Health

Projects Summary

($ in thousands)

Project Title	Rank	Fund	Project Requests for State Funds 2018	2020	2022	Gov's Rec 2018	Gov's Planning Estimates 2020	2022
Public Health Lab Capital Equipment	1	GF	2,327	0	0	0	0	0
Total Project Requests			2,327	0	0	0	0	0
General Fund Cash (GF) Total			2,327	0	0	0	0	0

http://www.health.state.mn.us/

AT A GLANCE

- Use the best scientific data and methods available to guide policies and actions that protect, maintain and improve the health of all Minnesotans and help ensure the conditions in which all people can be healthy.
- Successfully meet rigorous standards set by the Public Health Accreditation Board each year.
- Secure federal funding to support critical public health activities in the state—more than $260 million in FY 2015.
- Provide guidance and oversight for nearly $300 million in outgoing grants to 500 unique grantees.
- Maintain a highly skilled workforce of nearly 1,550 people that includes MDs, PHD's, nurses, health educators, biologists, chemists, epidemiologists and engineers.

PURPOSE

The Minnesota Department of Health (MDH) mission is to protect, maintain and improve the health of all Minnesotans. MDH is the state's lead public health agency, responsible for operating programs that prevent infectious and chronic diseases, while promoting clean water and air, safe food, quality health care and healthy living. The department works to improve the equity of health outcomes in the state by incorporating health equity considerations into every decision or activity in which the department is engaged. MDH carries out its mission in close partnership with local public health departments, tribal governments, the federal government and many health-related organizations. In meeting its responsibilities, the department recognizes the strong relationship between population health and other government policies. As a result, MDH impacts many goals and outcomes for the state including:

- **All Minnesotans have optimal health**
- **Strong and stable families and communities**
- **People in Minnesota are safe**
- **A clean, healthy environment with sustainable uses of natural resources**
- **Minnesotans have the education and skills needed to achieve their goals**
- **Efficient and accountable government services**

STRATEGIES

The MDH vision is for health equity in Minnesota, where all communities are thriving and all people have what they need to be healthy. While Minnesota ranks as one of the healthiest states in the nation, a 2014 MDH report (http://www.health.state.mn.us/divs/chs/healthequity/ahe_leg_report_020114.pdf) found significant and persistent disparities in health outcomes. The report found these disparate outcomes exist because the opportunity to be healthy is not equally available everywhere for everyone in the state. Furthermore, these disparities have a negative impact on the health of all Minnesotans, preventing all Minnesotans from achieving their full health potential. For these reasons, MDH has made advancing health equity a major priority. Improving the health of those experiencing the greatest inequities will result in improved health outcomes for all.

MDH's Strategic Plan: 2015-2019 (http://www.health.state.mn.us/about/strategicplan.pdf) has several strategies for intentionally changing the way we approach our work:

- Build a shared understanding and internal capacity for advancing health equity.
- Identify and creatively address barriers to working differently.
- Change systems, structures and policies that perpetuate inequities and structural racism.
- Listen authentically to and partner with communities.
- Improve the collection, analysis and use of data for advancing health equity.
- Communicate our commitment to advancing health equity.

The Department of Health is governed by a number of statutes. Most sections governing department activities are in
M.S. Chapters 144 (https://www.revisor.mn.gov/statutes/?id=144)
M.S. Chapters 145 (https://www.revisor.mn.gov/statutes/?id=145)
M.S. Chapter 145A (https://www.revisor.mn.gov/statutes/?id=145A)
M.S. Chapters 62J. (https://www.revisor.mn.gov/statutes/?id=62j)
Each activity narrative lists additional relevant statutes.

At A Glance

- Public Health Laboratory. The MDA/MDH Laboratory Building, built in 2005, plays a critical role in maintaining a strong public health system in the state and nation. Sophisticated and up-to-date facilities and capital equipment are essential for the Minnesota Department of Health (MDH) Public Health Laboratory (PHL) to perform critical laboratory testing and screening related to environmental risks, infectious diseases, and other public health threats.
- Meet National Quality Standards. The work of MDH must be science-based and meet required federal laboratory quality standards. Demonstrating laboratory capacity for rapid detection, investigation, and containment of public health problems and environmental hazards is necessary to maintain MDH's prestigious public health accreditation status, which is reassessed in 2019.
- Ready to Respond. The PHL must continuously revise its testing methods and capabilities in response to ever-changing chemical and biological threats. MDH also plays a critical role in emergency preparedness and response. The state must make periodic investments in laboratory spaces, specialized building systems, and new instrumentation to be ready to respond to evolving public health needs.

Factors Impacting Facilities or Capital Programs

The Minnesota Department of Health (MDH) Public Health Laboratory (PHL) performs critical laboratory testing to detect public health threats. Much of this testing is not available at other laboratories and requires the use of sophisticated facilities and instrumentation.

The PHL screens newborn babies for treatable heritable disorders and monitors for the emergence of new infectious disease organisms. It investigates infectious disease outbreaks and tests for the presence of harmful chemicals in the environment, in humans, and occasionally in food and consumer products. It is also capable of detecting potential biological and chemical terrorism threats, such as anthrax and nerve agents.

The PHL employs sophisticated equipment and procedures that require highly specialized facilities with:

- unique utilities. For example, systems that purify water for use in testing and then remove acids and bases from water before it returns to the sewer system.
- tight controls over temperature, humidity, and air flow direction.
- safety devices. For example, fume hoods and biosafety cabinets that protect staff from exposure to harmful substances.

Each year the PHL faces new challenges in terms of the types and complexity of the testing it performs, which drives demand for changes in facilities and systems.

The PHL operates in the MDA/MDH Laboratory Building, a twelve year-old facility shared with the Department of Agriculture. The MDA/MDH Lab Building was completed in 2005 using $60 million in general obligation bond proceeds approved by the Legislature in 2002. The building includes 83,238 square feet of space for the PHL. In the original building plans, a portion of the PHL space was intentionally left as unfinished space for future expansion. Since 2005, the technology used for testing has changed dramatically and the need for flexible space for laboratory instrumentation has greatly increased.

Self-Assessment of Agency Facilities and Assets

Retro-commissioning. In the fall of 2015, the Department of Administration initiated the retro-commissioning of the MDA/MDH laboratory facility to determine if the building and its various systems are performing as originally designed and providing a stable environment for laboratory testing. The results of the retro-commissioning study highlighted several building infrastructure

improvements required to make this facility function correctly and safely. The recommendations include general architectural, mechanical, and electrical improvements throughout the building to correct safety, and operational efficiency problems.

Need for Expansion Space. The PHL has reached its capacity in terms of functional space, and will need to develop and make more efficient use of its underutilized space in order to meet future demands as well as to quickly ramp up operations during an emergency event like an influenza outbreak or for Ebola testing.

Water Damage. In January 2014, extremely cold weather led to a failure of heating/cooling systems that caused a number of pipes to burst, resulting in significant damage to the lab facility and equipment. The total cost of the damage was over $1 million for initial clean up, rebuilding, replacing destroyed equipment, and loss of staff time and agency income. While a portion of those costs were covered by insurance, the nearly year-long recovery process significantly disrupted laboratory activities. The lab continues to experience periodic work interruptions from water leakage and failures in building systems.

Equipment at End of Useful Life. Much of the capital equipment in the lab is at least ten years old, which is beyond the useful life of the equipment. The capital equipment in the lab varies greatly in terms of cost and replacement value. The cost of replacing capital equipment in the lab varies, with some equipment such as mass spectrometers costing as much as $400,000 each.

Agency Process for Determining Capital Requests

MDH's plans for current and future capital assets are driven by the department's mission to protect, improve, and maintain the health of all Minnesotans. Decisions about proposals for new investments in capital assets at the department are based on the imperative to maximize the effectiveness, efficiency, and security of the public health system in the state. Laboratory facility and equipment needs are given top consideration given the PHL's critical role in providing testing to support core public health services.

Major Capital Projects Authorized in 2016 and 2017

No major capital projects were authorized in 2016 or 2017.

($ in thousands)

Public Health Lab Capital Equipment

AT A GLANCE

2018 Request Amount:	$2,327
Priority Ranking:	1
Project Summary:	$2.327 million in state funds to purchase capital equipment necessary for the Public Health Laboratory to detect and investigate emerging infectious diseases, foodborne illness outbreaks, disorders of newborns, and chemical contaminants that pose a threat to human health.

Project Description

The Minnesota Department of Health Public Health Laboratory (MDH-PHL) performs critical laboratory testing to detect public health threats, including foodborne illnesses such as Salmonella, emerging infectious disease threats like Ebola, rare but treatable disorders in newborns, and hazardous chemicals in the environment. Much of the testing performed at MDH-PHL is not available in other laboratories and requires the use of sophisticated facilities and instrumentation.

This proposal provides capital equipment necessary to:

- Support faster and more accurate detection of health threats and to ensure MDH and its partners in other state agencies have the best scientific data and methods available to protect the health of Minnesotans.
- Replace equipment that is no longer supported by the vendor and undermines the security of the state's information technology infrastructure.
- Meet increased demand from MDH programs and state agency partners for specialized laboratory testing, which has grown significantly in recent years.

Funding would be used to purchase approximately 17 instruments, which range from a $40,000 alpha spectrometer that detects radiation from a nuclear power plant accident or "dirty bomb" to a $400,000 triple quad mass spectrometer for detecting contaminants in environmental samples or human specimens (e.g. biomonitoring for perfluorochemicals (PFCs) in the east metro). A small portion of the funding would be used to replace parts of water and air purification systems to maintain a stable environment for laboratory testing and ensure acids are removed from wastewater before it exits the building.

Project Rationale

State-of-the art equipment enables the laboratory to detect extremely small amounts of chemical contaminants and more rapidly detect infectious diseases. Without advanced testing methods, we will be missing key pieces of data needed to respond to ever-changing chemical and biological threats. MDH must continuously update laboratory capital equipment to maintain our ability to detect harmful chemical compounds and radioactive substances, or novel biological threats, such as avian influenza or Ebola.

While the MDH-PHL has existing capital equipment valued at approximately $10 million, there is no

other budget mechanism to substantially replace obsolete instruments or to expand laboratory capability. Failure to replace aging equipment poses an unacceptable risk to lab capability and readiness to respond to outbreaks and emergencies that require laboratory services.

The laboratory facility shared by the departments of Health and Agriculture was completed in 2005. Analytical and support equipment purchased at the time of construction is nearing the end of its projected service life. Because of advances in technology, analytical instruments currently in use by the laboratory have become outdated and have either been replaced by newer technologies or are no longer supported by the vendor. Investment in newer, more sensitive and reliable technologies is needed to maintain or build capacity for critical testing in the areas of:

Foodborne illness outbreaks. MDH-PHL was designated as a Genome Tracker site by the U.S. Food and Drug Administration (FDA) in 2013. FDA provided the equipment, reagents, and personnel to perform DNA sequencing on the important foodborne pathogen, Salmonella. MDH-PHL has recently used this technology to identify multiple outbreaks of foodborne illness related to frozen chicken products, which would not have been possible without the sophisticated equipment donated by the FDA. The MDH-PHL now needs to expand capacity to do more testing and needs to supplement the FDA-donated instrument with one that can quickly process a large number of samples.

Emerging infectious diseases. MDH-PHL was one of the laboratories selected by the Centers for Disease Control and Prevention as an Ebola testing site due to the availability of advanced technology, adequate facilities to protect staff and public safety, and experienced and willing laboratory staff. However, capital equipment used to perform this work is aging and needs to be replaced to be able to keep pace with new technologies and newly identified infectious diseases.

Rare but treatable disorders in newborns. MDH-PHL screens newborns for 60 treatable disorders. Improvements to analytical methods have resulted in increased sensitivity and specificity of these tests, resulting in fewer false negative and false positive test results, which results in improved outcomes for newborns and their families. Early identification and treatment of a newborn's rare or hidden disorder can prevent a child's illness, physical disability, developmental delay, or death.

Chemicals in the environment. MDH-PHL performs testing for chemicals of emerging concern, such as pharmaceutical compounds, hazardous chemicals, and radioactive substances, which are increasingly found in the environment. Biomonitoring studies have been conducted to detect chemical contaminants, for example perflurochemicals, in the blood of Minnesota residents. Data from these analyses are used to design interventions to protect public health. Testing for these compounds requires the use of extremely sophisticated, and expensive, analytical instruments, many of which are reaching the end of their service life.

In addition, the volume and scope of testing at the lab have increased significantly over the last ten years. The number of air, water, and soil tests performed by the Environmental Health Lab increased by almost 20 percent between FY 2012 and FY 2016, and the number of tests performed to identify infectious disease trends and outbreaks increased by 40 percent between FY 2013 and FY 2016. Implementation of newer, more automated technologies enables the laboratory to better handle the increased testing volume.

Failing to replace old instruments whose software cannot be upgraded also poses an IT security risk. Currently, MDH must maintain a separate IT network for older instruments so their security risks do

not threaten other state activities. Maintaining a separate network is inefficient and costly. It is not sufficient to merely replace or upgrade the computer components of old instruments, because newer software cannot be used to run older instrumentation properly. It is necessary to replace the entire instrument including the computer.

Project Timeline

N/A

Other Considerations

The MDH-PHL currently has no funding mechanism to fund the initial purchase of capital equipment and has only a limited budget (approximately $385,000/year) for replacement of existing laboratory equipment. MDH supplements this limited budget by using one-time federal or state funds when available. On occasion, federal partners have provided equipment for special projects, however this is not a reliable mechanism for obtaining critical instrumentation. Most often, federal agencies and other funders only pay for testing to be performed, not for building the capacity to do testing.

Investing in new equipment allows MDH-PHL to leverage additional federal funds that further enhance our ability to protect public health. For example, the laboratory's analytical chemistry ability to detect low levels of chemical contaminants in blood and urine have enabled the laboratory to obtain federal funding to conduct additional studies. Most recently, the MDH-PHL, in collaboration with the University of Minnesota, was awarded funding to act as an assessment hub for the Children's Health Exposure Assessment Resource (CHEAR) project. The project looks at chemical and non-chemical factors that may impact children's health and development.

MDH received national public health accreditation in 2014, after a rigorous site review by the Public Health Accreditation Board, meeting 98% of the National Public Health Accreditation Standards which will be reassessed in five years. These capital investments complement our strategy of maintaining and meeting the standards for national accreditation.

Impact on Agency Operating Budgets

The Department of Health is unable to replace depreciating laboratory assets on a scheduled basis. Operating budgets are currently stretched by efforts to manage these assets. Newly purchased instruments would be covered under a warranty for 1 to 2 years after purchase. After that time maintenance agreements, typically 10% of the purchase price of the instrument annually, will be required. The laboratory is currently paying for maintenance agreements out of existing operating budgets. It would continue to do so under this proposal.

Description of Previous Appropriations

The Health Department has received no state appropriation for the explicit purpose of purchasing capital equipment for the Public Health Lab. However, construction of the laboratory, which is jointly occupied by the Department of Health and the Department of Agriculture, was financed with $60 million in general obligation bonds. Legislation authorizing the use of bonds was enacted in 2002.

Project Contact Person

Brian Awsumb
Budget Director
651-201-5235
brian.awsumb@state.mn.us

Governor's Recommendation

The Governor does not recommend capital funding for this request.

($ in thousands)

Public Health Lab Capital Equipment

PROJECT FUNDING SOURCES

Funding Source	Prior Years	FY 2018	FY 2020	FY 2022
State Funds Requested				
General Fund Cash	$ 0	$ 2,327	$ 0	$ 0
Funds Already Committed				
Pending Contributions				
TOTAL	**$ 0**	**$ 2,327**	**$ 0**	**$ 0**

TOTAL PROJECT COSTS

Cost Category	Prior Years	FY 2018	FY 2020	FY 2022
Property Acquisition	$ 0	$ 2,327	$ 0	$ 0
Predesign Fees	$ 0	$ 0	$ 0	$ 0
Design Fees	$ 0	$ 0	$ 0	$ 0
Project Management	$ 0	$ 0	$ 0	$ 0
Construction	$ 0	$ 0	$ 0	$ 0
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	**$ 0**	**$ 2,327**	**$ 0**	**$ 0**

IMPACT ON STATE OPERATING COSTS

Cost Category	FY 2018	FY 2020	FY 2022
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	$ 0	
User Financing	$ 0	

STATUTORY REQUIREMENTS

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

Is this project exempt from legislative review under M.S. 16B.335 subd. 1a?	No
Predesign Review (M.S. 16B.335 subd. 3):	
Does this request include funding for predesign?	N/A
Has the predesign been submitted to the Department of Administration?	N/A
Has the predesign been approved by the Department of Administration?	N/A
Will the project design meet the Sustainable Building Guidelines under M.S. 16B.325?	N/A
Will the project designs meet applicable requirements and guidelines for energy conservation and alternative energy sources (M.S. 16B.335 subd. 4 and 16B.32)?	N/A
Have Information Technology Review Preconditions been met (M.S. 16B.335 subd. 5 & 6 and 16E.05 subd. 3)?	N/A
Will the project meet public ownership requirements (M.S. 16A.695)?	Yes
Will a use agreement be required (M.S. 16A.695 subd. 2)?	No
Will program funding be reviewed and ensured (M.S. 16A.695 subd. 5)?	N/A
Will the matching funds requirements be met (M.S. 16A.86 subd. 4)?	N/A
Will the project be fully encumbered prior to the Cancellation Deadline (M.S. 16A.642): December 31, 2022?	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?	N/A
Is the required information included in this request?	N/A