Review Required (by Dept. of Administration)	
Does this request include funding for predesign?	Yes
Has the predesign been submitted to the Department of Administration?	No
Has the predesign been approved by the Department of Administration?	No
M.S. 16B.325(1): Sustainable Building Guidelines Met	Yes
M.S. 16B.325(2) and M.S. 16B.335(4): Energy Conservation Guidelines	
Do the project designs meet the guidelines?	Yes
Does the project demonstrate compliance with the standards?	Yes
M.S. 16B.335(5 & 6): Information Technology Review (by MN.IT)	N/A
M.S. 16A.695: Public Ownership Required	Yes
M.S. 16A.695(2): Use Agreement Required	No
M.S. 16A.695(5): Program Funding Review Required (by granting agency)	N/A
M.S. 16A.86 (4b): Matching Funds Required	N/A
M.S. 16A. 642: Project Cancellation in 2021	Yes
M.S. 16A.502 and M.S. 16B.31 (2): Full Funding Required	Yes
M.S. 174.93: Guideway Project	
Is this a Guideway Project?	No
Is the required information included in this request?	N/A

($ in thousands)

Chemistry and Advanced Materials Science Building

AT A GLANCE

2016 Request Amount:	$27,167
Priority Ranking:	2
Project Summary:	This request is for funds to design, construct, furnish and equip a new science and engineering laboratory building on the Duluth campus.

Project Description

This project will construct approximately 58,000 square feet of research laboratories, instructional laboratories, teaching space, offices, and meeting space for the Swenson College of Science and Engineering on the Duluth Campus. The building is conceived as three stories with a mechanical and electrical penthouse. The research laboratory space, consisting of flexible wet and dry labs with adequate utilities, environmental controls and modern safety accommodations, will serve the needs of evolving research and teaching pedagogy.

Project Rationale

The Duluth campus is committed to supporting programs that work to expand the State's Science, Technology, Engineering, and Math (STEM) workforce, in addition to creating an inclusive campus climate through curricula and programs that prepare all students to be successful contributing members of diverse and global communities. Scholarship and research, both basic and applied, are foundations for new discoveries and knowledge, and for economic growth.

The proposed new chemistry and materials science facility will provide much needed new facilities for the Department of Chemistry and Biochemistry and advance an emergent Material Science and Engineering program. The campus has a need for additional upper division or advanced instructional labs in which students receive training on modern instrumental, experimental, and computational techniques. To accomplish this, laboratories need to have both student work spaces and instructional support areas. As new faculty are hired due to retirements in the next 5-10 years, larger and more instrument-rich research programs will be established requiring more research space.

Attracting high quality students in the STEM fields, as well as excellent faculty, who seek a collaborative environment to conduct leading-edge research and teach in interdisciplinary areas, will lead to increased external funding, economic growth and competitiveness, and greater technology- and knowledge- transfer to the state and region. The new research and education programs in material science and engineering will certainly broaden the impact that UMD and the Swenson College of Science and Engineering have on regional and local industries. To achieve these outcomes the campus needs modern laboratory space and rooms with specialized uses (instrument rooms, cold rooms, autoclave room, etc).

The existing Chemistry building was the first building constructed at UMD in 1948, and was not designed to be dedicated to Chemistry. Utility infrastructure is outdated, frequently in need of repair, and cannot support 21st century science. This building has numerous deficiencies including a lack of adequate eyewashes and showers, lack of chemical storage space, rusty and poorly ventilated under

the hood storage, very old and poorly designed labs, lack of adequate wall space for chemical storage cabinets and gas cylinders, lack of adequate supply of wall or bench mounted electrical outlets, and water leaks. In addition, assessments have noted corroded gas lines and gas valves, poor air handling systems, and an elevator which is often out of service. Many of these have the potential to compromise the health and safety of building occupants.

This project will construct approximately 51,000 square feet of research laboratories, instructional laboratories, teaching space, offices, and meeting space for the Swenson College of Science and Engineering on the Duluth Campus. The building is conceived as three stories with a mechanical and electrical penthouse. The research laboratory space, consisting of flexible wet and dry labs with adequate utilities, environmental controls and modern safety accommodations, will serve the needs of evolving research and teaching pedagogy.

Other Considerations

None.

Impact on Agency Operating Budgets

Annual program operating costs for additional faculty and staff are anticipated to increase between $250,000 and $350,000. Annual facility operating costs for the new building are estimated to be $593,688. Operating costs will be offset by additional tuition from increased enrollment and new research funding.

Description of Previous Appropriations

The University received $1.5 million in 2014 to predesign and design a new facility to meet the research and undergraduate instruction needs of the Swenson College of Science and Engineering on the Duluth campus.

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Governor's Recommendation

The Governor recommends $27.167 million in general obligation bonds for this request.

($ in thousands)

Chemistry and Advanced Materials Science Building

PROJECT FUNDING SOURCES

Funding Source	Prior Years	FY 2016	FY 2018	FY 2020
State Funds Requested				
General Obligation Bonds	$ 1,500	$ 27,167	$ 0	$ 0
Funds Already Committed				
GO Bonds-User Financing	$ 750	$ 13,583	$ 0	$ 0
Pending Contributions				
TOTAL	**$ 2,250**	**$ 40,750**	**$ 0**	**$ 0**

TOTAL PROJECT COSTS

Cost Category	Prior Years	FY 2016	FY 2018	FY 2020
Property Acquisition	$ 0	$ 0	$ 0	$ 0
Predesign Fees	$ 190	$ 0	$ 0	$ 0
Design Fees	$ 2,010	$ 728	$ 0	$ 0
Project Management	$ 50	$ 540	$ 0	$ 0
Construction	$ 0	$ 35,849	$ 0	$ 0
Relocation Expenses	$ 0	$ 100	$ 0	$ 0
One Percent for Art	$ 0	$ 333	$ 0	$ 0
Occupancy Costs	$ 0	$ 3,200	$ 0	$ 0
Inflationary Adjustment	$ 0	$ 0	$ 0	$ 0
TOTAL	**$ 2,250**	**$ 40,750**	**$ 0**	**$ 0**

IMPACT ON STATE OPERATING COSTS

Cost Category	FY 2016	FY 2018	FY 2020
IT Costs	$ 0	$ 0	$ 0
Operating Budget Impact ($)	$ 944	$ 0	$ 0
Operating Budget Impact (FTE)	4.0	0.0	0.0

SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS

	Amount	Percent of Total
General Fund	$ 27,167	100 %
User Financing	$ 0	0 %

STATUTORY REQUIREMENTS

The following requirements will apply to projects after adoption of the bonding bill.

M.S. 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)	Yes
M.S. 16B.335(3): Predesign Review Required (by Dept. of Administration)	
Does this request include funding for predesign?	No
Has the predesign been submitted to the Department of Administration?	No
Has the predesign been approved by the Department of Administration?	No
M.S. 16B.325(1): Sustainable Building Guidelines Met	Yes
M.S. 16B.325(2) and M.S. 16B.335(4): Energy Conservation Guidelines	
Do the project designs meet the guidelines?	Yes
Does the project demonstrate compliance with the standards?	Yes
M.S. 16B.335(5 & 6): Information Technology Review (by MN.IT)	N/A
M.S. 16A.695: Public Ownership Required	Yes
M.S. 16A.695(2): Use Agreement Required	No
M.S. 16A.695(5): Program Funding Review Required (by granting agency)	N/A
M.S. 16A.86 (4b): Matching Funds Required	N/A
M.S. 16A. 642: Project Cancellation in 2021	Yes
M.S. 16A.502 and M.S. 16B.31 (2): Full Funding Required	Yes
M.S. 174.93: Guideway Project	
Is this a Guideway Project?	No
Is the required information included in this request?	N/A

($ in thousands)

Health Sciences Education Facility

AT A GLANCE

2016 Request Amount:	$66,667
Priority Ranking:	3
Project Summary:	This request is for funds to complete design, renovate, construct, furnish and equip education facilities to meet the needs of the Medical School and Academic Health Center on the Twin Cities campus.

Project Description

This project will renovate, modernize and expand the University's medical and health sciences learning facilities. Facility planning work funded during the 2015 session is underway and will guide the final facility solution to be presented during the 2016 session. Active learning environments and student-instructor interaction across disciplines, which are the future state of education in academic health, requires different space than what exists today. New education and learning facilities will include classrooms, simulation centers, small group rooms, an advanced technology-rich biomedical library and student services and community amenities.

The legislative and executive commitment in the 2015 session to address aging and obsolete facilities with a major new investment in health education facilities will increase utilization, flexibility and focus on the interdisciplinary approaches will help a renewed vibrant academic clinical environment, innovation and ground-breaking programs.

Project Rationale

The University is home to Minnesota's only public medical school in addition to health science schools for dentistry, public health, pharmacy, nursing and veterinary medicine. The University's Academic Health Center (AHC) offers 62 accredited professional degrees, educates 6,400 students, and plays a key role in educating Minnesota's health care workforce, with two-thirds of the state's health professionals educated in the AHC. The health of Minnesota families and the economic vitality of the state depend on access to well-trained health providers, innovative health discoveries, quality health care and accessible public health programs.

Today, as Minnesotans live longer and demand for care of an aging population increases and disparities persist in access and in the state's healthcare workforce, health care requires an interdisciplinary approach to care delivery along a full continuum of primary to specialized care. This change in health care delivery calls for a full integration of health education/training, research, and clinical care. In order to meet future workforce needs, inter-professional and team-based practices should be more integrated into the undergraduate, graduate and post graduate curricula.

Today's Medical School accreditation at the national level demands the school addresses the new model of care. The educational shift is reflected in a new curriculum, including an early introduction to the care of patients in the first and second year, as well as exposure to the health care "systems" of a clinic. Meeting these education and training obligations is increasingly difficult in aging and obsolete facilities built for a different era of health education. In order to assure that students and

residents are prepared to meet Minnesota's future physician workforce needs investments must be made to strengthen and expand the Medical Center's educational programs and curriculum through the use of interprofessional team-based learning and care environments. Better and more integrated health professional education will lead to improved healthcare for all Minnesotans.

Other Considerations

None.

Impact on Agency Operating Budgets

None.

Description of Previous Appropriations

Minnesota Statutes 2015, section 137.54 provided for an allocation of $10,000,000 to plan two new facilities - a health sciences education facility and a clinical research facility - and to predesign and start design on the health sciences education facility.

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Governor's Recommendation

The Governor recommends $66.667 million in general obligation bonds for this request.

($ in thousands)

Health Sciences Education Facility

PROJECT FUNDING SOURCES

Funding Source	Prior Years	FY 2016	FY 2018	FY 2020
State Funds Requested				
General Obligation Bonds	$ 0	$ 66,667	$ 0	$ 0
Funds Already Committed				
GO Bonds-User Financing	$ 0	$ 33,333	$ 0	$ 0
Pending Contributions				
TOTAL	**$ 0**	**$ 100,000**	**$ 0**	**$ 0**

TOTAL PROJECT COSTS

Cost Category	Prior Years	FY 2016	FY 2018	FY 2020
Property Acquisition	$ 0	$ 0	$ 0	$ 0
Predesign Fees	$ 0	$ 0	$ 0	$ 0
Design Fees	$ 0	$ 3,800	$ 0	$ 0
Project Management	$ 0	$ 750	$ 0	$ 0
Construction	$ 0	$ 84,139	$ 0	$ 0
Relocation Expenses	$ 0	$ 1,250	$ 0	$ 0
One Percent for Art	$ 0	$ 0	$ 0	$ 0
Occupancy Costs	$ 0	$ 10,061	$ 0	$ 0
Inflationary Adjustment	$ 0	$ 0	$ 0	$ 0
TOTAL	**$ 0**	**$ 100,000**	**$ 0**	**$ 0**

IMPACT ON STATE OPERATING COSTS

Cost Category	FY 2016	FY 2018	FY 2020
IT Costs	$ 0	$ 0	$ 0
Operating Budget Impact ($)	$ 0	$ 0	$ 0
Operating Budget Impact (FTE)	0.0	0.0	0.0

SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS

	Amount	Percent of Total
General Fund	$ 66,667	100 %
User Financing	$ 0	0 %

STATUTORY REQUIREMENTS

The following requirements will apply to projects after adoption of the bonding bill.

M.S. 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)	Yes
M.S. 16B.335(3): Predesign Review Required (by Dept. of Administration)	
Does this request include funding for predesign?	No
Has the predesign been submitted to the Department of Administration?	No
Has the predesign been approved by the Department of Administration?	No
M.S. 16B.325(1): Sustainable Building Guidelines Met	Yes
M.S. 16B.325(2) and M.S. 16B.335(4): Energy Conservation Guidelines	
Do the project designs meet the guidelines?	Yes
Does the project demonstrate compliance with the standards?	Yes
M.S. 16B.335(5 & 6): Information Technology Review (by MN.IT)	N/A
M.S. 16A.695: Public Ownership Required	Yes
M.S. 16A.695(2): Use Agreement Required	No
M.S. 16A.695(5): Program Funding Review Required (by granting agency)	N/A
M.S. 16A.86 (4b): Matching Funds Required	N/A
M.S. 16A. 642: Project Cancellation in 2021	Yes
M.S. 16A.502 and M.S. 16B.31 (2): Full Funding Required	Yes
M.S. 174.93: Guideway Project	
Is this a Guideway Project?	No
Is the required information included in this request?	N/A

($ in thousands)

Plant Growth Research Facility

AT A GLANCE

2016 Request Amount:	$4,400
Priority Ranking:	4
Project Summary:	This request for funds to predesign, design, construct, furnish and equip an addition to the plant growth facilities on the St. Paul campus and to demolish the existing Biological Sciences greenhouse.

Project Description

This project will provide a new approximately 12,000 square foot greenhouse addition to the Plant Growth Facilities for the College of Biological Sciences Conservatory and demolish the existing Biological Sciences Greenhouse on the St. Paul campus. While the existing Plant Growth Facilities are set up for agricultural experimentation, the CBS Conservatory greenhouse will be a specialized unit that serves the related educational missions necessary to ensure the State's agricultural future.

The total cost for this project is estimated to be $6,600,000. The new greenhouse will be located in the planned expansion area of the Plant Growth Facilities, as identified in the Predesign Study for Plant Growth Facilities Renovation, Replacement and Additions (1997). The new greenhouse will be built similar to the neighboring structures, but will include aspects specific to the plant collection requirements. The greenhouse for the Biological Sciences Conservatory will be furnished with modern temperature, humidity and lighting controls and monitored via the master greenhouse campus control system. Upon completion, plant specimens and program activities currently housed in the existing Biological Sciences Greenhouse will be moved to the new facility and the old greenhouse will be demolished.

Project Rationale

The College of Biological Sciences (CBS) offers an exceptional, nationally recognized educational experience. Replacement of the existing Biological Sciences Greenhouse is essential to meet increased demand for enrollment and to secure a strong return on investment in the rapidly growing life sciences. Today, 33 Faculty, 40 teaching assistants and four support staff teaching 13 courses, depend on the collections and services of the Biological Sciences Greenhouse. The annual enrollment for those courses is more than 1,600 students. The building has a strong outreach function as well, with regular visits from school groups, horticulture clubs, K-12 educators and the broader community.

The University of Minnesota's undergraduate biology program has garnered national attention due to its signature programs (e.g., Nature of Life), its leading edge curriculum, and its pioneering application and use of the active learning classroom. STEM education requires a living plant collection where extremes of diversity and adaptation are displayed and studied across a broad range of environments. A new and expanded conservatory will remove current constraints to increasing enrollment and enable students to conduct independently designed research. Student interest in the biological sciences is booming across the country. Currently, there are eighteen

students who apply for every single seat in the CBS freshman class. Total student enrollment in CBS is anticipated to increase by up to 40% by the fall of 2018.

The Biological Sciences Conservatory is home to a biodiverse collection of plant species to assist current and future research, help preserve the Earth's plant diversity, as well as building an appreciation for the richness of plant life on our planet in both students and the public. Conservatory staff service the needs of classes, researchers, and the surrounding community through making both our plants and expertise available. The collection is one of the most diverse in the upper Midwestern United States, containing over 1,200 species of plants. The Conservatory cares for everything from rare and endangered plants, to invasive species, to plants that show developing economic potential, to clones of original genome sequenced accessions. The material from this diverse living collection is leveraged for the maximum benefit for our students, scientists, and the public at large.

Through hands-on exposure to living plants within the Biological Sciences Conservatory, students in CBS, CFANS, and other colleges learn how opportunities for discovery and problem solving are rooted in the diversity of life. This education prepares university students to become the next generation of problem solvers in agriculture and food safety, environmental protection and restoration, as well as the production of natural and synthetic products for medical and non-medical uses.

The existing greenhouse is a fragile structure, costly to operate and rife with problems that are expensive to fix. Environmental, structural and functional deficiencies have resulted in escalating maintenance and repair costs, and serious safety issues. Failure of seals around large glass panes allows glass to shift and fall. High humidity levels, resulting in extensive cracking and spalling of the exterior concrete masonry unit kneewalls, and the freeze and thaw cycles have heightened the rate of deterioration of the greenhouse. This facility has the smallest footprint of any like buildings on the St. Paul campus but has the highest energy use and the second highest C02 emissions. Gaps in the structure's foundation further compromise the plant collections and student projects as a result of insect migration.

Diverse and dynamic greenhouse displays are a highly effective means of communicating the university mission to the broader public. The Biological Sciences Conservatory will demonstrate with living examples how fundamental discoveries are translated into economic and environmental solutions for Minnesota. A new facility will breathe new life into a diverse encyclopedia of rare and spectacular plants by replacing an isolated greenhouse already deteriorated beyond repair with one that is energy efficient and integrated with existing facilities for teaching and research.

Other Considerations

None.

Impact on Agency Operating Budgets

Total annual facility operating costs are expected to be reduced by more than $90,000 with the completion of this project, including demolition of the existing Biological Sciences Greenhouse. There are no changes expected in personnel costs as the staff currently operating the Biological Sciences Conservatory will continue to maintain the collection without adding staff.

Description of Previous Appropriations

None.

Project Contact Person

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Governor's Recommendation

The Governor recommends $4.4 million in general obligation bonds for this request.

($ in thousands)

Plant Growth Research Facility

PROJECT FUNDING SOURCES

Funding Source	Prior Years	FY 2016	FY 2018	FY 2020
State Funds Requested				
General Obligation Bonds	$ 0	$ 4,400	$ 0	$ 0
Funds Already Committed				
GO Bonds-User Financing	$ 36	$ 2,164	$ 0	$ 0
Pending Contributions				
TOTAL	**$ 36**	**$ 6,564**	**$ 0**	**$ 0**

TOTAL PROJECT COSTS

Cost Category	Prior Years	FY 2016	FY 2018	FY 2020
Property Acquisition	$ 0	$ 0	$ 0	$ 0
Predesign Fees	$ 36	$ 0	$ 0	$ 0
Design Fees	$ 0	$ 555	$ 0	$ 0
Project Management	$ 0	$ 275	$ 0	$ 0
Construction	$ 0	$ 5,501	$ 0	$ 0
Relocation Expenses	$ 0	$ 99	$ 0	$ 0
One Percent for Art	$ 0	$ 0	$ 0	$ 0
Occupancy Costs	$ 0	$ 134	$ 0	$ 0
Inflationary Adjustment	$ 0	$ 0	$ 0	$ 0
TOTAL	**$ 36**	**$ 6,564**	**$ 0**	**$ 0**

IMPACT ON STATE OPERATING COSTS

Cost Category	FY 2016	FY 2018	FY 2020
IT Costs	$ 0	$ 0	$ 0
Operating Budget Impact ($)	$ -90	$ 0	$ 0
Operating Budget Impact (FTE)	0.0	0.0	0.0

SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS

	Amount	Percent of Total
General Fund	$ 4,400	100 %
User Financing	$ 0	0 %

STATUTORY REQUIREMENTS

The following requirements will apply to projects after adoption of the bonding bill.

M.S. 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)	Yes
M.S. 16B.335(3): Predesign Review Required (by Dept. of Administration)	
Does this request include funding for predesign?	Yes
Has the predesign been submitted to the Department of Administration?	No
Has the predesign been approved by the Department of Administration?	No
M.S. 16B.325(1): Sustainable Building Guidelines Met	Yes
M.S. 16B.325(2) and M.S. 16B.335(4): Energy Conservation Guidelines	
Do the project designs meet the guidelines?	Yes
Does the project demonstrate compliance with the standards?	Yes
M.S. 16B.335(5 & 6): Information Technology Review (by MN.IT)	N/A
M.S. 16A.695: Public Ownership Required	Yes
M.S. 16A.695(2): Use Agreement Required	No
M.S. 16A.695(5): Program Funding Review Required (by granting agency)	N/A
M.S. 16A.86 (4b): Matching Funds Required	N/A
M.S. 16A. 642: Project Cancellation in 2021	Yes
M.S. 16A.502 and M.S. 16B.31 (2): Full Funding Required	Yes
M.S. 174.93: Guideway Project	
Is this a Guideway Project?	No
Is the required information included in this request?	N/A

($ in thousands)

Academic and Student Experience Investments

AT A GLANCE

2016 Request Amount:	$16,000
Priority Ranking:	5
Project Summary:	This request is for funds to predesign, design, renovate, furnish and equip existing teaching, student support and research facilities on the Duluth, Morris, Crookston and Twin Cities campus.

Project Description

This request is for funds to make targeted strategic investments in modernizing existing teaching, research, outreach and student support spaces on the University's Duluth, Morris, Crookston and Twin Cities campuses. Similar to appropriations for laboratory renovations in 2008 and 2010, this request is intended to update individual spaces that will not otherwise be improved through whole building renovations. Funds will be allocated to each campus to advance high priority projects focused on learning spaces, student support services and research laboratories.

Sample projects include:

- Renovation of obsolete biological sciences library space into modern laboratories
- Creation of new active learning classrooms, traditional classrooms, and small group study spaces
- Conversion of underutilized space into modern teaching and research space

Project Rationale

Learning spaces are at the heart of the University's teaching mission. To meet the needs of faculty and the expectations of students, the University must provide modern, technology-rich classrooms in order to optimize teaching and learning. Improved, up-to-date classrooms, instructional laboratories, and collaboration spaces are essential to attract the best and brightest students and remain competitive with other regional universities. The overall student experience at the University of Minnesota will be improved by enhancing the physical environment and adding modern classroom learning technologies.

Active Learning Classrooms (ALCs), a component of the programmatic request, are designed to foster interactive, flexible, student-centered learning experiences, and to operate using central teaching stations and student-provided laptops. ALCs offer cooperative learning environments that encourage student collaboration and peer teaching, the ability for instructors to interactively coach students during activities and new options for student interaction and class structure.

Modern research facilities are essential to the University's nationally-ranked basic and applied research programs. Research funding and national competitiveness depend upon an institution's researchers, and state-of-the-art laboratories are the foundation of the solid research program at the University of Minnesota. Updated facilities are critical to attract and retain top faculty and students

and to obtain competitively awarded sponsored research grants. Without state-of-the-art laboratories in which to conduct their research, faculty will choose other institutions with better facilities.

Other Considerations

None.

Impact on Agency Operating Budgets

None.

Description of Previous Appropriations

None.

Project Contact Person

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Governor's Recommendation

The Governor does not recommend capital funding for this request.

($ in thousands)

Academic and Student Experience Investments

PROJECT FUNDING SOURCES

Funding Source	Prior Years	FY 2016	FY 2018	FY 2020
State Funds Requested				
General Obligation Bonds	$ 0	$ 16,000	$ 0	$ 0
Funds Already Committed				
GO Bonds-User Financing	$ 0	$ 8,000	$ 0	$ 0
Pending Contributions				
TOTAL	**$ 0**	**$ 24,000**	**$ 0**	**$ 0**

TOTAL PROJECT COSTS

Cost Category	Prior Years	FY 2016	FY 2018	FY 2020
Property Acquisition	$ 0	$ 0	$ 0	$ 0
Predesign Fees	$ 0	$ 240	$ 0	$ 0
Design Fees	$ 0	$ 2,400	$ 0	$ 0
Project Management	$ 0	$ 720	$ 0	$ 0
Construction	$ 0	$ 18,960	$ 0	$ 0
Relocation Expenses	$ 0	$ 240	$ 0	$ 0
One Percent for Art	$ 0	$ 240	$ 0	$ 0
Occupancy Costs	$ 0	$ 1,200	$ 0	$ 0
Inflationary Adjustment	$ 0	$ 0	$ 0	$ 0
TOTAL	**$ 0**	**$ 24,000**	**$ 0**	**$ 0**

IMPACT ON STATE OPERATING COSTS

Cost Category	FY 2016	FY 2018	FY 2020
IT Costs	$ 0	$ 0	$ 0
Operating Budget Impact ($)	$ 0	$ 0	$ 0
Operating Budget Impact (FTE)	0.0	0.0	0.0

SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS

	Amount	Percent of Total
General Fund	$ 16,000	100 %
User Financing	$ 0	0 %

STATUTORY REQUIREMENTS

The following requirements will apply to projects after adoption of the bonding bill.

M.S. 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)	Yes
M.S. 16B.335(3): Predesign Review Required (by Dept. of Administration)	
Does this request include funding for predesign?	Yes
Has the predesign been submitted to the Department of Administration?	No
Has the predesign been approved by the Department of Administration?	No
M.S. 16B.325(1): Sustainable Building Guidelines Met	Yes
M.S. 16B.325(2) and M.S. 16B.335(4): Energy Conservation Guidelines	
Do the project designs meet the guidelines?	Yes
Does the project demonstrate compliance with the standards?	Yes
M.S. 16B.335(5 & 6): Information Technology Review (by MN.IT)	N/A
M.S. 16A.695: Public Ownership Required	Yes
M.S. 16A.695(2): Use Agreement Required	No
M.S. 16A.695(5): Program Funding Review Required (by granting agency)	N/A
M.S. 16A.86 (4b): Matching Funds Required	N/A
M.S. 16A. 642: Project Cancellation in 2021	Yes
M.S. 16A.502 and M.S. 16B.31 (2): Full Funding Required	Yes
M.S. 174.93: Guideway Project	
Is this a Guideway Project?	No
Is the required information included in this request?	N/A

($ in thousands)

Pillsbury Hall Renovation

AT A GLANCE

2016 Request Amount:	$22,000
Priority Ranking:	6
Project Summary:	This request is for funds to predesign, design, renovate, furnish and equip historic Pillsbury Hall on the Minneapolis campus.

Project Description

This project will completely renovate Pillsbury Hall, replacing obsolete science facilities with modern, flexible non-laboratory teaching, learning, and research spaces for College of Liberal Arts' humanities programs including the Department of English (which teaches nearly 6,000 students per year). The renovated space is anticipated to be divided approximately equally between classroom- and assembly-type space to support multiple modes of learning and alternative workplace office space. At nearly 60,000 gross square feet, the renovation is expected to maintain an equivalent amount of space when complete. The rehabilitation of Pillsbury Hall is expected to be consistent with the Secretary of the Interior's Standards for Preservation.

Project Rationale

Pillsbury Hall is the second oldest and one of the most iconic buildings on campus and is a key component of a sequenced plan: (1) relocating the Department of Physics from Tate Laboratory to its new building, (2) relocating the Department of Earth Sciences (formerly Geology and Geophysics) from Pillsbury Hall to a renovated Tate Laboratory, (3) relocating the Department of English from Lind Hall to a renovated Pillsbury Hall, and (4) freeing up Lind Hall for other use.

While Pillsbury Hall is no longer adaptable to modern science research or teaching, it plays a significant role in the East Bank humanities district, which encompasses Folwell, Jones, Nicholson, Nolte, Pillsbury and Scott halls. Recent and planned investments in these buildings all built between 1889 and 1935 on the historic knoll – locate the humanities in proximity, thus creating synergies and collaborations among them, while preserving the University's historic assets for future generations. The renovated Pillsbury Hall is planned to house the Department of English (as the major tenant) and the College of Liberal Arts Minnesota Engagement Lab, focused on research teaching and public service.

English teaches nearly 6,000 students per year, generating about 20,000 student credit hours of non-English major instruction each year and teaching the core skills of liberal education – close reading, textual analysis, and scholarly and creative writing to the entire undergraduate student body. In 2014, English had 627 undergraduate majors, 36 MFA students in the Creative Writing Program, and 77 MA/PhD students in the Literature Program. It is the most popular humanities major on campus with high national rankings.

The new Pillsbury Hall will also be home to the Minnesota Engagement Lab (MEL). MEL is planned to be an innovative and technologically equipped humanities engagement lab where scholars, students, and community members will address challenges facing Minnesota citizens through focused projects,

such as rural and urban access to food resources, histories of Minnesota immigrant institutions and neighborhoods, and literature and literacy services to communities. The high-tech interactive spaces will advance the University's and CLA's goals of integrating research, teaching, and public service about the human condition, producing future leaders who will use the knowledge, skills, and collaboration they learned here to build vibrant communities.

The other feature of Pillsbury Hall will be spaces for production and presentation activities. Production spaces will be equipped with technologies that enable journal editing, video making, digital storytelling, website building, and web-based research. Flexible presentation spaces will host a wide variety of events convened annually by English and other humanities departments

Other Considerations

None.

Impact on Agency Operating Budgets

The annual operating cost for the renovated facility is anticipated to increase approximately $70,000 over the cost to operate the current facility.

Description of Previous Appropriations

None.

Project Contact Person

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Governor's Recommendation

The Governor does not recommend capital funding for this request.

($ in thousands)

Pillsbury Hall Renovation

PROJECT FUNDING SOURCES

Funding Source	Prior Years	FY 2016	FY 2018	FY 2020
State Funds Requested				
General Obligation Bonds	$ 0	$ 22,000	$ 0	$ 0
Funds Already Committed				
GO Bonds-User Financing	$ 0	$ 11,000	$ 0	$ 0
Pending Contributions				
TOTAL	**$ 0**	**$ 33,000**	**$ 0**	**$ 0**

TOTAL PROJECT COSTS

Cost Category	Prior Years	FY 2016	FY 2018	FY 2020
Property Acquisition	$ 0	$ 0	$ 0	$ 0
Predesign Fees	$ 0	$ 409	$ 0	$ 0
Design Fees	$ 0	$ 2,427	$ 0	$ 0
Project Management	$ 0	$ 595	$ 0	$ 0
Construction	$ 0	$ 27,769	$ 0	$ 0
Relocation Expenses	$ 0	$ 300	$ 0	$ 0
One Percent for Art	$ 0	$ 0	$ 0	$ 0
Occupancy Costs	$ 0	$ 1,500	$ 0	$ 0
Inflationary Adjustment	$ 0	$ 0	$ 0	$ 0
TOTAL	**$ 0**	**$ 33,000**	**$ 0**	**$ 0**

IMPACT ON STATE OPERATING COSTS

Cost Category	FY 2016	FY 2018	FY 2020
IT Costs	$ 0	$ 0	$ 0
Operating Budget Impact ($)	$ 70	$ 0	$ 0
Operating Budget Impact (FTE)	0.0	0.0	0.0

SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS

	Amount	Percent of Total
General Fund	$ 22,000	100 %
User Financing	$ 0	0 %

STATUTORY REQUIREMENTS

The following requirements will apply to projects after adoption of the bonding bill.

M.S. 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)	Yes
M.S. 16B.335(3): Predesign Review Required (by Dept. of Administration)	
Does this request include funding for predesign?	Yes
Has the predesign been submitted to the Department of Administration?	No
Has the predesign been approved by the Department of Administration?	No
M.S. 16B.325(1): Sustainable Building Guidelines Met	Yes
M.S. 16B.325(2) and M.S. 16B.335(4): Energy Conservation Guidelines	
Do the project designs meet the guidelines?	Yes
Does the project demonstrate compliance with the standards?	Yes
M.S. 16B.335(5 & 6): Information Technology Review (by MN.IT)	N/A
M.S. 16A.695: Public Ownership Required	Yes
M.S. 16A.695(2): Use Agreement Required	No
M.S. 16A.695(5): Program Funding Review Required (by granting agency)	N/A
M.S. 16A.86 (4b): Matching Funds Required	N/A
M.S. 16A. 642: Project Cancellation in 2021	Yes
M.S. 16A.502 and M.S. 16B.31 (2): Full Funding Required	Yes
M.S. 174.93: Guideway Project	
Is this a Guideway Project?	No
Is the required information included in this request?	N/A